



AHMADU BELLO UNIVERSITY, ZARIA

Department of Business Administration

PROCEEDINGS OF THE

**INTERNATIONAL CONFERENCE AND
DOCTORAL COLLOQUIUM ON MANAGEMENT,
ENTREPRENEURSHIP AND RURAL FINANCE**

ICMERF-DC 2026

*Innovations in Management, Entrepreneurship and Rural Finance
for Sustainable Development in Emerging Economies*

ABU CBN Centre of Excellence
Ahmadu Bello University, Zaria, Nigeria

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FOREWORD

It gives me great pleasure to write the Foreword to the Proceedings of the International Conference and Doctoral Colloquium on Management, Entrepreneurship, and Rural Finance (ICMERF-DC 2026), organised by the Department of Business Administration, Ahmadu Bello University, Zaria.

The conference, with the theme “Innovations in Management, Entrepreneurship and Rural Finance for Sustainable Development in Emerging Economies,” is both timely and relevant. It speaks directly to the need for fresh ideas, practical solutions, and evidence-based interventions in addressing the development challenges confronting Nigeria, Africa, and other emerging economies.

The contemporary business and development environment is increasingly shaped by technological advancement, financial innovation, entrepreneurial dynamism, institutional reform, and the growing demand for sustainable economic transformation. Within this context, management scholarship, entrepreneurship research, and rural finance studies provide an important intellectual foundation for understanding how organisations, enterprises, communities, policymakers, and institutions can respond to uncertainty, create value, promote inclusion, and contribute to sustainable development.

These proceedings are therefore more than a collection of academic papers. They represent a valuable scholarly resource that brings together diverse perspectives from academics, researchers, doctoral students, practitioners, and policy-oriented thinkers. The papers contained in this volume address critical issues in digital transformation, business innovation, agricultural finance, microfinance, rural credit systems, human resource management, corporate governance, SME development, risk management, women and youth entrepreneurship, sustainable operations, and technology-driven entrepreneurship.

A particularly commendable feature of ICMERF-DC 2026 is the integration of a doctoral colloquium into the conference structure. This provides a useful platform for mentoring emerging scholars, improving doctoral research quality, and encouraging meaningful academic engagement between experienced researchers and postgraduate students. Such engagement is essential for building the next generation of scholars who will contribute to knowledge, policy, and practice.

I wish to commend the Department of Business Administration, Ahmadu Bello University, Zaria, for hosting this important academic event. The Department has continued to demonstrate commitment to scholarship, research development, professional engagement, and the advancement of management education. I also acknowledge the efforts of the Conference Organising Committee, reviewers, editors, lead paper presenters, keynote speakers, paper contributors, and all participants whose commitment made these proceedings possible.

The theme of the conference is particularly appropriate because sustainable development in emerging economies cannot be achieved through conventional thinking alone. It requires innovation in management practices, entrepreneurship support systems, rural financing models, institutional

frameworks, and policy implementation. It also requires collaboration among universities, government institutions, private sector actors, development partners, and local communities.

I am confident that this volume will serve as a useful reference for academics, students, researchers, policymakers, entrepreneurs, financial institutions, development practitioners, and all stakeholders interested in management, entrepreneurship, rural finance, and sustainable development. It is my hope that the ideas presented here will stimulate further research, inform policy decisions, improve practice, and inspire stronger collaboration across disciplines and sectors.

I warmly congratulate the Department of Business Administration, Ahmadu Bello University, Zaria, and all contributors to these proceedings. I encourage readers to engage critically with the papers and to draw from them insights that can advance scholarship and support sustainable development in emerging economies.

Prof. Nasiru Abdullahi

Department of Business Administration

Ahmadu Bello University, Zaria, Nigeria

MESSAGE FROM THE VICE-CHANCELLOR

It is with great pleasure that I extend warm greetings and congratulations to the Department of Business Administration, Ahmadu Bello University, Zaria, on the successful organisation of the International Conference and Doctoral Colloquium on Management, Entrepreneurship, and Rural Finance (ICMERF-DC 2026), held at the ABU CBN Centre of Excellence, Ahmadu Bello University, Zaria.

The theme of the conference, “Innovations in Management, Entrepreneurship and Rural Finance for Sustainable Development in Emerging Economies,” is timely and significant. Emerging economies continue to face complex challenges relating to poverty reduction, unemployment, financial exclusion, technological disruption, institutional capacity, rural development, and sustainable economic transformation. Addressing these challenges requires rigorous scholarship, innovative thinking, policy-relevant research, and strong collaboration among universities, government, industry, development partners, and society.

Ahmadu Bello University has always recognised the central role of research, teaching, community engagement, and innovation in national development. As one of Nigeria’s foremost universities, ABU remains committed to providing intellectual leadership in addressing the developmental needs of society. This conference is therefore consistent with the University’s mission of advancing knowledge and producing solutions that are relevant to Nigeria, Africa, and the wider global community.

I am particularly pleased that this conference brings together scholars, doctoral researchers, policymakers, entrepreneurs, financial experts, development practitioners, and industry stakeholders to deliberate on critical issues in management, entrepreneurship, and rural finance. The inclusion of a doctoral colloquium is commendable, as it provides an important platform for mentoring early-career researchers, improving the quality of postgraduate research, and strengthening the culture of academic excellence.

The papers contained in these proceedings reflect the breadth and relevance of contemporary research in business and management. They address important themes such as digital transformation, business innovation, agricultural finance, rural credit systems, microfinance, SME development, corporate governance, human resource management, risk management, women and youth entrepreneurship, sustainable supply chain management, and technology-driven entrepreneurship. These areas speak directly to the development priorities of emerging economies and the need for inclusive growth.

I wish to commend the Head of Department, the Chairman and members of the Conference Organising Committee, the editors, reviewers, keynote speakers, lead paper presenters, paper contributors, and all participants for their valuable contributions to the success of this academic gathering. Their collective efforts have produced a platform for knowledge exchange, scholarly networking, policy dialogue, and practical engagement.

It is my hope that the ideas, findings, and recommendations presented in these proceedings will not end within the pages of this volume, but will stimulate further research, influence policy formulation, guide institutional practice, and inspire entrepreneurial and developmental initiatives. Universities must continue to serve as centres of knowledge creation and as partners in solving real societal problems.

On behalf of Ahmadu Bello University, Zaria, I congratulate the Department of Business Administration for this laudable achievement. I also invite readers to engage with the papers in these proceedings and to contribute to the continuing conversation on innovation, entrepreneurship, rural finance, and sustainable development.

Prof. Adamu Ahmed

Vice-Chancellor

Ahmadu Bello University, Zaria, Nigeria

MESSAGE FROM THE HEAD OF DEPARTMENT

It is with great honour and a deep sense of fulfilment that I welcome readers to the Proceedings of the International Conference and Doctoral Colloquium on Management, Entrepreneurship, and Rural Finance (ICMERF-DC 2026), organised by the Department of Business Administration, Ahmadu Bello University, Zaria.

The conference, with the theme “Innovations in Management, Entrepreneurship and Rural Finance for Sustainable Development in Emerging Economies,” reflects the commitment of the Department to promoting scholarship that is relevant, practical, and responsive to societal needs. In today’s rapidly changing world, emerging economies require innovative approaches to management, entrepreneurship, rural finance, digital transformation, governance, SME development, and inclusive economic growth. This conference was therefore conceived as a platform for scholars, doctoral researchers, policymakers, practitioners, and industry stakeholders to engage with these critical issues.

The Department of Business Administration is proud to host this important academic gathering. As a Department with a long-standing tradition of teaching, research, and service, we recognise the importance of creating spaces where ideas can be shared, research can be improved, and collaboration can be strengthened. The doctoral colloquium component is particularly important, as it gives doctoral students and emerging scholars the opportunity to receive academic guidance, interact with experienced researchers, and strengthen the quality of their work.

The papers contained in these proceedings cover a wide range of contemporary issues in management, entrepreneurship, and rural finance. They address themes such as digital transformation and business innovation, human resource management in the digital age, leadership and corporate governance, microfinance and rural credit systems, policy and institutional support for SMEs, sustainable supply chain management, risk management, technology-driven entrepreneurship, and women and youth entrepreneurship. These contributions demonstrate the richness of the conference and its relevance to the development challenges of Nigeria, Africa, and other emerging economies.

On behalf of the Department, I sincerely appreciate the Vice-Chancellor and the University Management for their support and encouragement. I also acknowledge our distinguished guests, keynote speakers, lead paper presenters, paper contributors, reviewers, editors, participants, and all stakeholders who contributed to the success of the conference. Special appreciation goes to the Chairman and members of the Conference Organising Committee for their dedication, sacrifice, and commitment.

It is our hope that these proceedings will serve as a useful academic and policy resource. Beyond documenting the papers presented at the conference, they should stimulate further research, encourage interdisciplinary collaboration, support evidence-based decision-making, and contribute to practical solutions in management, entrepreneurship, and rural finance.

I congratulate all authors whose papers appear in this volume and encourage readers to engage critically with the ideas presented. The Department of Business Administration remains committed to advancing knowledge, developing human capacity, and contributing meaningfully to sustainable development through teaching, research, and community engagement.

Once again, I welcome you to these important proceedings and wish you a rewarding engagement with their contents.

Dr. Ladan Sahnun

Head, Department of Business Administration

Ahmadu Bello University, Zaria, Nigeria

CHAIRMAN’S WELCOME ADDRESS

It is my great pleasure and honour to welcome you to the International Conference and Doctoral Colloquium on Management, Entrepreneurship, and Rural Finance (ICMERF-DC 2026), organised by the Department of Business Administration, Ahmadu Bello University, Zaria.

On behalf of the Conference Organising Committee, I warmly welcome our distinguished guests, keynote speakers, lead paper presenters, scholars, doctoral researchers, practitioners, policymakers, industry representatives, students, and all participants to this important academic gathering. Your presence and contributions have given meaning and strength to this conference, and we are sincerely grateful.

The theme of the conference, “Innovations in Management, Entrepreneurship and Rural Finance for Sustainable Development in Emerging Economies,” was carefully chosen in recognition of the urgent need for new ideas, practical solutions, and evidence-based strategies for addressing the development challenges facing emerging economies. Issues such as financial inclusion, entrepreneurship development, rural transformation, digital innovation, institutional support for SMEs, leadership, governance, and human capital development require serious academic and policy attention.

This conference provides a platform for intellectual engagement and collaboration among scholars and practitioners from different backgrounds. It also creates an opportunity for participants to examine contemporary developments in management, entrepreneurship, and rural finance, and to reflect on how research can be translated into practical interventions for development.

A distinctive feature of this conference is the doctoral colloquium, which is intended to support doctoral students and early-career researchers through constructive feedback, mentorship, and exposure to scholarly discourse. As a committee, we believe that strengthening doctoral research is essential to the future of academic excellence and knowledge production in our universities.

The papers presented and published in these proceedings cover important sub-themes, including agricultural finance and value chain financing, digital financial services, digital transformation and business innovation, emerging trends in business and management research, human resource management in the digital age, leadership and corporate governance, microfinance and rural credit systems, policy support for SMEs, sustainable supply chain management, technology-driven entrepreneurship, and women and youth entrepreneurship in rural economies. These areas reflect the multidisciplinary character of the conference and its relevance to contemporary development discourse.

Permit me to express our profound appreciation to the Vice-Chancellor and the Management of Ahmadu Bello University, Zaria, for their support and encouragement. We are also grateful to the Head of the Department of Business Administration for providing the leadership and institutional backing required to host this conference successfully.

I wish to specially appreciate our keynote speakers, lead paper presenters, discussants, session chairs, reviewers, editors, paper contributors, and all participants for their valuable contributions. I also acknowledge members of the Conference Organising Committee, who worked tirelessly in planning, coordinating, and implementing the various activities that made this conference possible.

It is our expectation that the discussions, papers, and recommendations arising from this conference will contribute to scholarship, policy formulation, institutional practice, and sustainable development. We also hope that the networks and collaborations established during this conference will continue beyond this event and lead to future research partnerships and practical interventions.

Once again, I welcome you all to ICMERF-DC 2026 and thank you for being part of this important academic journey. I wish all participants a fruitful, engaging, and rewarding conference experience.

Prof. O. D. Y. Malachy

Chairman, Conference Organising Committee

ICMERF-DC 2026

Department of Business Administration

Ahmadu Bello University, Zaria, Nigeria

PREFACE BY THE EDITORS

The Editorial Committee is pleased to present the Proceedings of the International Conference and Doctoral Colloquium on Management, Entrepreneurship, and Rural Finance (ICMERF-DC 2026), organised by the Department of Business Administration, Ahmadu Bello University, Zaria.

The conference, held under the theme “Innovations in Management, Entrepreneurship and Rural Finance for Sustainable Development in Emerging Economies,” provided an important platform for scholars, doctoral researchers, policymakers, practitioners, industry actors, and students to engage with contemporary issues affecting business, entrepreneurship, finance, rural development, and sustainable growth. The theme reflects the need for innovative ideas, rigorous research, and practical solutions that can strengthen institutions, empower enterprises, expand financial inclusion, and promote sustainable development.

These proceedings bring together selected papers presented at the conference. The contributions cover a wide range of thematic areas, including digital transformation and business innovation, emerging trends in business and management research, human resource management in the digital age, interdisciplinary approaches to rural development, leadership and corporate governance, microfinance and rural credit systems, policy and institutional support for SMEs, risk management, sustainable supply chain and operations management, technology-driven entrepreneurship, and women and youth entrepreneurship in rural economies.

The papers contained in this volume reflect the diversity, relevance, and intellectual richness of the conference. They offer conceptual, empirical, and policy-oriented insights into issues that are central to the development of Nigeria, Africa, and other emerging economies. They also demonstrate the growing importance of interdisciplinary scholarship in addressing complex social, economic, institutional, and managerial challenges.

As editors, our role has been to compile, organise, and present the accepted papers in a form that preserves the scholarly contributions of the authors while providing a coherent proceedings document for academic and professional use. The papers were arranged according to relevant conference themes to make the volume easier to navigate and to reflect the broad scope of the conference.

Conference proceedings serve an important academic purpose. They document the knowledge shared during the conference, preserve emerging research ideas, provide visibility for scholarly contributions, and create a foundation for further research, publication, policy engagement, and professional collaboration. It is our hope that this volume will be useful to academics, postgraduate students, policymakers, entrepreneurs, financial institutions, development practitioners, and all those interested in management, entrepreneurship, rural finance, and sustainable development.

We sincerely appreciate the Vice-Chancellor and Management of Ahmadu Bello University, Zaria, for their support. We also thank the Head of the Department of Business Administration, the Chairman

and members of the Conference Organising Committee, keynote speakers, lead paper presenters, session chairs, reviewers, authors, participants, and all individuals who contributed to the success of the conference and the production of these proceedings.

Special appreciation goes to all authors whose papers appear in this volume. Their scholarly contributions form the substance of these proceedings. We also appreciate the reviewers and editorial team for their time, commitment, and professional input in ensuring that the papers were organised and prepared for publication.

The Editorial Committee has made reasonable efforts to ensure consistency in presentation. However, the intellectual content, methodological choices, scholarly claims, views expressed, data, citations, interpretations, and conclusions remain the responsibility of the individual authors.

We commend these proceedings to readers and hope that they will stimulate further scholarly inquiry, policy dialogue, institutional innovation, and practical action towards sustainable development in emerging economies.

The Editors

Proceedings of the International Conference and Doctoral Colloquium on Management,
Entrepreneurship, and Rural Finance
Department of Business Administration
Ahmadu Bello University, Zaria, Nigeria

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DEPARTMENT OF BUSINESS ADMINISTRATION, AHMADU BELLO UNIVERSITY,
ZARIA

<https://icmerf.org.ng/>

ARTIFICIAL INTELLIGENCE AS A STRATEGIC DIGITAL RESOURCE: EXTENDING
THE DIGITAL RESOURCE VIEW (DRV) FRAMEWORK

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Abstract

The accelerating diffusion of artificial intelligence (AI) is reshaping how organizations create value and sustain competitive advantage, yet existing strategic management theories provide limited explanations of AI's distinctive resource characteristics. This paper advances the Digital Resource View (DRV) by theorizing artificial intelligence as a strategic digital resource rather than merely a technological tool. Building on the DRV's core logic, the study conceptualizes AI as a composite resource embedded in data assets, algorithms, digital infrastructure, and human expertise, whose strategic value depends on its digital configuration and orchestration. The paper extends the DRV framework by introducing AI-specific mechanisms digital value creation, digital rareness, uncertainty-driven imitation barriers, and normative digital pressure that explain why AI-enabled advantages are unevenly distributed across firms. Conceptually, the study demonstrates how AI differs from traditional resources by exhibiting scalability, recombining ability, learning effects, and rapid evolution, thereby challenging static interpretations of resource heterogeneity. The paper proposes an integrative DRV-AI framework that links AI resource capability to organizational performance through decision intelligence, process digitalization, and sustained competitive advantage. This repositioning of AI within the Digital Resource View contributes to strategic management and information systems literature and provides a robust theoretical foundation for future empirical research, particularly in emerging and digitally transforming economies.

Keywords: Artificial Intelligence; Digital Resource View; Strategic Digital Resources; Competitive Advantage; Digital Capabilities; Resource-Based Theory

Introduction

Artificial intelligence (AI) has rapidly diffused across virtually all sectors of the global economy, reshaping how organizations operate, compete, and create value. From manufacturing and finance to public administration and human resource management, AI-enabled systems increasingly support decision-making, automate processes, and drive innovation at scale (Perifanis & Kitsios, 2023; Secundo et al., 2025; Fu et al., 2025). Unlike earlier generations of information technologies, AI exhibits distinctive characteristics such as learning capability, scalability, recombining ability, and continuous evolution, enabling firms to reconfigure operations and business models in unprecedented ways (Rai et al., 2019; Sjödin et al., 2023). As a result, AI is no longer peripheral to organizational strategy but is becoming central to how competitive advantage is pursued in digitally transforming environments.

Despite this growing strategic relevance, much of the strategic management literature continues to rely on traditional theoretical frameworks most notably the Resource-Based View (RBV) to explain performance differences among firms. The RBV conceptualizes competitive advantage as stemming from resources that are valuable, rare, inimitable, and non-substitutable (Barney, 2001; Barney & Arikan, 2005). While influential, this framework was developed in an era dominated by relatively stable, tangible, and firm-bound resources. Scholars have increasingly questioned its adequacy in explaining value creation under conditions of rapid digital change, algorithmic learning, and platform-based competition (El Shafeey & Trott, 2014; Madhani, 2010; Helfat et al., 2023; Pulka & Tijjani, 2023; Truijens, 2008; Kaufman, 2015).

A key limitation of the RBV in the context of AI lies in its static assumptions about resource heterogeneity and imitation. Digital and AI-based resources are inherently dynamic, often co-created across organizational boundaries, and difficult to evaluate using traditional VRIN logic alone (Cuthbertson & Furseth, 2022; Amit & Han, 2017). AI systems evolve through data accumulation and learning, while their value frequently depends on integration with complementary digital and non-digital resources, such as platforms, analytics infrastructures, and human expertise (Ferreira et al., 2025; Papagiannidis et al., 2021). These characteristics challenge the RBV's focus on ownership and stock of resources, calling for a more digitally attuned theoretical lens.

While the Digital Resource View (DRV) has been recently articulated in emerging research, this study anchors its arguments in a broader body of established literature on digital strategy, socio-technical systems, and digital innovation. Foundational works on digital platforms, resource recombination, and digital infrastructures (Bharadwaj et al., 2013; Yoo et al., 2010; Nambisan et al., 2019; Amit & Han, 2017) are integrated to ensure that the DRV framework is theoretically grounded beyond a single stream of scholarship. References to recent DRV-related work are therefore used to extend, rather than solely define, the conceptual argument.

In response to these limitations, the Digital Resource View (DRV) has emerged as a reconceptualization of resources in the era of digital disruption. Building on but extending beyond RBV, the DRV emphasizes the configuration, orchestration, and contextual deployment of digital resources rather than their mere possession (Ferreira et al., 2025; Adamu, 2025a). The DRV explicitly recognizes the distinctive properties of digital resources such as scalability, recombability, and embeddedness and introduces mechanisms such as digital value creation, digital rareness, uncertainty-driven imitation, and normative digital pressure to explain heterogeneity in organizational outcomes under digitalization.

However, although the DRV's offers a promising foundation for understanding value creation in digital contexts, its application to artificial intelligence remains underdeveloped. Existing studies frequently position AI as a technological tool, an IT investment, or an operational enabler, rather than as a strategic digital resource embedded within broader resource configurations (Moderno et al., 2024; Tursunbayeva & Gal, 2024). This instrumental treatment underestimates AI's role in reshaping resource boundaries, redefining imitation barriers, and transforming the basis of sustained competitive advantage, particularly in environments characterized by uncertainty and institutional pressure (Marzi, 2022; Bennich, 2024).

Against this backdrop, the central objective of this study is to extend the Digital Resource View by theorizing artificial intelligence as a strategic digital resource. Specifically, the paper conceptualizes AI as a composite and configured resource comprising algorithms, data assets, digital infrastructure, and human capabilities, whose strategic value emerges through integration and continuous reconfiguration. Embedding AI's within the DRV's framework, the study explains how it contributes to competitive advantage through digital value creation, digital rareness, uncertainty-driven imitation barriers, and responsiveness to normative digital pressures (see also Adamu, 2025a, 2025b).

The paper makes several key contributions to the literature. First, it advances strategic management theory by extending the DRV to explicitly incorporate artificial intelligence, thereby addressing a critical theoretical gap between digital resource theory and AI scholarship. Second, it reframes AI from a technological artifact to a strategic digital resource, offering a more robust explanation of AI-driven performance heterogeneity. Third, it provides an integrative conceptual foundation to guide future empirical research on AI's, competitive advantage, and digital transformation, particularly in emerging and digitally transforming economies where institutional pressures and resource constraints shape AI adoption trajectories (Secundo et al., 2025; Day et al., 2025).

Theoretical Background

Resource-Based View and Its Limitations in the Digital Era

The Resource-Based View (RBV) emerged as a dominant framework in strategic management for explaining firm-level performance differences. At its core, RBV posits that organizations achieve sustained competitive advantage when they possess resources that are valuable, rare, inimitable, and non-substitutable (VRIN) (Barney, 2001; Barney & Arikan, 2005). These resources may be tangible or intangible and are assumed to be heterogeneously distributed across firms and imperfectly mobile. Over time, RBV has provided a powerful logic for understanding how internal resources rather than industry structure alone shape strategic outcomes (Barney et al., 2021).

A central assumption of RBV is the relative stability of resource heterogeneity and the predictability of imitation barriers. Competitive advantage is sustained because rivals face high costs or structural constraints in replicating valuable resources, often due to causal ambiguity, path dependence, or social complexity (Barney, 2001). This imitation logic presumes that resources can be clearly identified, bounded within firms, and assessed ex ante in terms of their strategic potential. As several scholars note, this framing reflects an industrial-era conception of resources, where value creation unfolds incrementally and resource configurations change slowly (Madhani, 2010; El Shafeey & Trott, 2014). However, the increasing dominance of digital and data-intensive technologies has exposed important limitations of RBV. Digital technologies undermine the assumption of static resource heterogeneity because they are often scalable, replicable at near-zero marginal cost, and rapidly diffused across organizational boundaries (Cuthbertson & Furseth, 2022). In digitally enabled contexts, firms may access similar technologies, platforms, or data infrastructures, yet experience vastly different

performance outcomes, suggesting that ownership alone is insufficient to explain advantage (Amit & Han, 2017; Helfat et al., 2023).

These limitations are particularly evident in the case of artificial intelligence and other learning technologies. AI systems evolve through continuous data input, algorithmic refinement, and interaction with users, making their value highly dynamic and context-dependent (Papagiannidis et al., 2021; Perifanis & Kitsios, 2023; Pulka & Tijjani, 2023; Truijens, 2008; Kaufman, 2015). Moreover, AI resources are rarely stand-alone; their strategic relevance depends on integration with complementary assets such as digital infrastructure, organizational processes, and human expertise (Ferreira et al., 2025). Such characteristics challenge RBV's emphasis on resource stocks and highlight the need for a framework that accounts for digital scalability, recombability, and embeddedness.

Digital Resource View (DRV)

In response to the conceptual shortcomings of RBV under conditions of digital disruption, the Digital Resource View (DRV) has been advanced as a reconceptualization of resources in the digital era. The DRV builds on RBV's foundational insight that internal resources matter but shifts analytical attention from resource ownership to resource configuration, orchestration, and contextual deployment (Adamu, 2025a; Adamu, 2025b). Rather than treating digital technologies as generic inputs, the DRV conceptualizes them as strategically configured resources whose value emerges through interaction with organizational, institutional, and technological environments.

A defining feature of the DRV is its emphasis on distinct digital resource mechanisms that extend beyond traditional VRIN logic. Adamu (2025a) introduces digital value creation, digital rareness, uncertainty-driven imitation, and normative digital pressure as core explanatory mechanisms under DRV. These mechanisms recognize that in digital contexts, advantage may arise not from exclusivity of access but from superior configuration, timing, and adaptation under uncertainty. This perspective aligns with broader calls to renew resource-based theory to accommodate new contexts, concepts, and methods associated with digital transformation (Helfat et al., 2023; Iliyas & Barca, 2025).

The DRV further distinguishes itself from RBV by explicitly recognizing the intrinsic properties of digital resources. Digital resources are scalable, allowing firms to expand outputs without proportional increases in cost; recombable, enabling novel value creation through new configurations; and embedded, as they are deeply intertwined with organizational routines, platforms, and ecosystems

(Isaksson & Wennberg, 2016; Jiang, 2024). These properties mean that competitive advantage is increasingly shaped by how digital resources are orchestrated over time rather than by their mere possession.

Importantly, the DRV is particularly relevant for digitally transforming and emerging economies, where institutional pressures, regulatory environments, and resource constraints strongly influence digital adoption trajectories. Normative digital pressure arising from regulators, industry standards, competitors, and societal expectations plays a central role in shaping how firms deploy and legitimize digital resources (Bennich, 2024; Schrödter & Weißenberger, 2024). By incorporating such contextual forces, the DRV provides a more comprehensive framework for understanding digital value creation across heterogeneous organizational and national settings, thereby offering a robust foundation for theorizing artificial intelligence as a strategic digital resource.

Artificial Intelligence as a Strategic Digital Resource under the Digital Resource View

Artificial intelligence has become one of the most consequential technologies shaping contemporary organizational strategy, yet its theoretical positioning remains fragmented. Much of the extant literature conceptualizes AI either as a technological artifact, an information system, or an enabler of operational efficiency (Perifanis & Kitsios, 2023; Tursunbayeva & Gal, 2024). While these perspectives acknowledge AI's functional contributions, they understate its strategic significance by isolating AI from the broader resource configurations within which it operates. From a Digital Resource View (DRV) perspective, AI should instead be understood as a strategically configured digital resource whose value emerges through integration with data, infrastructure, human capabilities, and institutional contexts (Adamu, 2025a; Adamu, 2025b).

Within the DRV's framework, AI's is not a single resource but a composite digital resource comprising algorithms, data assets, computing infrastructure, and specialized human expertise. Prior studies emphasize that AI capabilities depend critically on the availability and quality of data, the scalability of digital infrastructure, and the tacit knowledge embedded in data scientists, domain experts, and users (Papagiannidis et al., 2021; Sandeep et al., 2025). This composite nature aligns with the DRV's emphasis on resource configuration rather than isolated resource possession, highlighting that AI's strategic relevance lies in how these elements are orchestrated within organizational processes.

A key contribution of the DRV is its reconceptualization of value creation in digital contexts, which is particularly salient for AI. AI-enabled systems enhance digital value by improving decision accuracy, enabling predictive analytics, automating complex processes, and supporting innovation across products and services (Fu et al., 2025; Secundo et al., 2025). Unlike traditional technologies, AI generates increasing returns through learning effects, whereby performance improves as systems are exposed to larger and more diverse datasets. From a DRV standpoint, such digital value creation is not inherent to AI itself but arises from the firm's ability to embed AI into decision-making routines and operational workflows (Amit & Han, 2017; Sjödin et al., 2023).

The DRV further explains why AI-driven advantages are unevenly distributed across firms despite widespread access to similar technologies. Digital rareness in AI does not stem solely from exclusivity of algorithms, which are often replicable, but from unique configurations of proprietary data, domain-specific model training, and organizational learning processes (Ferreira et al., 2025; Tan et al., 2024). Firms that combine AI with context-specific knowledge and complementary digital resources are better positioned to generate outcomes that competitors find difficult to replicate, even when using comparable AI tools.

Uncertainty-driven imitation represents another critical mechanism through which AI functions as a strategic digital resource under the DRV. AI systems operate in environments characterized by data volatility, algorithmic opacity, and rapid technological change, making it difficult for rivals to discern the precise sources of advantage (Marzi, 2022; Matsunaga, 2024). The continuous evolution of AI models, combined with tacit human-AI interactions, creates causal ambiguity and dynamic imitation barriers that extend beyond those traditionally emphasized in RBV (Haapio, 2022; Wang & Wang, 2024). As a result, competitive advantage increasingly depends on firms' abilities to manage uncertainty rather than merely protect static resources.

Finally, the strategic deployment of AI is shaped by normative digital pressure, a central construct within the DRV. Organizations face growing institutional expectations from regulators, professional bodies, competitors, and society to adopt AI responsibly, ethically, and in compliance with emerging digital standards (Bennich, 2024; Schrödter & Weißenberger, 2024). These pressures influence not only whether firms adopt AI but also how AI resources are configured, governed, and legitimized. From a DRV perspective, firms that align AI deployment with institutional norms while maintaining

strategic flexibility are more likely to sustain digital value creation, particularly in digitally transforming and emerging economies (Adamu, 2025a; Trier et al., 2023).

Conceptual Framework and Propositions: A DRV–AI Model of Competitive Advantage

Drawing on the Digital Resource View (DRV), this study develops a conceptual framework that positions artificial intelligence as a strategic digital resource whose contribution to competitive advantage depends on its configuration, orchestration, and contextual deployment. Consistent with Adamu (2025a; 2025b), the framework moves beyond a technology-centric interpretation of AI and instead emphasizes the mechanisms through which AI generates heterogeneous outcomes across firms. The proposed DRV-AI framework links AI resource capability to organizational performance through four core DRV mechanisms: digital value creation, digital rareness, uncertainty-driven imitation barriers, and normative digital pressure.

At the foundation of the framework is AI resource capability, conceptualized as the firm's ability to deploy and integrate AI algorithms, data assets, digital infrastructure, and human expertise into organizational routines. Prior studies highlight that AI capability is not defined by access to AI tools alone but by the firm's capacity to structure, combine, and continuously reconfigure AI-related resources (Papagiannidis et al., 2021; Perifanis & Kitsios, 2023; Sandeep et al., 2025). From a DRV perspective, AI resource capability represents the primary input that enables subsequent digital resource mechanisms to emerge.

The first mechanism through which AI resource capability influences competitive outcomes is digital value creation. AI enhances digital value by improving decision intelligence, enabling predictive analytics, automating processes, and supporting innovation in products, services, and business models (Fu et al., 2025; Secundo et al., 2025). However, consistent with DRV logic, such value does not arise automatically from AI adoption. Instead, digital value creation depends on the firm's ability to embed AI into workflows, align it with strategic objectives, and integrate it with complementary resources (Amit & Han, 2017; Sjödin et al., 2023). Accordingly, AI resource capability is expected to positively influence digital value creation.

Proposition 1

AI resource capability positively influences digital value creation.

Beyond value creation, the DRV emphasizes digital rareness as a mechanism explaining why firms using similar digital technologies experience divergent outcomes. In the context of AI's, rareness does

not primarily stem from exclusive ownership of algorithms, which are often widely accessible, but from unique configurations of proprietary data, domain-specific model training, and organizational learning processes (Ferreira et al., 2025; Tan et al., 2024). Firms that combine AI with context-specific knowledge and complementary digital assets are more likely to develop AI configurations that competitors find difficult to replicate. Thus, AI's resource capability is expected to enhance digital rareness.

Proposition 2

AI resource capability positively influences digital rareness.

The DRV further introduces uncertainty-driven imitation as a distinctive mechanism in digital environments. AI systems operate under conditions of algorithmic opacity, data volatility, and rapid technological change, which obscure causal relationships between resources and outcomes (Marzi, 2022; Matsunaga, 2024). As AI models continuously evolve through learning and interaction with users, rivals face significant challenges in identifying and imitating the precise configurations that generate advantage. This uncertainty strengthens imitation barriers beyond those traditionally emphasized in RBV (Haapio, 2022; Wang & Wang, 2024). Consequently, firms with stronger AI's resource capability are better positioned to benefit from uncertainty-driven imitation barriers.

Proposition 3

AI resource capability positively influences uncertainty-driven imitation barriers.

Together, digital value creation, digital rareness, and uncertainty-driven imitation barriers form the core transmission mechanisms linking AI's resource capability to competitive advantage. Consistent with DRV logic, competitive advantage is conceptualized as a relative and dynamic outcome arising from superior digital resource configuration rather than static resource ownership (Adamu, 2025a; Helfat et al., 2023). Firms that generate higher digital value from AI, develop rare AI configurations, and benefit from strong imitation barriers are more likely to achieve sustained performance advantages.

Proposition 4

Digital value creation positively influences competitive advantage.

Proposition 5

Digital rareness positively influences competitive advantage.

Proposition 6

Uncertainty-driven imitation barriers positively influence competitive advantage.

Finally, the framework incorporates normative digital pressure as a contextual force shaping AI deployment under the DRV's. Normative digital pressure arises from institutional expectations, regulatory frameworks, professional standards, and competitive norms that compel organizations to adopt and legitimize digital technologies (Bennich, 2024; Schrödter & Weißenberger, 2024). Such pressures influence not only whether firms adopt AI but also how AI resources are configured and governed. While normative pressure may accelerate AI adoption, its effect on value creation depends on firms' ability to align compliance and legitimacy with strategic flexibility (Maity et al., 2019; Trier et al., 2023). Accordingly, normative digital pressure is expected to moderate the relationship between AI resource capability and digital value creation.

Proposition 7

Normative digital pressure positively moderates the relationship between AI resource capability and digital value creation, such that the relationship is stronger under higher levels of normative digital pressure.

Taken together, the proposed DRV-AI conceptual framework provides a coherent explanation of how artificial intelligence functions as a strategic digital resource. By explicitly linking AI resource capability to competitive advantage through DRV mechanisms, the framework advances theoretical understanding of AI-driven value creation and offers a structured foundation for future empirical testing, particularly in digitally transforming and emerging economies.

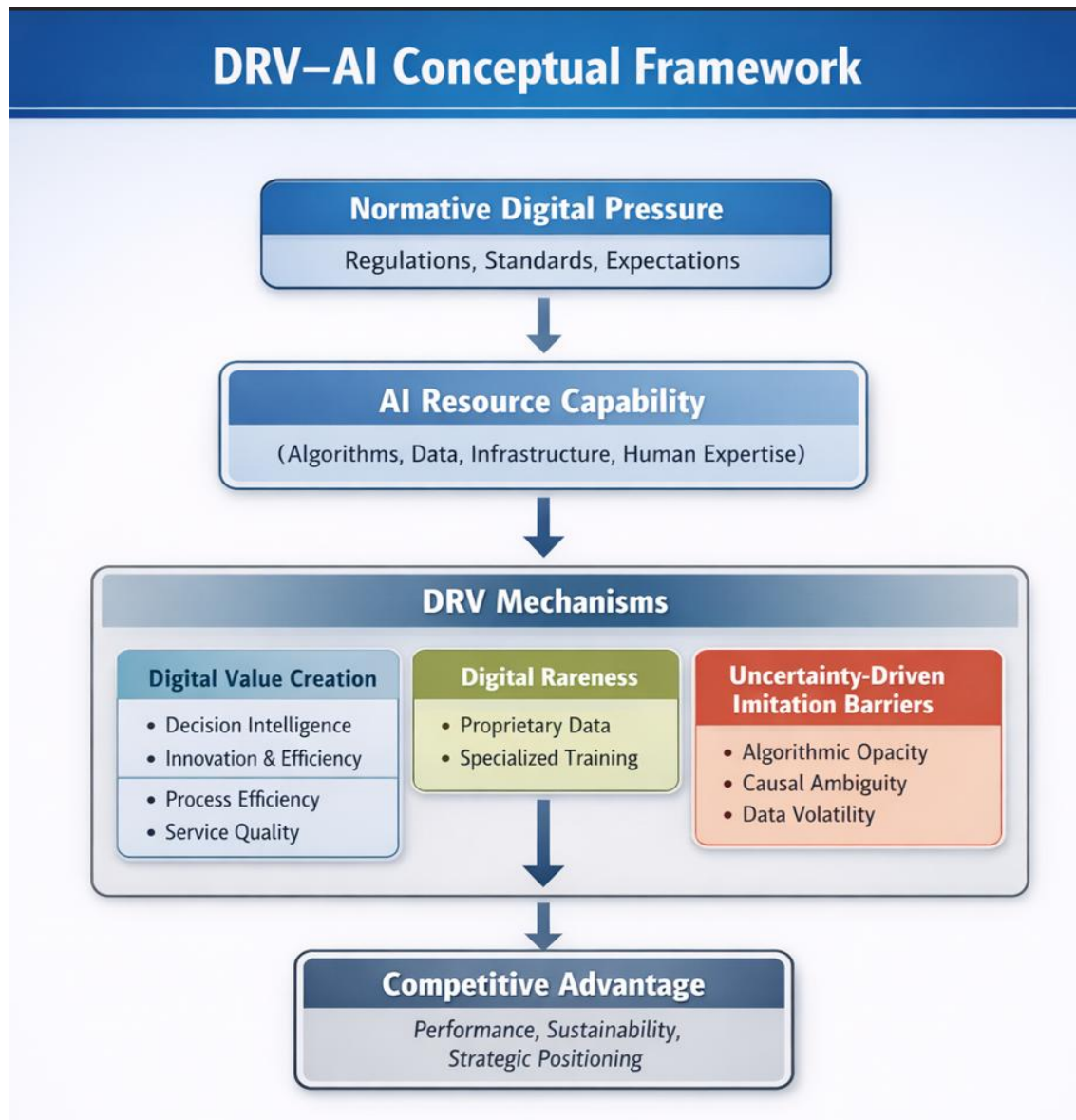


Figure 1 Proposed conceptual framework

The proposed DRV-AI conceptual framework illustrates the relationships between AI resource capability and competitive advantage through three mediating mechanisms digital value creation, digital rareness, and uncertainty-driven imitation barriers and a moderating mechanism, normative digital pressure. AI resource capability is positioned as the foundational construct, reflecting the firm's ability to integrate algorithms, data, infrastructure, and human expertise. These capabilities influence competitive advantage indirectly through the identified DRV mechanisms, while normative digital pressure conditions the strength of the relationship between AI capability and value creation. The

framework reflects the DRV's core logic that competitive advantage emerges from resource configuration, interaction, and contextual alignment rather than from resource possession alone.

Theoretical Justification of Linkages

The linkage between AI Resource Capability and Digital Value Creation is grounded in the Digital Resource View's core assertion that digital resources generate value through configuration and orchestration rather than mere possession (Adamu, 2025a; 2025b; Ferreira et al., 2025). AI resource capability reflects a firm's ability to integrate algorithms, data, infrastructure, and human expertise into organizational routines. Prior studies show that AI enhances value by improving decision accuracy, automating processes, and enabling innovation; however, these outcomes materialize only when AI's is embedded within strategic workflows and aligned with organizational objectives (Amit & Han, 2017; Fu et al., 2025; Secundo et al., 2025). From a DRV's perspective, AI resource capability therefore acts as a necessary antecedent to digital value creation, translating digital potential into realized organizational benefits.

The relationship between AI Resource Capability and Digital Rareness is justified by the DRV's reconceptualization of rareness in digital contexts. Unlike traditional RBV assumptions, where rareness is tied to exclusive ownership, digital rareness emerges from unique configurations of resources that are difficult to standardize or replicate (Adamu, 2025a). In the case of AI, rareness stems from proprietary datasets, domain-specific model training, and accumulated organizational learning rather than from algorithms alone (Ferreira et al., 2025; Tan et al., 2024). Firms with stronger AI resource capability are better positioned to develop such idiosyncratic configurations, leading to differentiated outcomes even in environments where AI technologies are widely accessible.

The linkage between AI Resource Capability and Uncertainty-Driven Imitation Barriers is theoretically anchored in the DRV's emphasis on uncertainty as a source of sustained advantage. AI systems are characterized by algorithmic opacity, data volatility, and continuous learning, which obscure causal relationships between inputs and outputs (Marzi, 2022; Matsunaga, 2024). These features intensify causal ambiguity and complicate imitation efforts by competitors, extending beyond the static imitation barriers emphasized in RBV (Haapio, 2022; Leahey, et al., 2023; Wang & Wang, 2024). As firms strengthen their AI resource capability, they increase the complexity and dynamism of their AI configurations, thereby reinforcing uncertainty-driven imitation barriers.

The links between Digital Value Creation, Digital Rareness, Uncertainty-Driven Imitation Barriers, and Competitive Advantage follow directly from DRV logic. Digital value creation enhances performance by improving efficiency, innovation, and strategic responsiveness, while digital rareness and uncertainty-driven imitation barriers protect these gains from rapid erosion by competitors (Adamu, 2025a; Helfat et al., 2023; Diefenbach, & Ullrich, 2018). Competitive advantage under DRV is therefore not static but dynamic, sustained through continuous reconfiguration of digital resources in response to technological and environmental change. These mechanisms jointly explain why AI-enabled firms exhibit heterogeneous performance outcomes despite operating under similar technological conditions.

Finally, Normative Digital Pressure is theorized to moderate the relationship between AI Resource Capability and Digital Value Creation. Institutional pressures arising from regulations, industry standards, professional norms, and societal expectations increasingly shape how organizations adopt and deploy AI (Bennich, 2024; Schrödter & Weißenberger, 2024). Under higher normative pressure, firms are compelled to formalize AI governance, enhance transparency, and align AI deployment with accepted norms, which can strengthen the translation of AI's capability into digital value (Maity et al., 2019; Trier et al., 2023). Within the DRV, normative digital pressure thus acts as a contextual force that conditions the effectiveness of digital resource deployment rather than merely constraining it.

Methodological Approach

This study adopts a conceptual research design, consistent with theory-extension objectives in strategic management and information systems research. Conceptual designs are appropriate where the goal is to refine, extend, or reconceptualize existing theories rather than to test relationships empirically (Helfat et al., 2023). Accordingly, the paper synthesizes insights from the Resource-Based View, the Digital Resource View, and contemporary AI's literature to develop an integrative DRV–AI framework.

Theoretical Development Approach

The conceptual development follows a theory-building and theory-extension approach. First, foundational assumptions of RBV are reviewed to identify conceptual gaps in explaining digital and AI-driven value creation (Barney, 2001; El Shafeey & Trott, 2014). Second, the DRV's core logic is adopted as the primary theoretical lens, drawing explicitly on Adamu (2025a; 2025b) to reconceptualize resources under digital disruption. Third, AI is theorized as a strategic digital resource

by integrating evidence from AI capability, digital strategy, and innovation studies (Papagiannidis et al., 2021; Perifanis & Kitsios, 2023; Secundo et al., 2025).

Conceptual Framework Development

The DRV-AI conceptual framework was developed through a structured process of iterative abstraction and theoretical synthesis. First, key constructs were identified from three primary literature streams: (i) Resource-Based View and its extensions, (ii) Digital Resource View scholarship, and (iii) artificial intelligence and digital capability research. Second, these constructs were compared across studies to identify conceptual overlaps, divergences, and gaps, particularly in explaining digital value creation and competitive advantage.

Third, abstraction was applied to generalize recurring patterns into higher-order constructs, including digital value creation, digital rareness, uncertainty-driven imitation barriers, and normative digital pressure. These constructs were then systematically linked to AI resource capability based on theoretical logic and prior empirical insights. Fourth, an iterative refinement process was conducted, whereby proposed relationships were evaluated for internal consistency, theoretical plausibility, and alignment with DRV principles. This process ensured that the resulting framework is not only conceptually coherent but also analytically grounded and suitable for future empirical testing.

Analytical Rigor and Validity

To enhance conceptual rigor, the framework satisfies key criteria for strong theory building:

- Clarity in construct definitions and boundaries
- Logical consistency in causal linkages
- Theoretical grounding in established and emerging literature
- Generativity, offering testable propositions for future empirical research

These criteria align with best practices in strategic management theory development (Barney et al., 2021; Helfat et al., 2023).

Discussion and Implications

Discussion of Findings and Theoretical Insights

This study advances the strategic management and information systems literature by repositioning artificial intelligence as a strategic digital resource within the Digital Resource View (DRV). The central argument emerging from the conceptual framework is that AI does not generate competitive advantage simply through adoption or technological sophistication, but through its strategic

configuration and orchestration as a digital resource embedded within organizational routines, data infrastructures, and institutional contexts. This insight addresses a critical gap in existing literature that often treats AI as an operational tool or an isolated technological capability rather than as a resource with strategic, systemic, and dynamic properties.

The framework further demonstrates that AI-driven competitive advantage is indirect and mediated, operating through distinct DRV mechanisms digital value creation, digital rareness, and uncertainty-driven imitation barriers. These findings challenge deterministic narratives in AI research that imply a direct and uniform relationship between AI adoption and performance outcomes. Instead, consistent with Adamu's (2025a; 2025b) DRV logic, the study shows that heterogeneity in firm performance arises from differences in how AI resources are configured, combined with complementary assets, and continuously reconfigured over time.

A particularly important theoretical insight concerns the reconceptualization of rareness and imitation barriers in the digital era. Unlike the RBV, where rareness is linked to exclusive ownership and imitation barriers are largely structural, the DRV-AI framework highlights uncertainty-driven imitation as a dynamic and evolving source of advantage. Algorithmic opacity, data volatility, and continuous learning processes create causal ambiguity that competitors struggle to decipher, thereby sustaining advantage even in environments characterized by widespread access to AI technologies. This reframing extends resource-based theory by shifting attention from static protection of resources to active management of uncertainty.

Finally, the inclusion of normative digital pressure as a moderating force enriches the framework by embedding AI strategy within its broader institutional environment. The discussion reveals that institutional expectations, regulatory frameworks, and professional norms do not merely constrain AI adoption but actively shape how AI resources are deployed, governed, and legitimized. This insight is particularly salient in digitally transforming and emerging economies, where institutional pressures play a decisive role in shaping digital resource trajectories.

Theoretical Implications

The study makes several important theoretical contributions. First, it extends the Digital Resource View by explicitly incorporating artificial intelligence into its conceptual architecture, thereby strengthening DRV's relevance in contemporary digital strategy debates. While prior DRV scholarship

has emphasized digital resources broadly, this paper provides a focused and systematic theorization of AI as a distinct class of strategic digital resource.

Second, the paper contributes to the ongoing renewal of resource-based theory by demonstrating why RBV's traditional assumptions are insufficient for explaining AI-driven value creation. By foregrounding scalability, recombining ability, embeddedness, and uncertainty-driven imitation, the DRV-AI framework offers a more dynamic and context-sensitive explanation of competitive advantage in the digital era.

Third, the study bridges AI research and strategic management theory by providing a unifying framework that integrates insights from digital innovation, AI capability, and institutional theory. In doing so, it responds to recent calls for theory development that can accommodate new technologies, new organizational forms, and new sources of value creation in digitally enabled environments.

Conclusion

This paper set out to reconceptualize artificial intelligence as a strategic digital resource by extending the Digital Resource View (DRV). In response to the growing inadequacy of traditional resource-based explanations in digitally intensive environments, the study advanced a DRV-AI framework that explains how AI contributes to competitive advantage through configuration, orchestration, and contextual deployment rather than through technology adoption alone. By positioning AI within the DRV, the paper moves beyond instrumental and deterministic views of AI and offers a theoretically grounded explanation of heterogeneous AI outcomes across firms.

The central contribution of the study lies in identifying digital value creation, digital rareness, uncertainty-driven imitation barriers, and normative digital pressure as the core mechanisms through which AI resource capability is transformed into competitive advantage. These mechanisms highlight the dynamic and systemic nature of AI-enabled advantage and underscore the importance of managing uncertainty, institutional pressures, and complementary resources in the digital era. In doing so, the paper contributes to ongoing efforts to renew resource-based theory for contexts characterized by digital disruption and continuous technological change.

By extending the DRV framework to explicitly incorporate artificial intelligence, this study provides a robust theoretical foundation for future empirical research in strategic management, information systems, and digital innovation. The proposed framework offers a structured basis for testing AI-driven value creation across organizational and national contexts, particularly in digitally

transforming and emerging economies. Ultimately, the study underscores that sustained advantage in the age of artificial intelligence depends not on access to AI technologies, but on firms' capabilities to strategically configure, govern, and continuously reconfigure AI as a digital resource.

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CO-PRODUCTION AND INNOVATION IN PRIVATE HOSPITALS IN ZARIA
METROPOLIS: A STUDY OF AL-MADINA HOSPITAL

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Abstract

Previous studies on co-production and innovation have largely focused on countries such as Norway, Indonesia, Brazil, and the United Kingdom. However, few studies have examined co-production and innovation in private hospitals in Nigeria. Therefore, this study uses Zaria Metropolis as the unit of analysis. A qualitative research approach was adopted. Interviews were conducted with ten informants, including medical doctors, patients, nurses, and laboratory technologists. Purposive sampling was used, and data were collected through in-depth interviews and analyzed thematically using NVivo version 15. The findings reveal that Al-madina Hospital in Zaria Metropolis plays a vital role in co-production with patients. The hospital provides suggestion boxes that allow patients to submit complaints and ideas, thereby facilitating service innovation. Patients also contribute ideas regarding long waiting times, delays in laboratory tests, and inadequate consulting rooms. Patients suggested the creation of additional consulting rooms, the use of social media platforms such as WhatsApp and Facebook, and entertainment during antenatal care to improve patient comfort. The hospital also organizes counseling sessions with HIV and cancer patient associations and invites survivors to share their experiences. These practices provide hope and encouragement for new patients. The study recommends improving collaboration between patients and hospitals in order to enhance innovation in healthcare services.

Keywords: Co-production, Innovation, Value Co-creation, Customer Engagement, Collaboration

Introduction

Globally, innovation has become a central driver of organizational competitiveness and sustainability. In service industries, particularly healthcare, innovation increasingly depends on collaborative processes involving service providers and users. Co-production enables customers to actively participate in service design, delivery, and improvement (Prahalad & Ramaswamy, 2000; Vargo & Lusch, 2006).

Innovation has become increasingly important for the success of businesses and organizations across the globe. South Korea remains one of the most innovative global competitors in 2024, outperforming the European Union by 35.2 percentage points. Other competitors such as Canada, China, the United States, and Australia also lead the EU in innovation performance. China has overtaken both the EU and the United States and has moved into equal second place globally. The European innovation landscape is shaped by several interconnected challenges, including geopolitical volatility and global competition for critical technologies and supply chains (European Commission, 2024). United Kingdom achieved development on the basis of invention, while leading firms in Germany and the United States at a later time captured market share from England on the basis of innovation (Amsden, 1992). Co-production is a process in which the user, the service provider and the decision maker interact in the innovative process; most of the successful companies globally use innovation that is bringing out new ways of doing things through co-production.

In Africa, the private healthcare sector is characterized by the emergence of multi-country hospital groups and specialized centers of excellence that integrate advanced robotics, digital health technologies, and sustainable architecture. One of the leading healthcare providers in Africa is Evercare Group, which operates integrated healthcare platforms across emerging markets, including Nigeria and Kenya. Its flagship facility, Evercare Hospital Lekki in Lagos, is a 165-bed multispecialty hospital providing tertiary healthcare services that meet global standards (Reid et al., 2024).

Also, Mediclinic Southern Africa is a major operator in South Africa and Namibia. In 2024, they continue to innovate with “Hospital at Home” remote monitoring and precision medicine using genetic analysis. There is also Lenmed Group which manages nineteen (19) hospitals across South Africa, Namibia, Botswana, and Mozambique (Reid, et al., 2024).

In Nigeria, the private healthcare sector is experiencing rapid growth, with many hospitals adopting advanced technologies in order to reduce medical tourism and provide specialized services locally. For example, Kelina Hospital is known for surgical innovations such as robotic-assisted radical prostatectomy (RARP) and holmium laser enucleation of the prostate (HoLEP). And other minimal-access surgeries. There is R-Jolad Hospital; it is recognized for merging medical innovation with affordability and a strong patient-centered model.

Despite these developments, there remains limited research on how co-production contributes to innovation in Nigerian private hospitals. This study therefore investigates the role of co-production in driving innovation in private hospitals in Zaria Metropolis, Kaduna State.

There are several private hospitals in Kaduna State that are noted for their use of modern facilities, specialist services, and commitment to high-quality healthcare. The hospitals in Kaduna state are also into innovative practices such as feedback from client in order to improve their services.

Innovation refers to the introduction of new or improved products, services, or processes that create value (OECD, 2018). In healthcare, innovation may include process redesign, digital health solutions, patient-centered care models, and new service delivery mechanisms.

Theoretical and empirical studies on co-production and innovation have largely been conducted in countries such as the United Kingdom, Norway, Indonesia, and Brazil (Chathoth et al., 2013; Ruwan, 2015). In Nigeria, research has focused more broadly on customer engagement and marketing performance (Abubakar et al., 2023; Anukwe et al., 2024), with limited attention to private hospitals. Zaria Metropolis, located in Kaduna State, hosts major higher institutions, including Ahmadu Bello University, which provide skilled manpower to healthcare institutions. Despite this, little empirical research has examined how co-production drives innovation in private hospitals within this context. This study addresses this gap.

1.2 Statement of Problem

Several studies have examined co-production and innovation in different contexts. For example, Abubakar, Abubakar, and Nura (2023) examined the relationship between customer competency, value, susceptibility to control, communication, and co-production in MTN Zaria Local Government Area of Kaduna State. Similarly, Anukwe, Anzor, and Chukwuka (2024) investigated the impact of social media marketing and customer engagement in South-East Nigeria.

Santoso and Agustini (2024) analyzed customer engagement levels by examining behavioral, emotional, and cognitive dimensions in Indonesia. In addition, Wellington, Italo, and Marcelo (2024) studied value co-creation as a service element in the healthcare sector. Amoodza-Mahdiraji et al. (2024) examined the influence of sustainable value co-creation on social entrepreneurship in the United Kingdom.

Kopanitsa (2016) conducted research on service co-production with customers in the framework on service dominant logic in application of the hotel industry in Tromso Northern Norway. A gap exists

in the literature because most studies were conducted in developed countries such as the United Kingdom, Norway, Indonesia, Brazil etc., similar study needs to be replicated in a country like Nigeria, thus, the study focuses on co-production and Innovation using private hospitals in Zaria metropolis in order to cover the gap.

Although these studies contribute significantly to the literature, most were conducted in developed countries such as the United Kingdom, Norway, Indonesia, and Brazil. Consequently, a contextual gap exists in the literature, as few studies have examined co-production and innovation in private hospitals in Nigeria. This study therefore seeks to address this gap by examining co-production and innovation in private hospitals in Zaria Metropolis.

Existing literature demonstrates that co-production enhances service quality, efficiency, and innovation (Humphreys & Grayson, 2008; Vargo & Lusch, 2008). However, most studies were conducted outside Nigeria. Empirical evidence on co-production in Nigerian private hospitals remains scarce.

Private hospitals in Nigeria face challenges such as long waiting times, delays in laboratory results, limited infrastructure, and weak communication systems (Imam et al., 2024). While patient participation could address these challenges, the extent to which co-production drives innovation in private hospitals in Zaria remains underexplored.

Research questions

To what extent does co-production drive innovation among private hospital in Zaria Local Government?

Research objective

To explore the role of co-production as a driver of innovation among private hospital in Zaria Local Government

Research assumption

The study assumed that co-production is a driver of innovation among private hospital in Zaria Local Government.

Concept of Innovation

Innovation is the process of introducing new skills, improved ideas, products, services, or processes that create value. Innovation is essential for driving growth, competitiveness, and sustainability in

today's fast paced business environment. Existing literature on innovation has explored various contexts and countries, such as England, United State, Norway and many other developed and some developing nations (Davydova, & Artomova, 2024).

In the context of private hospitals operations in Zaria metropolis, Kaduna state, several challenges hinder the successful implementation of innovation that can bring better operations and services to private hospitals customers. One of the significant issues is pertain to the customer skills. In Zaria metropolis customers have skills that can boost innovation in private hospital due to location of many higher educations but most of the private hospitals are not valuing the skills of their customer which is affecting innovation (Imam, Shalin, Kanakavalli, Shylaja, Namitha, & Deeksha, 2024).

Although private hospitals provide multiple services to engage with customers and enhance their services, there is a still inadequacy in promptly addressing customers' demands. Low customer engagement from the private hospitals and their customers or clients contributes to lack of innovation in private hospitals (Peutari Powering Health, 2024).

Another obstacle to innovation lies in the customer value co-creation among private hospital in Zaria value co-creation of services with customers. Many patients visit private hospitals only when they have serious health challenges to get treatment without actively contributing their ideas, on how they wanted to be served, which hinder innovation in comparison to foreign reputable and successful hospitals (Janet, Stephen, Tracey, Jillian & Yasmin, 2012).

Additionally, some companies, including Private hospitals in Nigeria, view customer collaboration as intrusive and against their company culture. The hospital fear that it may lead to sharing of ideas, limiting competitive advantage, as a result it affects innovation private hospitals in Zaria metropolis (Luu Trong Tuan, 2012).

Innovation is understood as 'new creations of economic significance, primarily carried out by firms (but not in isolation)'. "The term 'innovation' can signify both an activity and the outcome of the activity. An innovation is a new or improved product or process (or combination thereof) that differs significantly from the unit's previous products or processes and that has been made available to potential users (product) or brought into use by the unit (process)." OECD/Eurostat (2018).

Concept of co-production

The concept of co-production was initially studied in the context of industrial and service markets; co-production was originally discussed in terms of economic efficiency gained from collaborating

with a customer in a business-to-business context resulting in competitive advantage. In the 1990s scholars began to discuss the use of the co-production concept in consumer markets Prahalad and Ramaswamy (2000). In consumer markets, the emergence of customizing consumer was witnessed with reference to those who take an active role in the production process Prahalad and Ramaswamy (2000; 2002; 2004) and, Vargo and Lusch (2006) on value co-creation and service dominant logic of marketing as a new school of thought has driven the idea of co-production. Until recently the dominant thinking was that customer value creation accompanies the product (Goods Dominant logic, G-D). However, Vargo and Lusch (2006) proposed the Service Dominant (S-D) Logic in which service provision rather than goods is the basis of economic exchange. These authors argue that value does not exist solely in the finished good but value is defined and created in co-production with the consumer as well. They propose that goods are part of distribution in the service provision and the customer is always a co-producer. Moreover, their S-D logic identifies how customer collaboration affects the co-production and how it brings about benefits such as lower costs, customized service offerings and increased productivity. Marketing theory encourages service providers and customers to interact and customers to participate in the service production process (Vargo & Lusch, 2006).

Co-production is a situation where there is collaboration between the business manager and customers Park as cited in (James, 2018). Chathoth et al. (2013) defined co-production as a way that focuses on the firm's value construction events with customers playing a reflexive role. Early theorization of co-production distinguished two types of co-productions: collective production and company/consumer production (Humphreys & Grayson, 2008). Collective production describes contexts in which consumers collaborate with other consumers to produce things of value to the consumer community (Humphreys & Grayson, 2008). Company/consumer production implicates the process of collaboration of consumers and companies to produce things of value, in this way; it is collaboration between an organization and its consumers (Ruwan, 2015). Chathoth et al. (2013) make the comparison between two notions of collaboration: co-production and co-creation and outlined several key factors that differentiated these two approaches (Chathoth et al., 2013). It is worthwhile to state that in much of the literature the two are seen as interrelated phenomenon and less of distinctive processes (Chathoth et al., 2013). In co-production, the customers' participation is limited to the development of a product implemented by a firm, thus, the key actors are a firm's managers and employees (Chathoth et al., 2013). Thus, co-production is viewed predominantly as firm-centric

where the service process is linked mainly to a firm's own resources and competencies. For co-production and customer-driven customization service production, the process of value creation is derived primarily through the production process rather than the consumption process (Ruwan, 2015).

Theoretical Frame work of Analysis

Service- Dominant Logic (SDL)

Service-Dominant Logic (SDL) is a contemporary marketing and service management theory that conceptualizes, value co-creation as a collaborative process between organizations and customers. Unlike the traditional goods-dominant logic, which views value as embedded in products and delivered to passive consumers, SDL posits that value is co-created through interactions among multiple actors. This perspective is particularly relevant to service-intensive sectors such as healthcare, where value emerges during service delivery rather than at the point of exchange.

Service-Dominant Logic was introduced by Vargo and Lusch (2004) in their seminal article published in the *Journal of Marketing*. The authors argued that service is defined as the application of competences such as knowledge and skills for the benefit of another are the fundamental basis, of exchange. According to SDL, customers are not merely recipients of value but operant resources who actively participate in value creation by integrating their own resources with those provided by the service organization. The theory was further refined by Vargo and Lusch (2008), who emphasized value co-creation, resource integration, and the role of networks and systems.

A central premise of SDL is value co-creation, which occurs when organizations and customers jointly participate in service processes. Value is not produced by the firm alone but is realized in use, a concept referred to as "value-in-use." This means that the actual value of a service depends on how customers apply and experience it in their specific contexts. In healthcare, value is realized when patients actively engage in diagnosis, treatment, and follow-up care, rather than simply receiving medical services.

SDL also emphasizes resource integration, where multiple actors combine their resources to create value. In private hospitals, healthcare providers contribute professional expertise, medical technology, and infrastructure, while patients contribute personal information, compliance, lifestyle choices, and experiential knowledge. Innovation emerges when these resources are effectively integrated to improve service processes, develop new care models, and enhance patient outcomes.

Relevance of the Theory to the study

The theory has significant implications for innovation in service organizations. By encouraging continuous interaction and collaboration, SDL provides a foundation for service innovation, including process innovation, digital health solutions, and patient-centered care models. In private hospitals, innovations such as telemedicine, electronic health records, and personalized treatment plans can be understood as outcomes of value co-creation and resource integration between patients and healthcare providers.

Weaknesses of Service-Dominant Logic

Despite its strengths, Service-Dominant Logic has been criticized for its abstract and conceptual nature, which makes empirical application challenging. The broad scope of the theory provides limited managerial guidance on how organizations should practically implement value co-creation strategies. Additionally, SDL assumes a level of customer participation that may not always be feasible in healthcare settings, particularly when patients are critically ill or lack the capacity to actively engage in care processes.

Nevertheless, SDL offers a robust theoretical foundation for examining co-production and innovation in private hospitals. By framing healthcare value as co-created through interaction, collaboration, and shared responsibility, the theory helps explain how patient involvement contributes to improved service quality, innovation, and sustainable competitive advantage. As such, Service-Dominant Logic is highly relevant for studies investigating patient participation, co-production, and innovation in private healthcare organizations.

Research method

In the study, qualitative method is adopted. The research design for this study is a qualitative case study approach, centered on assessing co-production and innovation in Al-madina private hospital in Zaria Metropolis, Kaduna State. The study used a case study to explore the complexity of the phenomenon.

The population of the study includes: Staff and patients of Al-madina hospital Zaria Kaduna state. Therefore the total population is 3800. The study utilized purposive sampling to select participants. Ten (10) participants were interviewed because they are the participants that can give quality data in-line with the suggestions of Creswell (2012). The justification for chosen 10 informants is that

saturation is the key in qualitative research in line with the suggestions of Fossey et al., 2002) that good number of journals in health sciences require that theoretical saturation be a criterion by which to justify adequate sample sizes in qualitative inquiry. Saturation has, in fact, become the gold standard by which purposive sample size is determined in health science research. The saturation was achieved when the last informant interviewed was repeating what previous interviewees have said, as a result, 10 informants were used when the interview reached its peak and informants were saying the same thing. Al-madina private hospital was chosen because it's one of the largest private hospitals in Zaria with modern facilities that stand the test of time and Zaria was chosen because of its strategic location, the present of many higher institutions, such as Ahmadu Bello University, federal university of education, college of aviation, produce many graduates that could co-production and innovation. The study used semi-structured interviews for data collection. Semi-structured interviews were conducted with Al-madina hospital stakeholders. The semi structured interviews were recorded using IC recorder which was later transcribed, NVivo version 15 software was used to analyzed data. The study adopts a thematic analysis approach to analyze the data collected. This process involves coding the data to identify themes and patterns related to the research question and objective.

Research findings



Figure 1.1 Word cloud

The figure above shows the word cloud; the essence of word cloud is to identify pattern and trajectory on innovation and co-production. The key words as the words cloud shows include, laboratory test, phone number, WhatsApp etc.

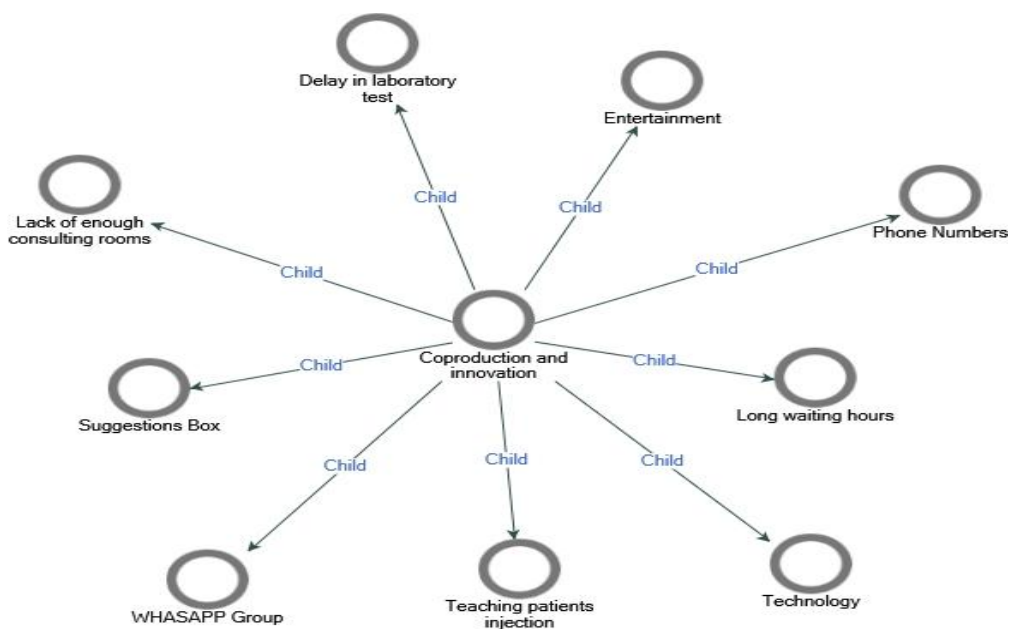


Figure 1.2. The Sub-themes

The figure above shows the sub-themes developed on co-production and innovation among private hospitals in Zaria metropolis such as long waiting hours, Delay in laboratory test, Lack of enough consulting rooms etc. As explained below.

Long waiting hours

Long waiting hours is a sub-theme developed as the interviews shows: -

In Al-madina private hospital patients spent several hours waiting to be attended by Doctors, as a result, some patients gave inputs on how to save time, this led Al-madina hospital to give appointments to patients so as to spread the waiting time period and avoid patients congestion waiting to see Doctor, some were given appointment by four o'clock in the evening, some by five o'clock in the evening, even eight o'clock in the night to spread time in order to avoid congestion (R1, R3, R6 & R7).

Delay in laboratory test

Another area that the patients give input to the hospital is delay in laboratory test as the participants interviewed put it:-

Part of the problem of the Al-madina private hospital is long time in getting laboratory test results, it takes maximum of two weeks depending on the type of test, some time there are issue of emergency that required urgent test which if care is not taken may result to the death of patient, patients made suggestion on this and we are trying to improve the situation (R2, R4, R8 & R5).

Lack of enough consulting rooms

Also, the participants talked about lack of enough consulting rooms as the interviews shows:-

There are issue were two doctors share the same consulting room in Al-madina private hospital, doctors sharing table attending to patients, which contradict right to confidentiality, patients are against these practices, some patients are suggesting additional consulting rooms or they should be allowed to enter to see the doctor one by one(R4, R9 & R10).

Entertainment

Most private hospitals are entertaining their patients in order to make them feel comfortable especially during antenatal as the analysis shows:-

Al-madina private hospital makes the environment conducive by carrying the pregnant women along, playing music for them, dancing together with Doctors and Nurses in order to make them feel comfortable, which is a form of exercise while ANC is going, even in labour room they do play music to pregnant women just to reduce their worries even though they are in pain, hitherto before it was purely business, for now, the innovation is more in private sector then public sector (R1, R3 & R6).

Suggestions Box

The hospital has suggestions box to improve their services as the analysis revealed:-

We have three suggestions boxes in the Al-madina private hospital in order to welcome ideas from our patients to improve some of the services that we provides, though, only few patients are making use of the such suggestion boxes for input to the hospital, we have received several areas of complaints from our patients(R4, & R7).

Teaching patients self-injection

The analysis further revealed that, the hospital is co-producing injection with patients as the interviews revealed: -

The Doctors and Nurses of Al-madina private hospital teaches patients on how to do injection like people with type one diabetes mellitus, treatment is solely insulin, insulin injections are given to them like 30 minutes before meal, i.e. breakfast, lunch and dinner, patients are not expected to be coming to the hospital often, therefore the Doctors teach the patient how to administer the injection on their own, and the injection is not difficult, it is just done beneath the skin (R5, R7 & R3).

In another development, an informant put it that: -

There are certain exercise introduced in Al-madina private hospital for instance people with stroke, rehabilitation or physiotherapy, the Doctors and Nurses are also teaching the patients on physiotherapy, by the time the patients is discharged, he will be able to do it alone, even oral medication, you need to teach patients and also intravenous drug administration, due to hospital cost, every time they spent in the hospital is additional cost, therefore some patients do make a suggestion that they have someone close to them that can give the injection for them(R2, R1 & R6).

Technology

Technology has changed the ways things are done in the hospitals as the interviews shows:-

The advance of technology also influences patient's engagement in Al-madina private hospital, technologies such as glucometer, digital temperature measurement; digital blood pressure equipment etc enhances interaction with patients, by teaching the patients how to use the equipment as well as guiding them on manual interpretation (R1, R4& R7).

WhatsApp Group

WhatsApp Group is another area that the analysis touches as the interviews revealed: -

The Al-madina private hospital also creates WhatsApp Group to interact with patients in order to share their experiences regarding their services as the analysis shows:- “We have a WhatsApp Group where all the patients are added to enhance interaction between patients and hospital as well as avenue for giving inputs regarding the services that the hospital offers to the patients”(R3 & R5).

Phone Numbers

The Participants interviewed also said on Phone number as one of them put it:

The Doctors also gives Phone Numbers to the patients in Al-madina private hospital to facilitate Co-production between the patients and the hospital such that the patients can call for clarification and inputs regarding service improvements, some of the areas that the patients gives suggestions are improvement in facilities as well as hygiene(R2 &R8).

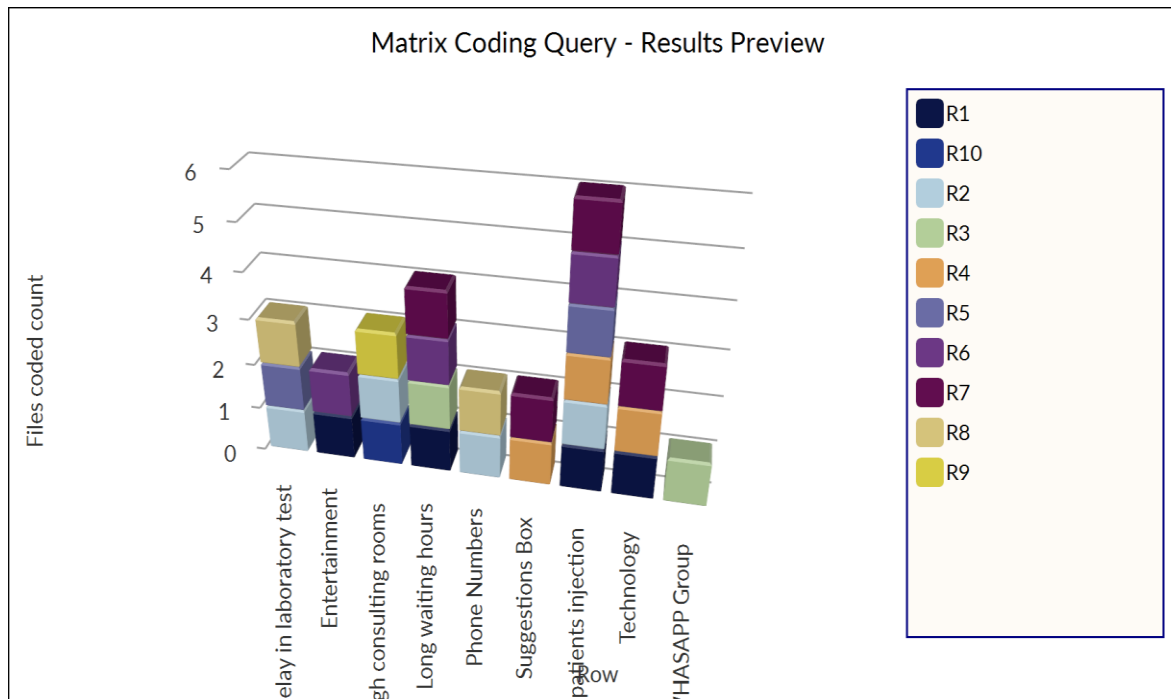


Figure 1.3. Matrix Coding Query

The figure above shows Matrix Coding Query, the most important areas that patients and doctors contribute to co-production and innovation are in areas such as Teaching patients self-injection especially cancer and diabetic patients, followed by long waiting hour, laboratory test, consulting rooms as well as technology.

Discussions of the findings

The findings of this study provide deeper insight into how co-production operates as a mechanism for service innovation in private healthcare settings in Zaria Metropolis. Rather than simply demonstrating that patients provide feedback or suggestions, the results reveal a more complex process in which patient experiences function as critical knowledge resources that shape service improvements within the hospital. This pattern is consistent with the central premise of Service-Dominant Logic, which argues that value emerges through the integration of resources among multiple actors within a service ecosystem (Vargo and Lusch, 2004).

A key insight from this study is that patients contribute not only information but also contextual knowledge derived from their lived healthcare experiences. For instance, complaints about long waiting hours did not merely highlight service inefficiency; they exposed structural constraints within

the hospital's service delivery process, including limited consultation spaces and scheduling inefficiencies. When the hospital introduced appointment scheduling and adjusted consultation times, the resulting innovation reflected the integration of patient knowledge with institutional decision-making. In this sense, patients acted as “operant resources”—a concept central to Service-Dominant Logic—because their experiential knowledge actively influenced how services were redesigned (Vargo and Lusch, 2004).

The findings also highlight an important contextual nuance. In many developed healthcare systems, patient participation in service design is often institutionalized through formal mechanisms such as patient advisory boards or digital health platforms. In contrast, the Zaria context demonstrates a more informal but equally significant model of co-production. Suggestion boxes, interpersonal communication with medical staff, and patient support groups function as localized mechanisms through which patients participate in service improvement. These mechanisms illustrate how co-production may evolve differently in resource-constrained healthcare environments while still fulfilling the core principles of Service-Dominant Logic (Vargo and Lusch, 2008).

Another important dimension revealed by this study is the role of social and emotional interaction in healthcare innovation. Patient support groups, such as sessions involving HIV or cancer survivors, illustrate how experiential narratives contribute to value co-creation. These interactions generate psychological reassurance, knowledge sharing, and trust between patients and healthcare providers. From a theoretical perspective, this demonstrates that value co-creation extends beyond technical improvements in service delivery to include emotional and relational dimensions of healthcare. This insight expands the practical application of Service-Dominant Logic within healthcare contexts where social relationships often shape service experiences (Vargo and Lusch, 2008).

The study also reveals the growing importance of digital communication in facilitating co-production. The use of WhatsApp groups and other social media platforms enabled continuous interaction between patients and healthcare providers outside the physical hospital environment. These digital interactions illustrate how service ecosystems extend beyond traditional organizational boundaries. Through such platforms, patients contribute feedback, ask health-related questions, and receive medical advice, thereby creating ongoing opportunities for knowledge exchange and service improvement. This finding supports the view within Service-Dominant Logic that value co-creation

occurs through dynamic networks of actors rather than through isolated service encounters(Vargo and Lusch, 2004).

Importantly, the Zaria context provides a unique contribution to the literature on co-production and healthcare innovation. Much of the existing research on co-production has been conducted in developed economies with highly institutionalized healthcare systems. This study demonstrates that even within a developing-country context characterized by limited resources, co-production can still emerge as a significant driver of service innovation. The findings therefore suggest that patient participation may represent a cost-effective mechanism for improving healthcare delivery in resource-constrained environments (Vargo and Lusch,2004).

Overall, the study contributes to the theoretical development of Service-Dominant Logic by illustrating how patient knowledge, experiential narratives, and digital communication platforms function as key resources in the co-creation of healthcare innovation. Rather than viewing patients solely as service recipients, the findings reinforce the view that patients are active participants in the service ecosystem whose contributions can reshape healthcare delivery processes (Vargo and Lusch, 2004).

Conclusion

In conclusion many changes were introduced at Al-madina private hospital such as entertainment, suggestions box, teaching patients' self-injection, long waiting hours, speed in laboratory test, consulting rooms, technology, WhatsApp group and doctors phone numbers. Most of the studies on co-production and innovation were carried out in advanced industrial societies (the developed world), therefore the study contributed to literature by way of examining co-production and innovation using Al-medina private hospital Zaria as a unit of analysis. The implications are Al-madina private hospital in Zaria is experiencing many improvements in areas such as provision of enough consulting rooms, improvement in laboratory test, calming the patients and their relatives down through entertainments such as introduction music, television etc, introduction of doctor telephone number to the patients for further inquiry regarding the adverse effects of certain medication, patients were taught on how to administer self- injection in case of emergency etc. Therefore the future direction of Al-madina private hospital is that the hospital is one of the fastest growing private hospital in Zaria metropolis.

Recommendation

The study recommends the following:-

1. The Al-madina private hospital management should create more forum for interaction between patients and management staff for better service delivery, this could be done weekly or monthly where the both parties will gather together inform of meeting or dining with patient in order to feel free and express their views regarding services rendered by Al-madina private hospital.
2. Also, there is need for patients to feel free and express their views and dissatisfaction where necessary regarding the services rendered to them by Al-madina private hospital
3. In addition, policymakers should bring out laws that encourage consensus and collaboration among stakeholders for effective and efficient service delivery in both public and private health care in Kaduna state.

Suggestions for further research

Further research should be carried out on the innovative patient self-injection in private hospitals.

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E-COMMERCE AND CUSTOMER RETENTION IN NIGERIA'S RETAIL SECTOR: A
STUDY OF JUMIA AND KONGA IN JOS, PLATEAU STATE

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Abstract

The advent of the internet and digital technologies has significantly transformed customer-retailer interactions, driving the rapid expansion of E-commerce and online shopping platforms. This study examined E-commerce and customer retention in Nigeria's retail sector, focusing on the analysis of Jumia and Konga in Jos, Plateau State. Survey research design was employed and the population of the study is infinite and sample size of 424 customers. Primary data collection was carried out with the aid of a closed-ended questionnaire measured on a five-point Likert scale; 399 structured questionnaires was returned representing 94% used for data analysis using PLS-SEM with the aid of Smart-pls 4. Findings revealed that time, search and delivery convenience have positive and significant effect on customer retention. The study concluded that E-commerce positively and significantly affects customer retention among Nigeria's Retail Sector: A study of Jumia and Konga in Jos, Plateau State. It was recommended that; Jumia and Konga should continually optimize their websites and mobile apps to ensure faster load times, simplified navigation, and smoother checkout processes. This will reinforce time convenience and minimize cart abandonment rates. Furthermore, more investment should be made in both platforms to improve search convenience and build greater customer confidence in purchase decisions. Similarly, Jumia and Konga should maintain high delivery convenience to expand delivery options and provide real-time and transparent tracking systems that keep customers informed and satisfied throughout the delivery process.

Keywords: E-commerce, time convenience, delivery convenience and customer retention.

Introduction

The advent of the internet and digital technologies has significantly transformed customer-retailer interactions, driving the rapid expansion of E-commerce and online shopping platforms (Zeithami et al., 2016). In Nigeria, the widespread use of internet-enabled devices and mobile phones has

accelerated the growth of online shopping, allowing customers to conveniently purchase goods and services from their homes (Folayan, 2023). According to Omotayo and Okpako (2023), internet usage in Nigeria increased significantly from 0.5% in 2000 to 57.3% in 2023, underscoring the ongoing digital transformation.

Similarly, extant research has established that online shopping has significantly transformed Nigeria's retail sector by offering consumers a more convenient and flexible purchasing option (Okereke, 2023). Consequently, the rapid growth in internet and smartphone usage has accelerated the acceptance of E-commerce platforms such as Jumia, Konga, and Jiji, which have become major drivers of the country's digital retail market (Adeyemi & Olubiyi, 2023). As of January 2023, Nigeria recorded an internet penetration rate of 55.4%, with over 103 million users, representing almost half of the national population (Adeyemi & Olubiyi, 2023). Mobile devices dominate internet usage, accounting for 84% of web traffic, compared to 16% from desktop computers. In 2020, approximately 76.7 million Nigerians engaged in online shopping, reflecting the growing acceptance of E-commerce platforms (Jumia Nigeria, 2024). Among online retailers, Jumia leads the market with about 147 million visits in 2020, followed by Jiji with 54 million visits and Konga with 23 million visits. Collectively, these platforms play a critical role in shaping consumer preferences and fostering Customer Retention within Nigeria's online retail industry.

Digital purchasing or online shopping refers to how easily consumers can conduct shopping activities on digital platforms (Chu et al., 2004). This can take different forms, such as time or place convenience, which allows customers to shop from any location. Time convenience, which enables shopping at any time; search convenience, which relates to the ease of finding products; and delivery convenience, which ensures prompt and reliable delivery of purchased items, are critical for customer retention (Laudon & Traver, 2020). As competition among online retailers in Nigeria intensifies, it becomes essential to examine how these different dimensions of convenience affect customer retention, as this understanding supports sustained business growth (Nwankwo et al., 2014).

In this context, customer retention refers to a consumer's tendency to repeatedly patronize a particular online store, make continuous purchases, and recommend the platform to others (Aniefiok & Aniebiet, 2024). Building customer retention is especially important for online retailers due to the high costs associated with acquiring new customers and the wide range of alternatives available to digital shoppers (Dlodlo, 2014). With the rapid expansion of E-commerce in Nigeria, it is therefore crucial

to assess how key aspects of online shopping convenience shape customer retention within the country.

Furthermore, prominent E-commerce platforms such as Jumia, Konga, Jiji and Kara have gained substantial market share, with convenience emerging as a key determinant of consumer behavior and retention (Boateng & Nartel, 2016). E-commerce refers to the ease with which consumers can conduct shopping activities through digital platforms (Chu et al., 2004). This included several dimensions such as place convenience (ability to shop from any location), time convenience (ability to shop at any time), search convenience (ease of locating products), and delivery convenience (timely and reliable delivery of goods) (Laudon & Traver, 2020).

As competition among Nigerian E-commerce retailers intensifies, understanding how these dimensions of convenience affect Customer Retention has become crucial for achieving sustainable business success (Renmans, 2023). In this context, customer retention refers to a customer's consistent preference for a particular online store, repeated patronage, and willingness to recommend the store to others (Aniefiok & Aniebiet, 2024). Building and maintaining customer retention is vital for E-commerce or online retailers due to the high costs of customer acquisition and the abundance of digital alternatives available to consumers (Dlodlo, 2014). Given the growing significance of E-commerce in Nigeria, this study investigates how the core dimensions of E-commerce shopping convenience time, search and delivery influence customer retention in Jos, Plateau State.

Statement of the Problem

The Nigerian retail sector in Jos, Plateau State, has experienced notable growth in E-commerce, driven by platforms such as Jumia and Konga. Despite this progress, the level of shopping convenience offered by many online retailers remains a critical determinant of customer retention. Convenience in online shopping encompasses several dimensions such as location, time, search, and delivery convenience (Chiu et al., 2019), with each expected to enhance customer satisfaction and foster retention (Aniefiok & Aniebiet, 2024). However, in Nigeria, customer experiences suggest mixed outcomes.

Research Questions

This study is guided by the following research questions:

- i. How does time convenience affect customer retention in Nigeria's retail sector, Jos, Plateau State?

- ii. To what extent does search convenience affect customer retention in Nigeria's retail sector, Jos, Plateau State?
- iii. How does delivery convenience affect customer retention in Nigeria's retail sector, Jos, Plateau State?

Objectives of the Study

The main objective of this study is to examine the effect of E-commerce on customer retention in Nigeria's retail sector in Jos, Plateau State. However, the specific objectives are to:

- i. determine the effect of time convenience on customer retention in Nigeria's retail sector in Jos, Plateau State.
- ii. examine the effect of search convenience on customer retention in Nigeria's retail sector in Jos, Plateau State.
- iii. analyze the effect of delivery convenience on customer retention in Nigeria's retail sector in Jos, Plateau State.

Research Hypotheses

The following null hypotheses are formulated:

H0₁: Time convenience has no significant effect on customer retention in Nigeria's retail sector in Jos, Plateau.

H0₂: Search convenience has no significant impact on customer retention in Nigeria's retail sector in Jos, Plateau State

H0₃: Delivery convenience has no significant impact on customer retention in the Nigeria's retail sector in Jos, Plateau State.

Scope of the Study

This study focused on E-commerce and customer retention in Jos, Plateau State, Nigeria. Specifically, the study examined the effect of time, search, and delivery convenience on customer retention of Jumia, and Konga, which have exploited E-commerce and customer retention in Nigeria's retail sector in Nigeria during the past one year. The scope excludes non-retail services.

Significance of the Study

This report is valuable to many stakeholders in Nigeria's retail and E-commerce ecosystems. As online shopping continues to transform the retail industry, understanding the role of convenience in promoting customer retention becomes increasingly important for guaranteeing corporate viability,

customer satisfaction, and market growth. The findings will assist Nigerian internet retailers in understanding how to increase service delivery and client loyalty by using better convenience tactics. Similarly, this study contributes to the corpus of information regarding consumer behaviour and digital marketing in emerging economies such as Nigeria. Furthermore, the findings and conclusions of this study will serve as policy recommendations for E-commerce infrastructure, logistics, and consumer protection. Finally, the study improves the E-commerce buying experience, which benefits end users.

Literature Review

Concept of E-commerce

E-commerce is the short form of electronic commerce, which refers to the purchase and sale of goods and services over the internet. It involves online transactions, online marketing and electronic settlement methods (Iroanwusi et al., 2024). Retailers want to differentiate themselves from competitors by offering customers a delightfully distinctive shopping experience that will encourage them to return (Wang et al., 2022). The first retailing tactic utilized by companies to compete in the market was offline shopping. However, this type of shopping is considered to have disadvantages because of its high fixed costs, significant offline infrastructure expenditures, and dependence on foot traffic (Karim & Qi, 2021). Consequent upon this, some shops and customers completely switched from offline to online buying when the internet became available in the late 20th century (Kumar et al., 2020). Presently, three retail firms, namely Jumia, Konga and Jiji dominate the Nigerian internet retail market (Olotewo, 2017). However, Jumia and Konga have more dominant impact in Jos area.

Time convenience

The capacity of customers to shop whenever it is most convenient for them, without being constrained by regular store hours, is known as temporal convenience or time utility (Tzeng et al., 2020). Online marketplaces are open round the clock, thus providing consumers with unfettered access to products and services. This is particularly helpful in crowded cities like Lagos and Abuja, where time limits and traffic can make physical shopping difficult (Iroanwusi et al., 2024). Removing time constraints increases client satisfaction and increases the possibility of repeat business (Mofokeng, 2021).

Search Convenience

The simplicity of finding desired products on an E-commerce platform is known as search convenience (Alzoubi & Ghazal, 2022). This convenience is increased by features like sophisticated

search filters, neatly arranged product categories, and tailored suggestions. Users may rapidly filter possibilities on Jiji, Jumia, and Konga by price, brand, location, and other factors, which lessens the cognitive burden and searching time. High search convenience encourages recurring use and increases user happiness.

Delivery Convenience

The degree to which the platform satisfies users' demands for product delivery speed, dependability, and flexibility is known as delivery convenience (Wijaya et al., 2021). Real-time tracking, pick-up locations, and home delivery are all included in this. Because of infrastructural problems, delivery logistics might be difficult in Nigeria; therefore, platforms that provide reliable and timely delivery services stand out in terms of client loyalty and satisfaction. In this regard, Konga has an edge thanks to its own logistics division (KXPRESS).

Customer Retention

The readiness of a customer to continue doing business with a company or brand despite the availability of other options or intense competition is referred to as customer retention (Iroanwusi et al., 2024). Oliver (1999) also established that loyalty is "a firmly held commitment to rebuy or repatronize a favored product or service consistently in the future, hence creating repetitive same-brand or same brand-set purchase." Customer Retention is a critical factor in determining the long-term viability and profitability of E-commerce platforms like Konga and Jumia in Nigeria. Similarly, Sivapalan and Jebarajakirthy (2017) described loyalty as "repeat patronage." That is, the proportion of a customer's purchases in a certain category to the number of times they have chosen the same commodity or service.

Empirical Review

Budaya (2023) conducted a study on the effect of E-commerce on Customer Retention and retention, using the purposive sampling method to collect the necessary data from 280 respondents who had TikTok shop service. The variables employed to measure digital marketing include search, place and delivery convenience and conventional least square regression to analyze the data. The findings revealed that e-Customer Retention and Customer Retention and satisfaction were directly impacted by the quality of e-service.

Molinillo et al. (2022) examined the impact of E-commerce on customer retention and satisfaction using retail app experience. The variables employed to measure E-commerce include time and

delivery convenience, while customer retention was measured by customer retention and satisfaction. The study used survey research design with a population and sample size of 545 from store app users. The tool of analysis employed to test data was PLS-SEM and the findings showed that time convenience has a positive and significant impact on consumer retention and loyalty, while delivery convenience showed a positive and insignificant effect on Customer Retention.

Furthermore, Alzoubi and Ghazal (2022) investigated the effect of E-commerce and e-payment on sales growth in the UAE banking business. A survey of 217 bank employees was conducted using structured questionnaires through email on bank technicians, middle managers, and top managers. PLS-SEM was used to test the data and findings revealed that delivery convenience had a positive and significant influence on customer retention and sales growth, both directly and indirectly, through e-payments.

Similarly, Mofokeng (2021) evaluated the impact of online purchasing qualities on service delivery and customer retention in South Africa. The study adopted a survey research design and primary data with the aid of a structured questionnaire that was distributed to customers of E-commerce. A sample of 287 respondents was drawn from the population of E-commerce customers using a stratified random sampling method and data were analyzed using PLS-SEM. The findings demonstrated that product delivery, perceived security, alongside search convenience and product variety, all had a positive and significant effect on online buyers' delivery convenience and happiness. Furthermore, the findings demonstrated that both customer happiness and the quality of the information provided had a positive influence on Customer Retention and loyalty.

Kumar and Ayodeji (2021) used SEM to gather data from Indian online shoppers in order to study the e-retail factors for customer activation and retention in Indian E-commerce customers. With a population of 386, which was also used as the study sample, the study used PLS-SEM to test the data and the result showed that delivery, time and place convenience had positive and significant impact on customer retention. Furthermore, five key elements were found to be responsible for the success of E-commerce stores in India. They include benefits, trust, information quality, system quality, and service quality. The results from SEM showed that the five success elements identified greatly boosted consumer satisfaction, repeat purchase and retention.

Pambudi et al. (2021) collected data from 500 customers and used the ordinary least square method to analyze the data and to investigate the impact of customer relationship mediation between search

trust and acceptance of e-banking technology in Malaysia. The findings indicated that the relationship between e-banking and search and trust convenience was increased by customer relationship, suggesting that a larger degree of customer relationship enhanced the effect of online shopping on consumer retention and satisfaction.

In a related study, Wijaya et al. (2021) investigated the effect of E-commerce website service quality on customer retention. The study used a descriptive survey with a population of 104 shop customers, which was also used as sample size. Data were analyzed using the Importance Performance Analysis (IPA) method and Structural Equation Model (PLS-SEM). The results showed that both search and time convenience on E-commerce websites has positive and significant impact on service quality and customer retention, while delivery convenience has a positive and insignificant effect on customer retention and contentment.

Another research was carried out by Mitchev and Nuangjamnong (2021) on the impact of E-commerce on customer satisfaction and loyalty during the COVID-19 pandemic in Thailand. The study adopted a survey research design and structured questionnaires to collect data. The Study population of 400 was used as sample due to its limited size. Simple and multiple linear regressions were used to analyse the data and findings showed that perceived security, information quality, and user interface quality have a significant impact on customer retention and loyalty.

Khaled et al. (2020) carried out an empirical study on search and delivery convenience in manufacturing firms in Delhi, India. The study used a population of 380 top and middle-level managers, which was also used as sample of the study and PLS-SEM as method of data analysis. Findings showed that search and delivery convenience had no significant effect on customer retention and loyalty. That is, search convenience did not influence customers' retention and reliability goals.

Raman (2019) evaluated the role of E-commerce on customer retention in female consumers' intention to shop online by gathering data from 909 online shoppers from India. The study employed a survey research design and structured questionnaires to gather data, while E-commerce was measured using time and search convenience to determine customers' retention and loyalty. Data was analyzed using correlation and multiple regression. Findings showed that time and place convenience had a substantial influence on female consumers' desire to buy online. However, search and trust convenience had no significant impact on women's intention to shop online through attitude and customer retention.

Theoretical framework

Technology Acceptance Model (TAM).

This study adopted the use of Technology Acceptance Model (TAM), which was propounded by Fred Davis in 1986. TAM is one of the most important theoretical models for comprehending user acceptance and adoption of technology-based systems. It is especially pertinent to online marketplaces like Jumia and Konga, where user behavior and loyalty are influenced by the platform's perceived usefulness and simplicity of use. According to TAM, a technology's adoption and actual use are determined by two main factors: perceived usefulness and perceived ease of use (Davis et al., 2024). The Technology Acceptance Model (TAM) posits that the adoption and actual usage of a technology are primarily influenced by two factors: perceived usefulness and perceived ease of use (Davis et al., 2024). Perceived usefulness refers to the extent to which an individual believes that using a particular system will enhance their job or task performance (Davis et al., 2024). In the context of online shopping, this relates to customers' perceptions of how effectively a platform helps them complete shopping activities, such as saving time, accessing a wide range of products, and making easy comparisons (Aburbeian et al., 2022). On the other hand, perceived ease of use describes the degree to which a person believes that using a system requires minimal effort (Davis et al., 2024). Online shopping platforms that incorporate user-friendly features such as intuitive navigation, effective search tools, and clear product information are more likely to enhance user acceptance and encourage continued use (Aburbeian et al., 2022). Within the realm of online shopping, this refers to the extent to which customers believe the platform facilitates the efficient completion of shopping tasks (time savings, access to variety, and ease of comparison) (Aburbeian et al., 2022). An E-commerce platform can boost user acceptance and ease of use if it has intuitive features like search filters and clear product descriptions. Consequently, these factors affect a user's attitude towards using the technology, their level of readiness to use the platform, and their actual use of the system, which in this study is closely linked to loyalty and continued. TAM plays a crucial role in elucidating how customers engage with platforms such as Jiji, Jumia, and Konga in the context of online shopping convenience and customer retention in Nigeria.

Methodology

This study employed survey design, while the population is infinite, as there is no actual number of customers who patronize Jumia and Konga in Jos, Plateau State. The target population comprised

Nigerian online shoppers who had made purchases on Jumia and Konga within the past year. These platforms were selected because they rank among the largest and most widely used E-commerce sites in Jos and Nigeria at large. Purposive sampling can be used to intentionally select **retail businesses and customers who actively use E-commerce platforms**. This technique ensures that respondents possess relevant knowledge and experience with online retail services, making them suitable for providing meaningful data on customer retention. The study employed primary data collected via a closed-ended questionnaire on a five-point Likert scale. The collected data were subjected to reliability and validity tests, and the analysis was conducted using structural equation modeling with SmartPLS 4. The Kothari (2004) formula was used to determine a sample from an infinite population.

$$n = \frac{z^2 * p * q}{e^2}$$

where:

n= sample size

z=the value of the standard deviation of a given confidence level

P= sample proportion

q=1-p e=acceptable error, so in this case, we set

e= 0.05, z=1.96

p= 0.5 q= 0.5, and we obtain

$$n = \frac{(1.96)^2 (0.5) (0.5)}{(0.05)^2}$$

$$n = \frac{0.9604}{0.0025} = 384.16$$

n= 384 customers

According to Israel (2013), 10% of the already calculated sample size can be added to the sample to enable the researcher to administer more questionnaires and obtain a reliable number of questionnaires valid for analysis.

Hence;

$$\frac{10}{384} \times 384$$

10

= 38.5

Therefore, $384 + 38 = 422$ respondents

Based on the estimated sample size, 422 samples were considered for the study to ensure that at least 384 responses were obtained, because analyzing fewer than the actual sample size would defeat the purpose of using the infinite population formula. However, out of 422 questionnaires administered, 399 were used for data analysis.

The study model is specified in Figure 1 below.

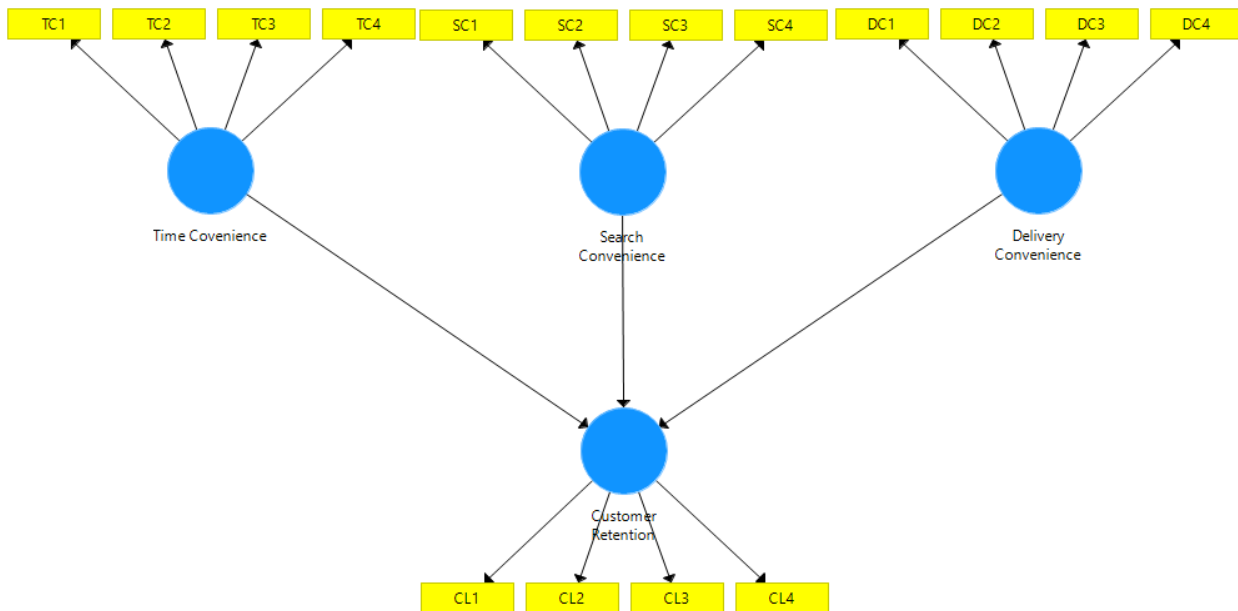


Figure 1: Study Model

Result and Discussion

To ensure data integrity, a preliminary assessment was conducted to detect potential issues such as missing values, outliers, or biased responses. The analysis confirmed the absence of missing data, outliers, or biased responses, ensuring the reliability of the collected information.

The Measurement Model

Evaluating the outer loadings of study items is crucial for assessing a measurement model, as these loadings reflect the strength of the relationship between each item and its associated construct. Hair

et al. (2019) suggest that loadings exceeding 0.70 are typically considered acceptable, as they indicate that more than 50% of the variance in the indicator is explained by the construct. This threshold is important because it ensures that the construct significantly influences the indicator, contributing to a reliable measurement of the items. Loadings above 0.70 demonstrate a strong connection between the items and their underlying constructs, thereby increasing confidence in the measurement model's accuracy and validity as indicated in Figure 2 below.

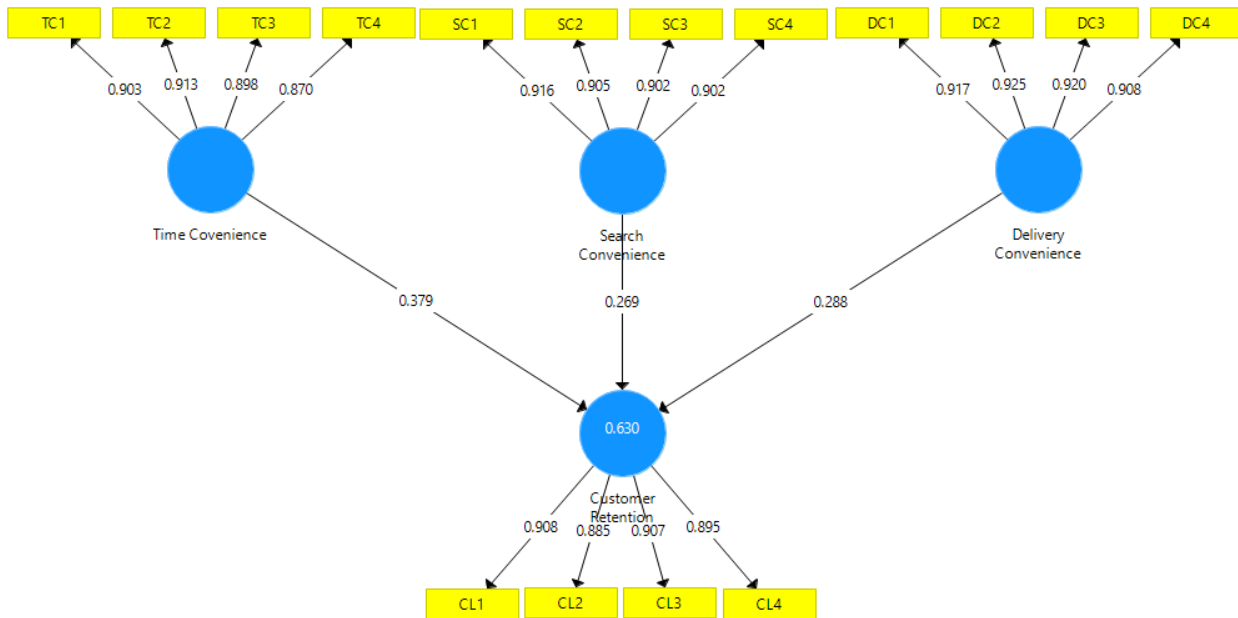


Figure 2: *Indicator outer loading*

Table 2: Construct Reliability of the Study Scale

Constructs	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Customer Retention	0.921	0.921	0.944	0.808
Delivery Convenience	0.938	0.939	0.955	0.842
Search Convenience	0.927	0.927	0.948	0.821
Time Convenience	0.918	0.919	0.942	0.803

Source: *Smart PLS 4 Output (2025)*

The study evaluated internal consistency using composite reliability measures, all of which exceeded the recommended threshold of 0.70, as shown in Table 2, confirming strong consistency within the

constructs. Additionally, Cronbach's alpha values surpassed the minimum accepted criterion of 0.70, as advocated by Hair et al. (2017), further reinforcing the robustness of the study's measures' reliability. Convergent validity was assessed through the average variance extracted (AVE), with all variables displaying values higher than 0.50. This indicates that each construct accounted for at least 50% of the variance in the study items, demonstrating satisfactory convergent validity.

Table 3: Construct Validity of the Study Scale

Fornell-Larcker Criterion

Constructs	Customer Retention	Delivery Convenience	Search Convenience	Time Convenience
Customer Retention	0.899			
Delivery Convenience	0.685	0.918		
Search Convenience	0.633	0.603	0.906	
Time Convenience	0.692	0.618	0.5	0.896

Source: *Smart PLS 4 Output (2025)*

The Techniques established discriminant validity among constructs at a point where the square root of AVE is higher than the correlation with other constructs. Hensler et al. (2014) explained that discriminant validity, as the name implies, is conducted to establish that a construct, as used in a given study, is dissimilar to other constructs. Results as presented in the table 3 reveal that discriminant validity is established, since the square root of the AVEs as highlighted in the diagonal is greater than the correlations within the same column.

The Structural Model

In assessing the structural model, the standard criteria considered included the path coefficient, t-values, p-values, and the coefficient of determination (R^2) as shown in Figure 3 below. The bootstrapping procedure was conducted using 5000 resamples.

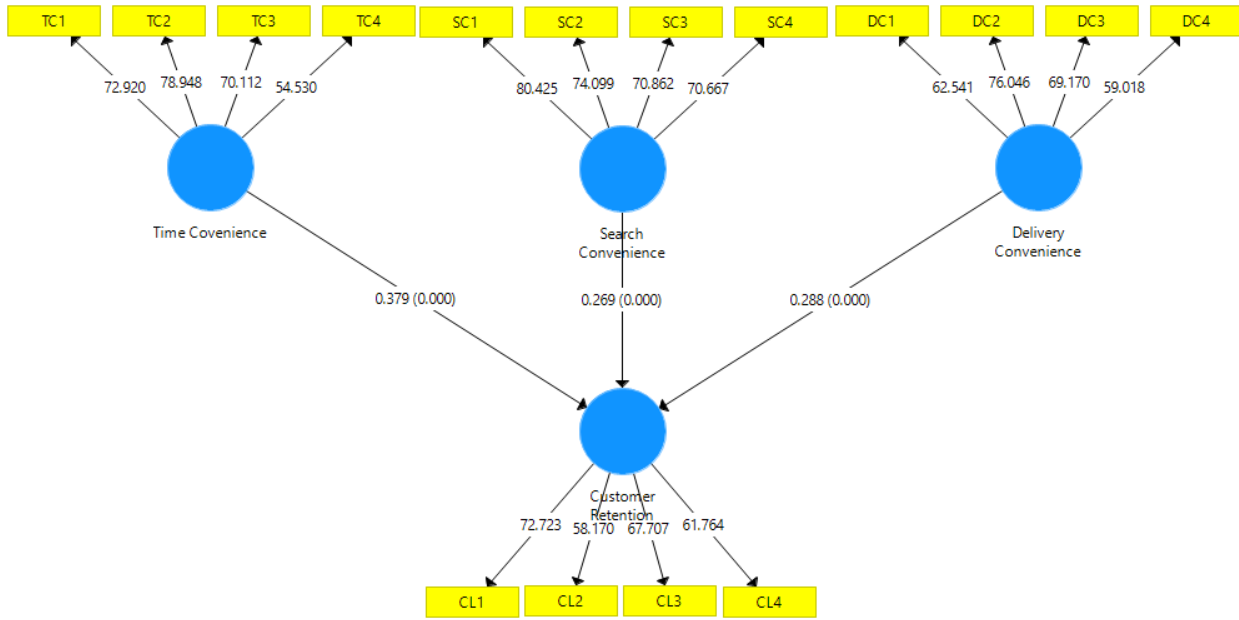


Figure 3: Path Coefficient of the regression model

Table 4: Path Coefficients

Path Relationship	B	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Delivery Convenience -> Customer Retention	0.288	0.288	0.042	6.786	0.000
Search Convenience -> Customer Retention	0.269	0.269	0.038	7.106	0.000
Time Convenience -> Customer Retention	0.379	0.381	0.043	8.903	0.000

Source: Smart PLS 4 Output (2025)

Table 4 presents the path coefficients, T-values, and P-values for the cause-and-effect relationships between time convenience, search convenience, delivery convenience, and customer retention.

Test of Hypotheses

Hypothesis One

The first hypothesis tests how easily and quickly customers can complete transactions and save time when shopping online.

The path coefficient for the cause-and-effect relationship between time convenience and customer retention is 0.379, with a t-value of 8.903 and a p-value of 0.000. These results showed a moderate and statistically significant and positive effect of time convenience on customer retention, leading to the failure to accept the null hypothesis (H_{01}), which states that time convenience, has no significant effect on customer retention. This indicates that there is a moderate contribution of time convenience to customer retention in the location under study.

Hypothesis Two

The test of hypothesis two measures how easily customers can find products, compare options, and access information. Similarly, the path coefficient for the cause-effect relationship between search convenience and customer retention is 0.269, with a T-value of 7.106 and a p-value of 0.000. These values indicate an average statistically significant and positive effect of search convenience on customer retention, leading to the failure to accept the null hypothesis (H_{02}), which states that search convenience, has no significant effect on customer retention. This suggests that search convenience enhances customer retention.

Hypothesis Three

The last hypothesis test is for how easily customers can find products, compare options, and access information. The path coefficient for the cause-effect relationship between delivery convenience and customer retention is 0.288, with a t-value of 6.786 and a p-value of 0.000. These results show an average statistically significant and positive effect of delivery convenience on customer retention, leading to the failure to accept the null hypothesis (H_{03}), which states that delivery convenience, has no significant effect on customer retention. This also indicated that there is an average contribution of delivery convenience to customer retention.

Discussion of Findings

E-commerce and customer retention in Nigeria's Retail Sector: A study of Jumia and Konga in Jos, Plateau State was found to have positive and significant effect on customer retention. This was ascertained through the first finding from the responses gathered from the respondents, which revealed that they can shop on Jumia/Konga anytime that fits their schedule. It further showed that Shopping

on Jumia/Konga helps them save valuable time as payment process is also quick and convenient. They can easily complete their purchases without spending much time online, leading to the failure to accept the null hypothesis (H_{01}), which states that time convenience has no significant effect on customers. This result is in tandem with the findings of Sivapalan and Jebarajakirthy (2017), who established that time convenience, has a positive and significant effect on customer retention. However, the result does not tally with the findings of Wijaya et al. (2021), which showed that E-commerce websites have no significant effect on customer contentment.

The study also identified a positive and significant effect of search convenience on customer retention, as it is easy for customers to locate products that customers want on Jumia/Konga. That is, Jumia/Konga provides a clear and detailed product information website/app that makes it easy for customers to compare different product options and find the best deals or discounts easily when shopping online. This leads to the failure to accept the null hypothesis (H_{02}), which states that search convenience has no significant effect on customer retention. This result is in tandem with the findings of Alzoubi and Ghazal (2022), which showed that E-commerce greatly influenced sales growth both directly and indirectly through e-payments. However, this finding is not in tandem with the result of Raman (2019), who found that search convenience has no significant effect on customer retention.

The last finding also revealed a positive and significant effect of delivery convenience on customer retention, as customers revealed that; their orders from Jumia/Konga are usually delivered within the expected time frame. Similarly, the result showed that the delivery options provided by Jumia/Konga are flexible and convenient, which enables customers to track their orders with ease and are satisfied with the condition of the products delivered to them, leading to the failure to accept the null hypothesis (H_{03}), which states that delivery convenience has no significant effect on customer retention. This result is in line with the findings of Mofokeng (2021) whose result showed that customer retention to E-commerce was influenced by both happiness and the quality of the information provided. However, the result is in contrast with the findings of Khaled et al. (2020), who conducted an empirical study on search and delivery convenience in manufacturing firms in Delhi, India, and found that delivery convenience has no significant relationship with customer retention. The disparity in the findings could be attributed to differences in market maturity, consumer expectations, logistics infrastructure, cultural factors, and research methodology between Nigeria and India.

Conclusion and Recommendations

The study concludes that **E-commerce convenience significantly enhances customer retention in Nigeria's retail sector**, particularly among users of **Jumia and Konga in Jos, Plateau State**. The findings demonstrate that **time convenience, search convenience, and delivery convenience** each play a vital role in influencing customers' continued patronage and satisfaction. When customers are able to shop at any time, easily find and compare products, and receive timely and reliable deliveries, their overall trust and loyalty toward the platform are strengthened. This underscores that E-commerce success in Nigeria's competitive digital marketplace depends not only on product availability and pricing but also on the seamlessness, efficiency, and reliability of the shopping experience. Based on the study findings, it was recommended that Jumia/Konga should:

- i. Continually optimize their websites and mobile apps to ensure faster load times, simplified navigation, and smoother checkout processes. This will reinforce time convenience and minimize cart abandonment rates.
- ii. Reinvest in advanced search algorithms, personalized recommendation engines, and richer product descriptions (including videos, reviews, and comparisons) to improve search convenience and build greater customer confidence in purchase decisions.
- iii. **Maintain and enhance delivery logistics and transparency.** This is necessary to maintain high delivery convenience. Also, Jumia and Konga should enhance last-mile logistics partnerships, expand delivery options (such as same-day or scheduled delivery), and provide real-time, transparent tracking systems that keep customers informed and satisfied throughout the delivery process.

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ENTREPRENEURIAL ADOPTION OF DIGITAL FINANCIAL INNOVATIONS AND ITS
INFLUENCE ON RURAL SMES GROWTH IN NIGERIA

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Abstract

Entrepreneurs are key drivers of innovation, economic growth, and sustainability in small and medium enterprises (SMEs), especially in rural economies where access to conventional financial services is inadequate. In Nigeria, rural SMEs face structural financial exclusion that constrains productivity, expansion, and long-term viability. This study examines how entrepreneurs adopt digital financial innovations (DFIs), including mobile banking (MB), digital payment systems (DPSs), and fintech platforms (FPs), and analyses their influence on rural SME growth in northern Nigeria. Using a qualitative research design, the study draws on documentary and policy analysis of data from government publications, Central Bank of Nigeria reports, peer-reviewed literature, and fintech industry documents. Thematic analysis reveals that DFIs enhance SME growth by improving access to finance, strengthening financial management, increasing operational efficiency, and expanding market reach. However, adoption is hindered by inadequate digital infrastructure, low digital literacy, limited awareness, perceived complexity, and distrust of digital platforms. The study is anchored in the Technology Acceptance Model (TAM), Diffusion of Innovation (DOI) theory, and Financial Inclusion Theory (FIT), which collectively explain adoption behaviour and growth outcomes. Findings suggest that DFIs possess transformative potential for rural entrepreneurship, emphasising the need for digital inclusion strategies, institutional support, and SME-focused capacity-building programmes. This study contributes context-sensitive insights to the entrepreneurship, financial inclusion, and development finance literature and offers actionable guidance for policymakers, financial institutions, and fintech providers seeking to promote inclusive SME growth.

Keywords: Digital financial innovations; Rural SMEs; Entrepreneurship; Financial inclusion; Nigeria

Introduction

Small and medium enterprises (SMEs) constitute a central pillar of economic development across emerging and advanced economies, serving as engines of employment creation, income generation, and innovation. Globally, SMEs account for approximately 90% of all firms, generate around 70% of employment, and contribute up to 70% of global GDP (World Bank, 2020). Their significance is evident across diverse contexts, including China, the United Kingdom, the United States, Japan, Malaysia, Kenya, and Ghana, where SMEs play substantial roles in employment generation and national output. In Nigeria, SMEs represent over 90% of business establishments and contribute significantly to productivity and livelihoods, particularly within rural communities where formal employment opportunities remain limited (SMEDAN, 2021). Rural entrepreneurship therefore plays a strategic role in poverty reduction, regional balance, and inclusive economic growth.

Despite their economic importance, rural SMEs in Nigeria operate under persistent structural constraints, with limited access to formal financial services remaining one of the most critical challenges (Beck & Cull, 2014; CBN, 2022). Conventional banking systems are heavily concentrated in urban centres, excluding rural entrepreneurs through high transaction costs, stringent collateral requirements, geographic distance, and complex documentation procedures (Oyelami, Adebisi, & Adekunle, 2020). These barriers are particularly pronounced in northern Nigeria, where infrastructural deficits, lower literacy levels, and broader socio-economic vulnerabilities intensify financial exclusion (Maishanu, Alkali & Jelani, 2025).

The rapid emergence of digital financial innovations (DFIs), including mobile banking, digital payment platforms, agency banking, and fintech-enabled services, has generated transformative pathways for expanding financial access. By leveraging digital technologies to deliver cost-effective, scalable, and branchless financial services, DFIs are increasingly recognized as critical instruments for advancing financial inclusion, particularly among underserved and marginalized populations (Ozili, 2018; World Bank, 2020). In Nigeria, policy initiatives such as the National Financial Inclusion Strategy (NFIS), launched in 2012 by the Central Bank of Nigeria (CBN), reflect a growing institutional commitment to deepening digital finance penetration and reducing exclusion (Osakwe, 2020). Moreover, Umar, Mukhtar, and Ihwan (2024) emphasise that technology adoption serves as a foundational driver in transitioning economies toward more inclusive and sustainable development by stimulating innovation and enhancing financial system efficiency

However, despite improvements in digital service availability, adoption among rural entrepreneurs remains uneven (Soetan & Umukoro, 2023). Inadequate digital infrastructure, low digital literacy, distrust of technology, and limited awareness continue to constrain effective utilisation (Oyelami, Adebiyi, & Adekunle, 2020). Additionally, existing empirical studies largely focus on urban contexts or macro-level financial inclusion outcomes, with limited attention to rural northern Nigeria and the specific growth implications for SMEs. Much of the literature also adopts quantitative approaches that may overlook the institutional and contextual dynamics shaping adoption decisions in rural settings. Against this backdrop, this study examines how entrepreneurs in rural northern Nigeria adopt digital financial innovations and how such adoption influences SME growth. Using a qualitative documentary and policy analysis approach, the study provides context-sensitive insights into adoption mechanisms, growth pathways, and structural barriers. In doing so, it contributes to the entrepreneurship, financial inclusion, and development finance literature by deepening understanding of how digital finance can foster sustainable rural enterprise growth in structurally excluded economies.

Literature Review and Theoretical Framework

Digital Financial Innovations and Financial Inclusion

Digital financial innovations (DFIs) refer to technology-enabled financial products and delivery channels that extend financial services beyond traditional brick-and-mortar banking systems (Gomber, Koch, & Siering, 2018). These innovations include mobile money, digital wallets, agent banking, fintech lending platforms, and electronic payment systems. By leveraging digital infrastructure, DFIs reduce transaction costs, minimise geographic barriers, and lower entry thresholds for underserved populations.

Empirical evidence from developing economies demonstrates that DFIs significantly enhance financial inclusion (Demirgüç-Kunt et al., 2022). In Sub-Saharan Africa, mobile money adoption has been associated with improved household welfare, increased enterprise resilience, and greater income stability (Suri & Jack, 2016). In Nigeria, the rapid expansion of fintech ecosystems, supported by regulatory initiatives from the Central Bank of Nigeria, has strengthened digital financial access. However, rural adoption remains uneven due to infrastructural deficits, unreliable network coverage, and limited digital capability among entrepreneurs (Ozili, 2018). This suggests that availability does not automatically translate into effective utilisation.

Rural Entrepreneurship and SME Growth Constraints

Rural entrepreneurship plays a vital role in stimulating local economic development, enhancing community resilience, and reducing spatial inequality (Audretsch, 2015). Rural SMEs commonly operate in agriculture, agro-processing, petty trade, and informal services, sectors that depend heavily on reliable working capital, savings mechanisms, and payment systems (IFAD, 2019). Despite their economic relevance, rural SMEs face structural disadvantages, including weak infrastructure, limited market integration, and exclusion from formal financial systems (Beck & Cull, 2014). In Nigeria, many rural entrepreneurs depend on informal financing arrangements such as rotating savings schemes and family loans, which are often inadequate for sustained expansion and long-term competitiveness (SMEDAN, 2021). These constraints reinforce cycles of limited growth and vulnerability.

Entrepreneurial Adoption of Digital Financial Innovations

The adoption of DFIs by entrepreneurs is shaped by technological, behavioural, and institutional factors. Drawing on the Technology Acceptance Model (Davis, 1989), adoption is influenced by perceived usefulness and perceived ease of use. Entrepreneurs are more likely to integrate digital financial tools when they believe such tools improve business performance and align with existing operational practices. Beyond technological perceptions, contextual factors are critical in rural environments. Studies in developing economies show that digital literacy, trust in regulatory institutions, social influence, and awareness significantly affect adoption decisions (Oyelami et al., 2020). In rural northern Nigeria, cultural norms, risk aversion, and prior experiences with informal finance further shape entrepreneurs' willingness to transition from cash-based transactions to digital platforms. These multidimensional influences suggest that DFI adoption is not merely a technological shift but an institutional and behavioural transformation.

Digital Finance and SME Growth Outcomes

A growing body of empirical research indicates that digital financial adoption positively influences SME growth outcomes. DFIs enhance access to credit, facilitate faster and more secure transactions, strengthen financial record-keeping, and enable participation in broader markets (Beck, Senbet, & Simbanegavi, 2015). Improved transaction transparency may also increase SMEs' credibility, thereby enhancing their prospects for formal financing. However, the magnitude of these growth benefits depends on both the depth of adoption and the enabling infrastructural and institutional environment.

In rural contexts characterised by structural exclusion, digital finance may serve as a catalyst for transformation, but only when adoption barriers are adequately addressed. This highlights the significance of context-sensitive investigation into how DFIs influence SME growth in rural northern Nigeria.

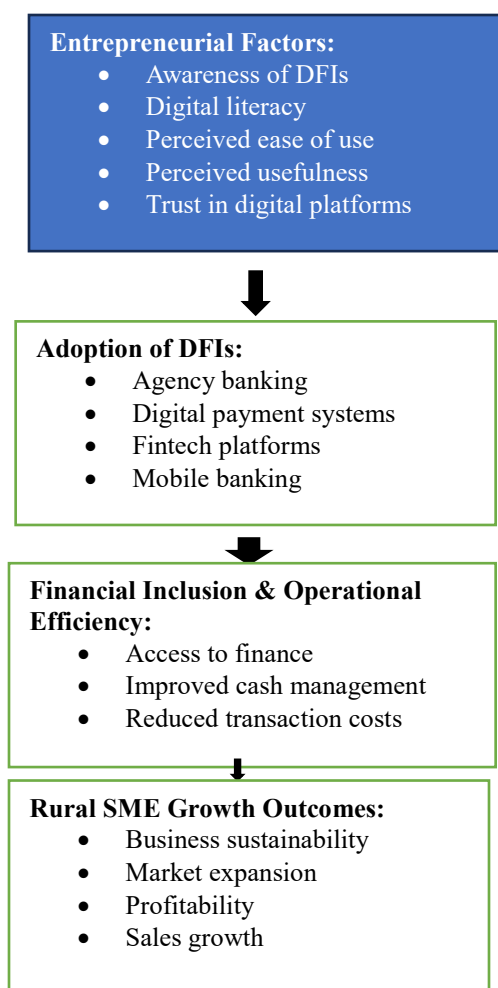


Figure 1: Conceptual Framework of DFIs and Rural SME Growth

Source: Adapted from Ozil (2020), Davis (1989), and Rogers (2003), and World Bank (2020)

Figure 1 presents the conceptual framework developed to support how entrepreneurial adoption of digital financial innovations (DFIs) influences the growth of rural SMEs in Nigeria. The framework integrates insights from the Technology Acceptance Model (TAM), Diffusion of Innovation (DOI) theory, and Financial Inclusion Theory (FIT) to provide a multi-layered explanation of adoption behaviour and firm-level outcomes. The framework proposes that entrepreneurial characteristics serve

as the primary antecedents of DFI adoption. Drawing from TAM, key determinants include perceived usefulness and perceived ease of use, which shape behavioural intention to adopt digital financial services. These are complemented by contextual entrepreneurial factors such as digital literacy, trust in digital platforms, and awareness of financial technologies. Consistent with DOI theory, innovation attributes such as relative advantage and compatibility further influence adoption decisions within rural business ecosystems where social interaction and peer learning are prominent.

DFI adoption is conceptualised as the central mediating variable in the model. Adoption encompasses the use of mobile banking, digital payment systems, agency banking, and fintech-enabled platforms for business transactions and financial management. The framework posits that adoption enhances financial inclusion by expanding access to formal financial services, reducing transaction costs, improving liquidity management, and facilitating access to savings and credit facilities. Improved financial inclusion subsequently strengthens operational efficiency, reflected in better cash flow management, faster transactions, improved record-keeping, and enhanced financial decision-making capacity. These mechanisms collectively drive rural SME growth outcomes, measured through increased sales revenue, improved profitability, business sustainability, and market expansion.

Theoretical Framework

To offer theoretical support for this study, Financial Inclusion Theory (FIT), Diffusion of Innovation (DOI) theory, and the Technology Acceptance Model (TAM) was utilised to provide a comprehensive explanation of entrepreneurial adoption of digital financial innovations (DFIs) and their implications for SME growth in rural northern Nigeria. The integration of these perspectives enables a multi-dimensional understanding of how digital finance adoption occurs and why it matters for enterprise development in structurally excluded environments.

Financial inclusion theory developed by Peterson K. Ozil (2020) emerged to explain the rising concern on how affordable, accessible and safe financial services can be provided for all, particularly low-income groups. This theory generally regards inclusive finance as a driver for economic growth, poverty reduction, and financial stability (Ozil, 2020). In this study, FIT provides the developmental foundation as financial inclusion scholarship emphasises that access to affordable, reliable, and formal financial services is critical for enhancing enterprise productivity, reducing vulnerability, and promoting inclusive economic growth. Global policy institutions such as the World Bank and the

Central Bank of Nigeria highlight digital financial services as transformative mechanisms for overcoming structural barriers associated with traditional banking systems, particularly in rural and underserved regions. In northern Nigeria, where formal financial infrastructure remains limited, DFIs offer an alternative pathway for improving access to credit, facilitating transactions, and strengthening financial management practices. FIT therefore explains the broader developmental significance of DFI adoption for SME growth.

While financial inclusion perspectives clarify why digital finance is important, diffusion of innovation theory (DOI) developed by Everett Rogers (2003) explains how such innovations spread within social systems. DOI posits that adoption is influenced by perceived relative advantage, compatibility with existing practices, complexity, trialability, and observability, as well as communication channels and social networks. In rural communities, entrepreneurial decisions are embedded within social relationships, trust structures, and peer learning processes. Adoption of DFIs may therefore depend not only on economic benefits but also on community endorsement, institutional credibility, and infrastructural conditions. DOI provides a contextual lens for understanding uneven adoption patterns and the role of social influence in shaping entrepreneurial behaviour.

Complementing these perspectives, the technology acceptance model (TEM) developed by Fred Davis (1989) explains individual-level cognitive determinants of technology adoption. TAM suggests that perceived usefulness and perceived ease of use shape behavioural intention and actual usage. Rural entrepreneurs are more likely to adopt digital payment systems, mobile banking, and fintech platforms when they perceive these technologies as improving operational efficiency, enhancing access to finance, expanding market opportunities, and being manageable within existing skill capacities. Perceptions of complexity, risk, or limited usability may, however, inhibit adoption. Through integrating these theoretical perspectives, the study conceptualises DFI adoption as a process shaped by developmental imperatives, social diffusion dynamics, and individual cognitive evaluations. Within this framework, the utilisation of digital financial innovations functions as a facilitating mechanism connecting expanded financial access to improved SME performance outcomes, including enhanced efficiency, financial management, and market expansion. This integrated approach provides a strong foundation for analysing how digital finance can promote sustainable rural enterprise growth in Nigeria.

Methodology

This study adopts a qualitative research design based on documentary and policy analysis to examine how rural entrepreneurs adopt digital financial innovations (DFIs) and how such adoption influences SME growth in northern Nigeria. Documentary analysis is appropriate for investigating institutional frameworks, regulatory developments, and sectoral dynamics where primary field access is constrained (Meyer & Mayrhofer, 2022). Documents were purposively selected based on relevance, credibility, and temporal scope, including publications from the Central Bank of Nigeria, government policy documents, national development plans, peer-reviewed journals, fintech industry reports, and development agency publications (2015–2024). Searches were conducted via Scopus, Google Scholar, and institutional websites using keywords such as “digital financial innovation Nigeria,” “rural SME growth,” “financial inclusion northern Nigeria,” and “fintech adoption SMEs.”

Data were systematically extracted into a structured matrix capturing DFI initiatives, adoption drivers, barriers, SME growth outcomes, and policy recommendations. Thematic content analysis was conducted in stages: repeated reading for familiarization, open coding to identify meaningful text segments, axial coding to group codes into categories (e.g., adoption drivers, structural barriers, growth outcomes), and synthesis into higher-order themes aligned with the integrated theoretical framework. Triangulation across policy, academic, and industry documents enhanced credibility, while iterative coding and refinement ensured analytical rigor.

Discussion

The findings of this study reveal a growing adoption of digital financial innovations (DFIs) among rural SMEs in northern Nigeria, particularly digital payment systems and mobile banking. This adoption is facilitated by agent banking networks and increased mobile phone penetration. From the perspective of the Technology Acceptance Model (TAM), these patterns reflect the constructs of perceived usefulness and perceived ease of use: entrepreneurs adopt technologies that clearly enhance operational efficiency, reduce cash-handling risks, and facilitate market access (Davis, 1989). Conversely, fintech lending platforms remain underutilised due to low awareness, perceived complexity, and trust concerns, consistent with TAM’s prediction that technologies perceived as difficult or risky are less likely to be adopted.

Beyond individual cognition, the adoption process is influenced by social and institutional factors emphasised in Diffusion of Innovation (DOI) theory. The role of agent networks, peer demonstration,

and community observability suggests that social learning and interpersonal influence significantly shape adoption decisions. Observed barriers, such as inadequate digital infrastructure, low digital literacy, and fear of fraud, highlight that perceived ease of use is not purely an individual evaluation but is mediated by environmental and social conditions. This extends TAM by showing that, in rural contexts, adoption decisions are embedded within broader systemic realities, including infrastructural and social constraints.

The study further demonstrates that DFI adoption positively affects rural SME growth, improving financial management, record-keeping, access to working capital, and market reach. These outcomes align with Financial Inclusion Theory, which posits that access to affordable and reliable financial services enhances enterprise productivity, resilience, and economic growth (World Bank, 2020). However, the uneven utilisation of fintech platforms indicates that developmental benefits are contingent upon infrastructure, user capacity, and institutional support.

By incorporating TAM, DOI, and financial inclusion perspectives, the study provides a multi-level understanding of rural DFI adoption and its impact on SME growth. TAM explains entrepreneurs’ cognitive drivers, DOI situates adoption within social and institutional networks, and FIT elucidates the broader economic and developmental significance. Collectively, the findings suggest that adoption is influenced by both individual perceptions and external conditions, and that DFIs can only fully support SME growth when complemented by digital literacy initiatives, trust-building measures, and infrastructural improvements. This integrated framework extends existing literature by demonstrating how behavioural, social, and development-oriented factors interact to shape adoption patterns and entrepreneurial outcomes in rural settings. DFI adoption contributes to SME growth through multiple pathways, reviewed in table 1.

Table 1: Influence of Digital Financial Innovations on Rural SME Growth

DFI Dimension	Growth Outcome	Description
Access to Finance	Business expansion	Improved access to savings, credit, and remittances
Financial Management	Improved sustainability	Enhanced record-keeping and cash flow management
Operational Efficiency	Cost reduction	Faster transactions and reduced travel costs

DFI Dimension	Growth Outcome	Description
Market Reach	Revenue growth	Ability to transact beyond local markets

Source: Compiled by the authors based on evidence from Central Bank of Nigeria (2022), World Bank (2020), and Ozili (2018).

Conclusion and Recommendations

This study provides a comprehensive understanding of how entrepreneurial adoption of digital financial innovations (DFIs) influences the growth of rural SMEs in northern Nigeria. Drawing on qualitative documentary and policy analysis and an integrated theoretical framework combining the Technology Acceptance Model (TAM), Diffusion of Innovation (DOI) theory, and Financial Inclusion Theory, the study demonstrates that DFIs, particularly digital payment systems and mobile banking, offer transformative potential for rural enterprises. Adoption enhances financial management, operational efficiency, market access, and access to working capital, thereby addressing persistent barriers associated with financial exclusion.

However, adoption is not automatic. Structural constraints, including inadequate digital infrastructure, low digital literacy, limited awareness, perceived complexity, and trust concerns, moderate the extent to which rural entrepreneurs embrace DFIs. Analysis through TAM shows that perceived usefulness drives adoption, but perceived ease of use is influenced by social and institutional contexts, while DOI highlights the critical role of peer influence, community observability, and institutional support in facilitating diffusion. Financial Inclusion Theory situates these findings within a broader developmental perspective, illustrating how expanded access to reliable financial services strengthens enterprise resilience, productivity, and growth.

The findings have numerous practical implications. Policymakers, financial institutions, and fintech providers should prioritise digital literacy and capacity-building initiatives, expand rural infrastructure, implement trust-enhancing measures, and leverage peer networks to encourage adoption. Theoretically, this study extends TAM and DOI by demonstrating how environmental, social, and infrastructural factors interact with individual perceptions to shape technology adoption

and SME growth outcomes in rural, resource-constrained contexts. Hence, future research could build on these insights using primary field studies or mixed methods designs to validate and deepen understanding of the mechanisms linking DFIs to rural enterprise performance. Overall, the study contributes context-sensitive evidence to the literature on digital finance, rural entrepreneurship, and development policy, offering actionable guidance for promoting inclusive SME growth in Nigeria and similar developing economies.

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FROM RESOURCE-BASED VIEW TO DIGITAL RESOURCE VIEW: RE-THEORIZING
COMPETITIVE ADVANTAGE IN THE AGE OF DIGITAL RESOURCES

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Abstract

The Resource-Based View (RBV) has traditionally explained competitive advantage through firm-specific resources that are valuable, rare, inimitable, and non-substitutable. While this framework has been influential, it is increasingly challenged by the rise of digitally embedded resources whose properties differ fundamentally from those assumed under RBV. Digital resources such as data, platforms, analytics, and algorithmic systems are scalable, recombining, and continuously evolving, thereby limiting the explanatory power of static resource assumptions. This paper advances a theoretical shift from RBV to the Digital Resource View (DRV) as a more appropriate lens for understanding competitive advantage in the digital economy. The study conceptualizes digital resources as strategically configured assets whose value emerges from their integration, orchestration, and dynamic deployment within organizational processes. Extending the DRV framework, the paper identifies key mechanisms digital value creation, digital rareness, uncertainty-driven imitation barriers, and normative digital pressure that account for heterogeneity in firm performance in digitally transforming environments. The analysis demonstrates that competitive advantage increasingly depends not on resource ownership alone but on firms' capabilities to continuously reconfigure digital resources in response to technological and institutional change. The paper contributes to strategic management and information systems literature by providing a refined theoretical foundation for examining digital-era competitive advantage and guiding future empirical research.

Keywords: Resource-Based View; Digital Resource View; Digital Resources; Competitive Advantage; Digital Transformation; Strategic Capabilities

Introduction

Over the past three decades, the Resource-Based View (RBV) has served as one of the most influential theoretical frameworks for explaining competitive advantage in strategic management. By emphasizing firm-specific resources that are valuable, rare, inimitable, and non-substitutable, RBV shifted scholarly attention away from industry structure toward internal sources of advantage (Barney, 2001; Barney & Arikan, 2005). This perspective has generated a vast body of empirical and conceptual research and continues to shape how scholars and practitioners understand value creation, strategic positioning, and performance heterogeneity among firms' (Barney et al., 2021).

However, the contemporary competitive landscape is increasingly shaped by digital resources such as data, platforms, analytics systems, algorithms, and digitally embedded organizational routines. These resources differ fundamentally from the traditional assets and capabilities upon which RBV was originally built. Digital resources are scalable, recombining, often non-rivalrous, and continuously evolving, enabling firms' to reconfigure value creation processes at unprecedented speed (Amit & Han, 2017; Isaksson & Wennberg, 2016). As digitalization accelerates across industries and economies, questions arise as to whether RBV's core assumptions remain sufficient for explaining competitive advantage in such environments.

A growing body of scholarship has highlighted conceptual tensions between RBV and the realities of digital competition. Critics argue that RBV's emphasis on relatively stable resource heterogeneity and ownership-based rareness is ill-suited to contexts where digital resources can be widely accessed, rapidly replicated, and jointly created across organizational boundaries (El Shafeey & Trott, 2014; Madhani, 2010; Cuthbertson & Furseth, 2022). Moreover, learning-oriented and data-driven resources challenge RBV's static treatment of imitation barriers, as advantage increasingly depends on ongoing recombination, adaptation, and contextual deployment rather than on resource possession alone (Helfat et al., 2023).

These limitations have prompted renewed calls to re-theorize competitive advantage in ways that more accurately reflect the distinctive properties of digital resources. Rather than abandoning RBV altogether, recent work emphasizes the need to extend and refine its core insights to accommodate new technological contexts, new forms of value creation, and new mechanisms of sustainability (Iliyas & Barca, 2025; Barney & Mackey, 2016). In this regard, digitalization represents not merely an

empirical anomaly but a theoretical inflection point that necessitates a re-examination of what constitutes a strategic resource in the contemporary economy.

Responding to this challenge, the Digital Resource View (DRV) has emerged as a novel theoretical perspective that reconceptualizes resources under conditions of digital disruption. Building on the foundational logic of RBV while addressing its digital-era limitations, the DRV emphasizes resource configuration, orchestration, and contextual embeddedness rather than static ownership (Ferreira, et al., 2025; Adamu, 2025a). The DRV introduces new explanatory mechanisms such as digital value creation, digital rareness, uncertainty-driven imitation, and normative digital pressure that better capture how competitive advantage is generated and sustained in digitally transforming environments. While the Digital Resource View (DRV) has been recently articulated in emerging scholarship, this study does not rely solely on prior formulations but instead integrates insights from broader streams of literature, including digital strategy, information systems, and innovation studies. Foundational works on digital platforms, socio-technical systems, and resource recombination (Bharadwaj et al., 2013; Yoo et al., 2010; Nambisan et al., 2019; Amit & Han, 2017) are synthesized to ensure that the DRV framework is theoretically grounded beyond a single line of inquiry. This approach enhances the robustness and generalizability of the proposed framework.

Against this backdrop, the purpose of this paper is to re-theorize competitive advantage by transitioning from the Resource-Based View to the Digital Resource View. Rather than focusing on a specific technology, the paper develops a general theoretical argument explaining why digital resources require a distinct analytical lens and how DRV offers a more appropriate foundation for understanding advantage in the digital age.

The paper makes three key contributions. First, it provides a structured critique of RBV's limitations in the context of digital resources, synthesizing long-standing and emerging criticisms within a coherent theoretical narrative. Second, it advances the DRV as a generalizable framework for explaining competitive advantage in digitally intensive environments, thereby contributing to the renewal of resource-based theory. Third, it offers a conceptual foundation to guide future empirical research on digital resources across industries and economies, particularly in contexts undergoing rapid digital transformation. The remainder of the paper proceeds by reviewing RBV foundations, examining its digital-era limitations, introducing the DRV framework, and re-theorizing competitive advantage through a DRV lens.

Resource-Based View (RBV): Foundations and Core Assumptions

Origins and Evolution of the Resource-Based View

The Resource-Based View (RBV) emerged as a dominant theoretical perspective in strategic management in response to limitations of industry-structure explanations of firm performance. Early RBV scholarship redirected attention from external market conditions to internal firm resources as the primary determinants of competitive advantage. Central to this shift was the argument that firms' are heterogeneous bundles of resources and capabilities, and that such heterogeneity can persist over time, leading to performance differentials among firms' (Barney, 2001; Barney & Arikan, 2005). Over the years, RBV has evolved into a broad theoretical tradition encompassing strategy, human resources, entrepreneurship, and innovation research, becoming one of the most cited and applied frameworks in management studies (Barney et al., 2021).

As the RBV matured, scholars refined its conceptual foundations and clarified its scope. The theory has been applied to explain diverse phenomena, including firm performance, strategic positioning, human capital development, and organizational capabilities. Despite ongoing debates about its boundaries and operationalization, RBV has remained influential due to its parsimonious logic and its focus on firm-specific sources of value creation (Barney & Mackey, 2016). Importantly, RBV was developed in a predominantly industrial and pre-digital context, where resources were relatively stable, bounded within firms', and accumulated over time.

Core Assumptions of RBV

At the heart of RBV are two fundamental assumptions: resource heterogeneity and resource immobility. Resource heterogeneity posits that firms' possess different bundles of resources and capabilities, even within the same industry, while resource immobility suggests that these resources are imperfectly transferable across firms (Barney, 2001). Together, these assumptions explain why some firms' consistently outperform others despite operating under similar market conditions.

Building on these assumptions, RBV formalizes the VRIN framework, which identifies resources as sources of sustained competitive advantage if they are valuable, rare, inimitable, and non-substitutable. Valuable resources enable firms' to exploit opportunities or neutralize threats; rare resources are not widely possessed by competitors; inimitable resources are difficult to replicate due to factors such as causal ambiguity, path dependence, or social complexity; and non-substitutable resources cannot be easily replaced by strategically equivalent alternatives (Barney, 2001; Barney &

Arikan, 2005). This logic has served as the cornerstone of RBV-based explanations of competitive advantage.

RBV and the Logic of Competitive Advantage

RBV conceptualizes competitive advantage as a relatively stable outcome that arises when firms' control resources that competitors cannot easily acquire or imitate. The sustainability of advantage depends largely on the effectiveness of imitation barriers, which protect valuable and rare resources from erosion. These barriers are typically rooted in historical conditions, complex social relationships, tacit knowledge, and causal ambiguity, making it difficult for rivals to identify and replicate the sources of success (Barney, 2001; Madhani, 2010).

In this framework, value creation and value appropriation are closely linked to resource ownership and control. Firms' that possess superior resources are assumed to appropriate rents generated from their deployment, while competitors without access to similar resources are unable to erode these advantages quickly. As a result, RBV places strong emphasis on the internal accumulation and protection of strategic resources as the primary route to long-term performance superiority (Barney et al., 2021).

Enduring Contributions and Theoretical Strengths of RBV

Despite subsequent critiques, RBV's contributions to strategic management theory are substantial. It provided a coherent explanation for persistent performance differences, offered a firm-centric alternative to industry-based theories, and stimulated extensive empirical research across multiple domains (Barney & Mackey, 2016; Helfat et al., 2023). The theory also influenced related perspectives, including the knowledge-based view and dynamic capabilities, which sought to address specific limitations while retaining RBV's core insights.

Importantly, RBV established a common language resources, capabilities, imitation, and sustainability that continues to shape contemporary strategy debates. These strengths explain why RBV remains a foundational reference point even as scholars explore new theoretical lenses. However, as the next section argues, the very assumptions that underpinned RBV's success also constrain its explanatory power in the context of digital resources, thereby motivating the transition toward the Digital Resource View.

Critiques and Limitations of the Resource-Based View in the Digital Era

Static Resource Heterogeneity in a Dynamic Digital Environment

A central critique of the Resource-Based View (RBV) in the digital era concerns its reliance on relatively static assumptions of resource heterogeneity. RBV presumes that differences in firm performance persist because resources are unevenly distributed and remain difficult to replicate over time (Barney, 2001). However, digital resources such as software platforms, data analytics tools, and cloud infrastructure are characterized by rapid diffusion, scalability, and declining marginal costs, which undermine the durability of heterogeneity assumed under RBV (Amit & Han, 2017; Isaksson & Wennberg, 2016). As a result, firms' operating in digitally intensive environments often have access to similar technological inputs, yet experience markedly different outcomes, suggesting that heterogeneity increasingly resides in *how* resources are configured rather than *what* resources are owned.

Ownership-Centric Logic and the Rise of Shared Digital Resources

RBV's traditional emphasis on resource ownership and control presents another limitation in the context of digitalization. Many digital resources are not exclusively owned by firms' but are instead accessed through platforms, ecosystems, and inter-organizational arrangements. Cloud computing, open-source software, and data-sharing partnerships blur firm boundaries and weaken RBV's assumption that strategic resources are firm-bound and immobile (Cuthbertson & Furseth, 2022). In such settings, competitive advantage cannot be adequately explained by ownership alone, as firms' frequently derive value from shared or co-created digital resources whose strategic relevance depends on integration and orchestration rather than exclusive possession.

Inadequacy for Learning-Oriented and Data-Driven Resources

RBV's also struggles to account for learning-oriented and data-driven resources, which evolve continuously through use. Artificial intelligence systems, analytics capabilities, and algorithmic models improve as they interact with data and users, making their value inherently dynamic and path-dependent (Papagiannidis et al., 2021; Perifanis & Kitsios, 2023). RBV's focus on resource stocks and initial conditions provides limited insight into how such resources generate increasing returns through learning effects and recombination. Consequently, RBV's underestimates the strategic significance of ongoing resource reconfiguration, which has become a defining feature of digital competition.

Static Imitation Barriers and the Problem of Digital Replicability

Another key limitation lies in RBV's treatment of imitation barriers as largely static and structurally embedded. Traditional RBV's explanations emphasize causal ambiguity, social complexity, and historical path dependence as sources of inimitability (Barney, 2001; Madhani, 2010). While these mechanisms remain relevant, they are insufficient for explaining imitation dynamics in digital contexts where technologies can be rapidly copied or substituted. Digital resources often exhibit high technical replicability, yet firms continue to experience differential performance outcomes. This paradox suggests that imitation barriers in the digital era are increasingly shaped by uncertainty, complexity, and continuous change rather than by static protection mechanisms alone (Marzi, 2022; Matsunaga, 2024).

Limited Attention to Institutional and Contextual Forces

RBV' has also been criticized for its limited engagement with institutional and contextual forces that shape resource deployment and value realization. Digital competition is deeply influenced by regulatory frameworks, industry standards, ethical norms, and societal expectations surrounding data use, privacy, and digital responsibility (Bennich, 2024; Schrödter & Weißenberger, 2024). These forces condition how digital resources are adopted, configured, and legitimized, yet they remain largely peripheral in traditional RBV's formulations. As digitalization intensifies, neglecting such contextual pressures limits RBV's explanatory power and practical relevance.

Summary of RBV's Limitations and the Need for Theoretical Renewal

Taken together, these critiques highlight a growing misalignment between RBV's foundational assumptions and the realities of digital competition. While RBV's continues to offer valuable insights into the role of firm-specific resources, its static, ownership-centric, and internally focused logic constrains its ability to explain value creation and sustainability in digitally transforming environments. These limitations do not invalidate RBV's but rather signal the need for theoretical renewal one that preserves RBV's core insight while adapting it to the distinctive properties of digital resources. This need sets the stage for the emergence of the Digital Resource View as a more appropriate lens for re-theorizing competitive advantage in the age of digital resources.

Methodology

Research Design and Philosophical Orientation

This study adopts a conceptual and theory-development research design, consistent with its objective of re-theorizing competitive advantage in the context of digital resources. Rather than testing

hypotheses empirically, the paper seeks to refine, extend, and integrate existing theoretical perspectives to offer a coherent and analytically rigorous framework. The research is grounded in an interpretive and analytical tradition, which is commonly employed in theory-building studies within strategic management and information systems research (Barney & Mackey, 2016; Helfat et al., 2023).

Theory Synthesis and Analytical Approach

The methodological approach involves a systematic synthesis of extant literature on the Resource-Based View (RBV), digital strategy, and emerging digital resource scholarship. Foundational RBV texts were examined to identify core assumptions, mechanisms, and explanatory boundaries, while recent digitalization and innovation studies were reviewed to uncover conceptual tensions and gaps. Through an iterative process of comparison and abstraction, the study identifies where RBV assumptions diverge from digital-era realities and articulates how the Digital Resource View (DRV) addresses these divergences.

This synthesis follows a theory extension logic, whereby an established theory is adapted to new contexts without discarding its core insights. The DRV is thus positioned as an evolutionary refinement of RBV's rather than a competing or replacement theory. Comparative analysis between RBV and DRV forms a central methodological tool, enabling the study to systematically contrast their assumptions, explanatory mechanisms, and implications for competitive advantage.

Conceptual Development and Framework Construction

The development of the DRV framework proceeded through a structured conceptualization process. First, the defining characteristics of digital resources such as scalability, recombability, embeddedness, and uncertainty were identified from the literature. Second, these characteristics were mapped onto existing resource-based constructs to assess points of alignment and tension. Third, new conceptual mechanisms digital value creation, digital rareness, uncertainty-driven imitation, and normative digital pressure were articulated to explain how competitive advantage emerges under digital conditions.

Throughout this process, emphasis was placed on construct clarity and boundary specification, ensuring that DRV concepts are analytically distinct from related constructs such as IT capability, dynamic capabilities, or knowledge-based resources. This approach enhances the internal coherence of the framework and facilitates future empirical operationalization.

Validity, Rigor, and Theoretical Contribution

To enhance theoretical rigor, the study adheres to established criteria for high-quality conceptual research, including logical consistency, parsimony, and explanatory relevance. Propositions and arguments are grounded in well-established literature and supported by recent empirical and conceptual insights. The framework is evaluated against its ability to address known limitations of RBV and to provide novel explanatory power in digitally intensive contexts.

Rather than offering prescriptive generalizations, the study aims to generate theoretically informed insights that can guide subsequent empirical research. And clearly articulating these assumptions, mechanisms, and boundaries, the methodology ensures that the DRV framework can be tested, refined, and extended in future studies across different industries and institutional environments.

Conceptual Development of the Study (RBV → DRV)

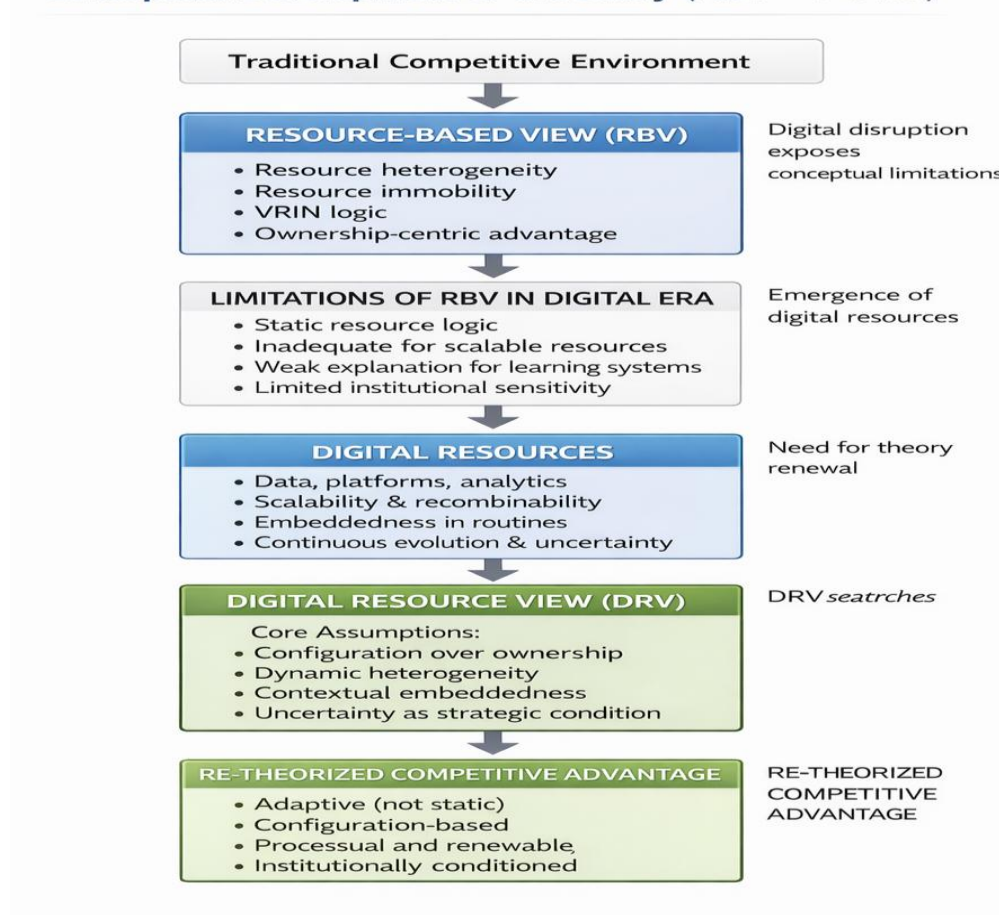


Figure 1 Conceptual Development

Notwithstanding its theoretical contributions, this study is subject to limitations inherent in conceptual research. First, the absence of empirical testing within this paper limits the ability to validate the

proposed DRV mechanisms across different contexts and industries. Second, the framework relies on secondary literature and analytical reasoning, which may not fully capture the complexity of real-world digital resource configurations. Third, while the study emphasizes generalizability, the applicability of DRV may vary across sectors with differing levels of digital intensity.

These limitations, however, are consistent with theory-building research and highlight the need for future empirical studies to operationalize, test, and refine the DRV framework using quantitative and qualitative methodologies.

Emergence of Digital Resources and the Need for Theoretical Renewal

The Distinctive Nature of Digital Resources

The increasing centrality of digitalization in organizational strategy has given rise to a class of resources whose characteristics differ fundamentally from those traditionally examined under the Resource-Based View (RBV). Digital resources including data, software, platforms, analytics systems, and digitally embedded routines are inherently scalable, recombining, and often non-rivalrous, enabling firms to deploy them across multiple activities without proportional increases in cost (Isaksson & Wennberg, 2016; Amit & Han, 2017). Unlike physical or location-bound assets, digital resources can be replicated, transferred, and integrated across organizational boundaries with relative ease, challenging RBV's assumptions regarding immobility and durability of heterogeneity. For instance, firms such as Amazon and Netflix demonstrate how competitive advantage arises not from exclusive ownership of digital technologies, but from the configuration of data, algorithms, and infrastructure into integrated systems. These firms leverage continuous data feedback and algorithmic learning to refine operations and customer experiences, illustrating how digital resources evolve and generate value through use rather than static possession.

Moreover, digital resources are deeply embedded within organizational processes, technologies, and ecosystems. Their value is rarely intrinsic; instead, it emerges through interaction with complementary resources, user practices, and institutional contexts (Cuthbertson & Furseth, 2022). This embeddedness implies that competitive advantage increasingly depends on how digital resources are configured and orchestrated rather than on their standalone characteristics. As such, digital resources demand a theoretical perspective that foregrounds configuration, interaction, and context as central explanatory elements.

Digital Value Creation through Resource Reconfiguration

A defining feature of digital resources is their capacity to generate value through continuous reconfiguration. Digital technologies enable firms to recombine existing resources in novel ways, supporting new business models, service offerings, and organizational processes (Amit & Han, 2017). Value creation in digital environments is therefore less about accumulating superior resources and more about dynamically reconfiguring resource portfolios in response to technological and market change (Ferreira et al., 2025).

This logic of recombination undermines RBV's static view of value creation, which emphasizes the exploitation of pre-existing resource advantages. In contrast, digital value creation is iterative, experimental, and adaptive, often unfolding through cycles of learning, feedback, and adjustment. Firms that excel in digital contexts are those capable of sensing opportunities, recombining resources rapidly, and scaling successful configurations across organizational boundaries. These dynamics necessitate a theoretical renewal that accounts for processual and temporal dimensions of resource use, rather than treating resources as fixed inputs into strategy.

Uncertainty, Complexity, and the Changing Basis of Advantage

The rise of digital resources has also altered the nature of uncertainty and complexity in competitive environments. Digital systems operate under conditions of rapid technological change, data volatility, and evolving user behaviors, making outcomes difficult to predict and causal relationships difficult to observe (Marzi, 2022; Matsunaga, 2024). Under such conditions, competitive advantage is increasingly shaped by firms' abilities to navigate uncertainty rather than by their capacity to protect static resources from imitation.

In digital contexts, imitation barriers arise not primarily from exclusivity or legal protection but from complexity, opacity, and continuous change. Even when competitors can access similar digital technologies, they may struggle to replicate the performance outcomes achieved by leading firms due to differences in learning trajectories, contextual knowledge, and resource interactions. This shift in the basis of advantage highlights the inadequacy of RBV's traditional imitation logic and underscores the need for a framework that explicitly integrates uncertainty as a core explanatory mechanism.

Institutional and Ecosystem Forces in Digital Competition

Another defining feature of digital resources is their entanglement with institutional and ecosystem-level forces. Digital competition unfolds within regulatory regimes, industry standards, ethical norms, and platform ecosystems that shape how resources are deployed and valued (Bennich, 2024; Schrödter

& Weißenberger, 2024). These forces influence not only adoption decisions but also the legitimacy, governance, and scalability of digital resources.

RBV's limited engagement with such contextual pressures constrains its ability to explain competitive advantage in digital environments, where legitimacy and compliance often condition value realization. The increasing prominence of data protection laws, digital compliance requirements, and responsible digitalization norms illustrates how institutional forces shape the strategic use of digital resources. Any renewed theory of competitive advantage must therefore integrate contextual and normative dimensions alongside firm-level resource considerations.

Toward a Renewed Theory of Competitive Advantage

Collectively, the distinctive properties of digital resources their scalability, recombability, embeddedness, and uncertainty-driven dynamics signal the need for a renewed theoretical lens. While RBV provided a foundational understanding of how firm-specific resources generate advantage, its assumptions are increasingly misaligned with the realities of digital competition. Rather than rendering RBV obsolete, the emergence of digital resources calls for a conceptual evolution that preserves RBV's core insight while adapting it to contemporary conditions.

This need for theoretical renewal provides the intellectual foundation for the Digital Resource View (DRV). By reconceptualizing resources in terms of configuration, orchestration, and contextual embeddedness, the DRV offers a more suitable framework for explaining competitive advantage in the age of digital resources. The following section introduces the DRV in detail, outlining its conceptual foundations, assumptions, and mechanisms, and positioning it as a necessary extension of resource-based theory.

Digital Resource View (DRV): A New Theoretical Lens

Conceptual Foundations of the Digital Resource View

The Digital Resource View (DRV) emerges as a theoretical response to the growing inadequacy of traditional resource-based explanations in digitally intensive environments. While building on the foundational insight of the Resource-Based View (RBV) that internal resources matter for competitive advantage, the DRV reconceptualizes what constitutes a strategic resource under conditions of digital disruption. Rather than treating digital technologies as extensions of conventional assets, the DRV positions digital resources as strategically configured, context-dependent, and dynamically

reconfigurable entities whose value is realized through orchestration rather than ownership (Adamu, 2025a; Adamu, 2025b).

At its core, the DRV shifts analytical focus from the *stock* of resources held by a firm to the *configuration and deployment* of digital resources within organizational and institutional contexts. Digital resources are viewed not as isolated inputs but as components of broader socio-technical systems embedded in routines, platforms, ecosystems, and regulatory environments. This perspective aligns with the realities of digital competition, where value creation increasingly depends on integration, timing, and adaptability rather than on exclusivity.

Key Assumptions Distinguishing DRV from RBV

The DRV is distinguished from RBV by several foundational assumptions. First, the DRV assumes dynamic heterogeneity, recognizing that differences in digital resource configurations emerge continuously through learning, recombination, and adaptation rather than remaining fixed over time. Competitive advantage is therefore viewed as fluid and evolving, shaped by firms' ongoing capabilities to reconfigure digital resources in response to change.

Second, the DRV deemphasizes ownership-centric logic in favor of configuration-centric logic. Digital resources may be shared, accessed, or co-created across organizational boundaries, yet still generate firm-specific advantages when configured in unique and contextually embedded ways. This assumption reflects the platformized and ecosystem-based nature of digital competition, where control is exercised through orchestration rather than possession.

Third, the DRV explicitly incorporates contextual embeddedness into its explanatory framework. Digital resources are understood to operate within institutional, regulatory, and normative environments that shape their legitimacy and effectiveness. Competitive advantage thus depends not only on internal resource configurations but also on alignment with external expectations and constraints.

DRV Mechanisms of Competitive Advantage

Central to the DRV are four interrelated mechanisms that explain how digital resources generate and sustain competitive advantage. The first is digital value creation, which refers to the enhancement of organizational outcomes through digital resource configurations that improve efficiency, decision quality, innovation, and strategic responsiveness. Digital value is realized through embedding digital

resources into workflows and decision processes rather than through standalone technological adoption.

The second mechanism is digital rareness, which reconceptualizes rareness as configuration-specific uniqueness rather than technological scarcity. In digital contexts, rareness arises from idiosyncratic combinations of data, systems, routines, and human expertise that are difficult to standardize or replicate across firms (Adamu, 2025a).

The third mechanism, uncertainty-driven imitation, reflects the role of complexity, opacity, and continuous change in sustaining advantage. Digital resources often operate under conditions of high uncertainty, where causal relationships between inputs and outcomes are difficult to observe. This uncertainty creates dynamic imitation barriers that protect competitive advantages even when underlying technologies are widely accessible.

Finally, normative digital pressure captures the influence of institutional forces such as regulations, industry standards, and societal expectations on digital resource deployment. Rather than being peripheral constraints, these pressures shape how digital resources are configured, governed, and legitimized, thereby conditioning their value-creation potential (Adamu, 2025b).

DRV as a Framework for Theoretical Renewal

Taken together, these assumptions and mechanisms position the DRV as a comprehensive framework for re-theorizing competitive advantage in the digital era. The DRV does not reject RBV's core insight that firm-specific resources matter; instead, it extends and refines this insight to reflect the distinctive properties of digital resources. By foregrounding configuration, uncertainty, and contextual embeddedness, the DRV offers a more nuanced and empirically relevant explanation of competitive advantage in digitally transforming environments.

In doing so, the DRV provides a conceptual bridge between traditional strategy theory and contemporary digital phenomena. It establishes a foundation for integrating emerging technologies, platforms, and data-driven capabilities into resource-based explanations of firm performance. The following section builds on this foundation by explicitly re-theorizing competitive advantage through a comparative analysis of RBV and DRV, highlighting how the DRV reshapes our understanding of advantage in the age of digital resources.

Distinguishing DRV from Existing Theoretical Perspectives

While the Digital Resource View (DRV) shares conceptual proximity with established perspectives such as the Resource-Based View (RBV), Dynamic Capabilities Theory (DCT), and the Knowledge-Based View (KBV), it differs in its core unit of analysis and explanatory focus. RBV emphasizes resource possession and the conditions under which resources yield sustained advantage, while DCT focuses on the processes through which firms reconfigure resources in response to change (Teece et al., 1997; Teece, 2018). In contrast, the DRV shifts attention to the structural and interactional properties of digital resources themselves, conceptualizing them as dynamic systems whose value emerges through configuration, recombination, and contextual embeddedness.

Unlike the KBV, which centers on knowledge as the primary strategic resource (Grant, 1996), the DRV extends beyond human cognition to incorporate algorithmic, data-driven, and platform-based resources that exhibit autonomous learning and system-level behavior. Furthermore, while dynamic capabilities explain how firms adapt, the DRV explains why adaptation is structurally necessary in digital environments due to the evolving nature of digital resources.

Re-theorizing Competitive Advantage: From RBV to DRV

Comparative Logic of Competitive Advantage under RBV and DRV

The transition from the Resource-Based View (RBV) to the Digital Resource View (DRV) represents a fundamental shift in how competitive advantage is conceptualized and explained. Under RBV, competitive advantage is rooted in the possession and protection of valuable, rare, inimitable, and non-substitutable resources that are imperfectly mobile across firms (Barney, 2001). Advantage is largely static, sustained through imitation barriers that prevent rivals from replicating resource endowments. In contrast, the DRV reframes competitive advantage as a dynamic outcome of digital resource configuration, emphasizing how resources are combined, deployed, and reconfigured over time rather than merely owned.

While RBV focuses on resource stocks, the DRV emphasizes resource flows and configurations. Digital resources such as data, platforms, and analytics systems derive their strategic value from continuous recombination and integration within organizational processes and ecosystems. As a result, competitive advantage under DRV is less about isolating resources from competitors and more about maintaining superior orchestration capabilities in environments characterized by rapid technological change.

From Static Sustainability to Adaptive Advantage

A central implication of the DRV is the shift from sustained competitive advantage as conceptualized under RBV to adaptive competitive advantage in digital contexts. RBV assumes that once a firm secures a VRIN resource position, advantage can be maintained over long periods. However, digital environments are marked by rapid innovation cycles, shortening the lifespan of any single advantage. The DRV responds to this reality by conceptualizing advantage as inherently temporary but renewable through ongoing digital resource reconfiguration.

Under DRV logic, firms sustain advantage not by freezing competitors out of resource access, but by continuously adapting digital resource configurations faster and more effectively than rivals. This reconceptualization aligns competitive advantage with learning, experimentation, and responsiveness, highlighting adaptability as a core strategic outcome in the digital era.

Reinterpreting Rareness and Imitation in Digital Contexts

The DRV also reinterprets the concepts of rareness and imitation, which are central to RBV explanations of advantage. In digital environments, rareness no longer primarily reflects scarcity of technology or exclusivity of ownership. Instead, digital rareness arises from unique configurations of digital resources embedded in firm-specific routines, data contexts, and learning trajectories. Even widely available technologies can yield rare outcomes when configured in idiosyncratic ways.

Similarly, imitation barriers under DRV are not static or structural but uncertainty-driven and dynamic. Algorithmic opacity, data complexity, and continuous system evolution obscure causal links between digital resource configurations and performance outcomes. This uncertainty makes imitation costly and imperfect, thereby sustaining advantage despite high levels of technological diffusion. In this sense, DRV shifts the focus from preventing imitation to managing complexity and uncertainty as strategic assets.

The Role of Context and Institutions in Competitive Advantage

A further critical dimension in re-theorizing competitive advantage within the DRV framework is the explicit integration of institutional and contextual forces into the analysis. Unlike RBV, which treats resources largely as internally controlled assets, the DRV recognizes that digital resources operate within regulatory regimes, industry standards, and societal norms that shape their deployment and value realization. Competitive advantage thus depends not only on internal capabilities but also on the firm's ability to align digital resource configurations with external expectations and legitimacy requirements.

This contextualization is particularly important in digitally transforming and emerging economies, where regulatory frameworks, infrastructural constraints, and normative pressures significantly influence digital competition. The DRV incorporates normative digital pressure into its explanatory logic, thereby providing a more comprehensive account of how competitive advantage is shaped and sustained across diverse institutional contexts.

Toward a Revised Understanding of Competitive Advantage

Taken together, the DRV advances a revised understanding of competitive advantage that is more consistent with the realities of digital competition. Advantage is no longer viewed as a stable outcome derived from protected resource positions, but as a processual and relational phenomenon that emerges through continuous digital resource configuration, uncertainty management, and contextual alignment. This reconceptualization preserves RBV's core insight—that resources matter—while extending it to account for the distinctive properties of digital resources.

Re-theorizing competitive advantage through the DRV, this study provides a coherent framework for integrating digital resources into strategic management theory. The DRV thus serves not only as an extension of RBV but as a necessary evolution that enables scholars and practitioners to better understand competition in the age of digital resources.

Implications of the Digital Resource View Perspective

Theoretical Implications

The Digital Resource View (DRV) offers important implications for the advancement of strategic management theory. First, it contributes to the renewal of resource-based theory by addressing longstanding criticisms of RBV related to static resource assumptions, ownership-centric logic, and limited contextual sensitivity. Accordingly, the DRV reorients analysis away from mere resource possession toward the configuration, orchestration, and contextual embeddedness of digital resources, thereby offering a more dynamic and empirically grounded explanation of competitive advantage in digitally intensive environments.

Second, the DRV reframes core RBV concepts such as rareness, imitation, and sustainability in ways that better reflect digital realities. Rareness is no longer tied primarily to scarcity of resources but to the uniqueness of digital configurations and learning trajectories. Similarly, imitation barriers are reinterpreted as uncertainty-driven and evolving, rather than as fixed structural constraints. This

reconceptualization advances theoretical precision and opens new avenues for studying how competitive advantage is created and renewed over time.

Third, the DRV strengthens the integration of strategic management and information systems research. Hence, explicitly theorizing digital resources as strategic assets rather than operational tools, the DRV provides a common conceptual language for bridging strategy, digital innovation, and IS scholarship. This integration responds to recent calls for theories that can accommodate new technologies, new organizational forms, and digitally enabled value creation processes.

Managerial Implications

From a managerial perspective, the DRV underscores the need to rethink how digital resources are evaluated and managed. Rather than focusing on technology acquisition or benchmarking against competitors, managers should prioritize the strategic configuration and orchestration of digital resources within their organizations. Competitive advantage arises not from adopting the same digital tools as rivals but from embedding those tools into firm-specific routines, data contexts, and decision processes.

The DRV also highlights the importance of continuous reconfiguration. Managers operating in digital environments must treat advantage as adaptive rather than permanent, investing in learning, experimentation, and organizational flexibility. This implies developing governance structures, cross-functional coordination, and digital skills that enable rapid recombination of resources in response to environmental change.

Furthermore, managers must recognize and actively manage normative digital pressures. Regulatory compliance, ethical considerations, and stakeholder expectations are not merely constraints but strategic factors that shape digital value creation. Firm's that proactively align digital resource configurations with institutional expectations are more likely to achieve legitimacy and sustain advantage over time.

Policy and Institutional Implications

The DRV also carries important implications for policymakers and institutional actors. First, it suggests that policies aimed at enhancing digital competitiveness should move beyond technology diffusion toward capability and ecosystem development. Providing access to digital infrastructure is necessary but insufficient; institutions must also support skills development, data governance

frameworks, and organizational learning capabilities that enable effective digital resource configuration.

Second, the DRV emphasizes the role of institutional alignment in digital value realization. Regulatory clarity, ethical standards, and supportive digital governance frameworks can enhance firms' ability to deploy digital resources strategically. Conversely, fragmented or uncertain institutional environments may constrain the value-creation potential of digital resources, particularly in emerging and digitally transforming economies.

Finally, the DRV provides a framework for understanding how national and sectoral digital strategies influence firm-level competitiveness. Such that, shaping normative digital pressures, policymakers indirectly affect how digital resources are configured and leveraged within organizations, highlighting the interdependence between firm strategy and institutional context.

Conclusion and Future Research Directions

This paper set out to re-theorize competitive advantage in response to the growing dominance of digital resources in contemporary organizations. While the Resource-Based View (RBV) has long provided a powerful explanation of firm-level performance differences, its core assumptions regarding resource stability, ownership, and imitation are increasingly misaligned with the realities of digital competition. Systematically examining these limitations and advancing the Digital Resource View (DRV) as an extension of RBV, the study offers a renewed theoretical foundation for understanding competitive advantage in the age of digital resources.

The central contribution of the paper lies in conceptualizing competitive advantage as a dynamic and adaptive outcome shaped by digital resource configuration, uncertainty management, and contextual embeddedness. Through the DRV, competitive advantage is no longer understood as the protection of static resource positions, but as a process that unfolds through continuous recombination, learning, and alignment with institutional environments. This reconceptualization preserves RBV's foundational insight that resources matter, while refining its explanatory logic to reflect the distinctive properties of digital resources.

Beyond its theoretical contribution, the paper establishes a clear agenda for future research. Empirical studies are needed to operationalize DRV constructs and test their relationships across different industries and national contexts. Longitudinal designs would be particularly valuable for examining how digital resource configurations evolve over time and how adaptive advantage is sustained.

Comparative studies between digitally advanced and emerging economies could further illuminate the role of institutional and normative pressures in shaping digital competition. Additionally, future research may integrate the DRV with complementary perspectives such as dynamic capabilities, platform ecosystems, and digital responsibility to further enrich understanding of digital-era strategy. The Digital Resource View provides a timely and necessary evolution of resource-based theory. As digitalization continues to reshape competitive landscapes, the DRV offers scholars and practitioners a robust lens for understanding how competitive advantage is created, renewed, and sustained in the age of digital resources.

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ATM FRAUD AND BANK PROFITABILITY IN NIGERIA: THE MODERATING ROLE OF
CUSTOMER LITERACY

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Abstract

ATM fraud (ATMF) poses a critical threat to Nigerian commercial banks' profitability, with losses exceeding ₦12.5 billion in 2025 according to Nigeria Inter-Bank Settlement System (NIBSS) and Central Bank of Nigeria (CBN) reports. This study investigates the association between ATMF and bank profitability (return on assets and return on equity), examining whether customer literacy moderates this relationship. Using secondary panel data (2015–2025) from CBN, the Nigeria Deposit Insurance Corporation (NDIC), the Economic and Financial Crimes Commission (EFCC), NIBSS, and audited financial reports of Nigeria's five largest banks (GTB, Zenith, Access, UBA, First Bank), the study applies fixed-effects regression and system generalized method of moments (GMM) estimation. Grounded in Routine Activity Theory, results indicate a significant negative association between ATMF and profitability ($\beta = -0.31$ to -0.38 , $p < 0.01$). Customer literacy, measured through financial inclusion indices from CBN/EFCC data, moderates this relationship: the negative association weakens by 15–20% in contexts with higher average customer literacy. The findings suggest that ATMF accounts for approximately 45% of electronic fraud losses, affecting profitability through direct losses, customer reimbursements, and compliance costs that compress net interest margins and erode customer trust. The study extends prior Nigerian fraud–profitability research by testing customer literacy as a moderator using panel estimators. Recommendations include CBN-mandated AI-based fraud detection systems, literacy campaigns through NDIC stakeholder forums, and enhanced inter-agency data sharing with EFCC to strengthen sector resilience.

Keywords: Commercial banks, bank profitability, automated teller machine, electronic banking, fraud, customer literacy, Nigeria

1.0 Introduction

Nigeria's banking sector faces escalating ATM fraud (ATMF) risks amid rapid digitalization and the Central Bank of Nigeria's (CBN) cashless policy initiatives. Electronic transactions surged approximately 80% to ₦1.07 quadrillion between 2023 and 2024, driven by digital innovations from Guaranty Trust Bank (GTB), Zenith Bank, and Access Bank (Bakare et al., 2023). However, this growth has amplified electronic fraud vulnerabilities, with ATMF emerging as the dominant channel. Nigeria Inter-Bank Settlement System (NIBSS) data indicate fraud cases tripled from 17,600 (2019) to 46,126 (2022), with losses exceeding ₦14 billion—primarily attributable to ATM and point-of-sale (POS) skimming, card cloning, and unauthorized withdrawals (NIBSS, 2023). In the first quarter of 2025 alone, 12,347 incidents involving ₦22.27 billion were recorded, representing a 243% value increase from the fourth quarter of 2024 (NIBSS, 2025). The CBN reported a 45% fraud surge in 2024, with 70% linked to digital platforms; four major banks lost \$5.2 million, and Zenith Bank's ATMF-related losses increased thirteen-fold to \$3.4 million (CBN, 2024).

These fraud incidents directly impair bank profitability through stolen funds and indirectly through cybersecurity investments, monitoring costs, legal fees, and customer reimbursements that divert capital from income-generating activities (Ekong-Eyo, 2023). Reputational damage further erodes customer trust, potentially reducing deposit mobilization and loan portfolio growth—core revenue streams (Alinno, 2023). Stricter CBN compliance requirements add audit and penalty burdens that compress net interest margins (CBN, 2025).

While prior Nigerian studies have established associations between electronic fraud and bank performance (Adeyemi & Adeyemi, 2025; Jolaiya, 2024; Yusuf et al., 2023), limited research examines whether customer literacy conditions this relationship. This study extends prior Nigerian fraud–profitability research by testing customer literacy as a moderator using panel estimators, thereby clarifying whether customer awareness and skills alter the fraud–profitability link. Understanding this moderation effect is essential for designing targeted interventions, particularly as Nigeria pursues its Payment Systems Vision 2025 and seeks to balance digital financial inclusion with system security (CBN, 2025).

The remainder of this paper is organized as follows. Section 2 reviews relevant literature on ATM fraud, profitability measures, and empirical evidence, identifying the research gap. Section 3 presents the theoretical framework and develops hypotheses. Section 4 describes the methodology, including data sources, variable measurement, and estimation strategy. Section 5 reports the results, and Section

6 discusses findings and their implications. Section 7 concludes with recommendations and directions for future research.

2.0 Literature Review

2.1 Concept of ATM Fraud in Nigeria

ATM fraud encompasses various criminal activities targeting automated teller machines and their users. In Nigeria, common ATMF types include card skimming (illegally capturing card data through devices attached to ATMs), card swapping (exchanging customers' cards during transactions), cash trapping (blocking the cash dispenser to retrieve money later), and unauthorized withdrawals through compromised PINs (Tade & Adeniyi, 2018; Sinebe & Ikpe, 2023). Criminals increasingly deploy sophisticated skimming devices on ATMs and POS terminals, enabling counterfeit card production and illicit transactions that directly impair bank revenues through mandatory reimbursements, litigation costs, and customer attrition (Sinebe & Ikpe, 2023).

From a Routine Activity Theory perspective (Cohen & Felson, 1979), ATMF incidents represent the convergence of three elements: motivated offenders (fraudsters exploiting technological vulnerabilities), suitable targets (ATM users, particularly those with limited fraud awareness), and the absence of capable guardians (inadequate security measures or user vigilance). This theoretical lens positions customer literacy as a potential guardianship mechanism that disrupts the convergence necessary for fraud occurrence.

2.2 Profitability Measures in Commercial Banks

Commercial bank profitability is conventionally measured through return on assets (ROA) and return on equity (ROE). ROA indicates how efficiently management utilizes bank assets to generate earnings, calculated as net income divided by total assets. ROE measures returns to shareholders, computed as net income divided by shareholders' equity (Uddin, 2022). Both metrics are widely used in Nigerian banking research to capture different dimensions of performance: ROA reflects operational efficiency, while ROE indicates returns to equity investors (Oluwaleye, Kolapo, & Adejayan, 2023). Nigerian banks face profitability pressures from macroeconomic factors (inflation, interest rates, GDP growth), internal determinants (liquidity, capitalization, efficiency), and increasingly, electronic fraud losses (Iwedi & James, 2023). This study employs both ROA and ROE as dependent variables, with ROA serving as the primary measure and ROE used for robustness checks.

2.3 Empirical Evidence of ATM fraud and Bank's Profitability

Empirical studies consistently report negative associations between ATMF and Nigerian bank profitability. Ibrahim and Garba (2020) analyzed selected commercial banks using ex-post facto design and ordinary least squares regression on 2014–2018 secondary data. They reported a significant negative relationship between ATMF incidence and net profit ($\beta = -0.045$, $p < 0.05$), attributed to annual compensation costs averaging ₦500 million per bank, operational disruptions, and customer attrition. CBN data cited showed ATMF losses exceeding ₦1.2 billion in 2018.

Jolaiya (2024) advanced this evidence using panel generalized method of moments (GMM) estimation on 12 deposit money banks (2015–2022), confirming ATMF's significant negative association with ROA and ROE ($\beta = -0.312$, $p < 0.01$). Dynamic panel estimates revealed lagged fraud effects amplifying profitability erosion by 15–20%, with an 8.7% average decline during high-fraud quarters attributed to bad debt provisions and cybersecurity upgrades.

Yusuf et al. (2023) conducted a case study of Access Bank PLC using descriptive statistics and Pearson correlation on 2019–2022 audited statements. ATMF correlated inversely with profit after tax ($r = -0.68$, $p < 0.05$), mediated by reputational damage (12% deposit decline) and increased insurance premiums. Olabamiji (2021) examined 14 listed deposit money banks with fixed-effects regression, finding ATMF volume significantly associated with reduced ROA ($\beta = -0.023$, $p < 0.05$), explaining 62% of profitability variance alongside other factors. Rural ATM vulnerabilities, exacerbated by skimming, were particularly salient.

The Financial Institutions Training Centre (FITC) reported ₦1.4 billion in mobile and ATM fraud during the first quarter of 2025 (43% of total fraud losses), correlating with compressed margins as banks absorb litigation and recovery costs (FITC, 2025). These losses compound operational inefficiencies, reducing net interest margins and investor returns.

Identified Research Gap: Prior Nigerian studies have established robust associations between ATMF and reduced bank profitability using various methodologies, including ordinary least squares (Ibrahim & Garba, 2020), fixed-effects regression (Olabamiji, 2021), and GMM estimation (Jolaiya, 2024). However, these studies have not examined potential moderating factors that might condition the strength of this relationship. Specifically, no study has tested whether customer literacy that is customers' knowledge, skills, and awareness in identifying and mitigating ATM fraud risks moderates the fraud profitability link using panel data and appropriate panel estimators. This gap is

consequential: if customer literacy weakens the negative association between ATMF and profitability, investments in customer education represent a complementary strategy to technical security upgrades. This study addresses this gap by testing customer literacy as a moderator of the ATMF profitability relationship, using Nigerian bank panel data and fixed-effects estimation with interaction terms.

3.0 Theoretical Framework and Hypothesis

3.1 Routine Activity Theory

This study adopts Routine Activity Theory (RAT) as its sole theoretical framework. Originally developed by Cohen and Felson (1979) to explain crime rate trends, RAT posits that predatory crimes occur when three elements converge in time and space: a motivated offender, a suitable target, and the absence of a capable guardian. In the context of ATM fraud, motivated offenders are individuals or organized groups who exploit technological vulnerabilities for financial gain. Suitable targets are ATM users whose cards, PINs, or transactions can be compromised—particularly those with limited fraud awareness or vigilance. Capable guardianship encompasses both technical controls (ATM security features, encryption, monitoring systems) and human factors (customer vigilance, bank staff oversight, law enforcement presence).

RAT is particularly applicable to understanding ATMF in Nigeria's rapidly digitizing banking environment. The CBN's cashless policy has expanded the pool of ATM users (potential targets) while fraudsters develop increasingly sophisticated skimming and cloning techniques (motivated offenders). Security gaps including uneven ATM security standards, limited customer awareness, and enforcement challenges represent absences of capable guardianship. The convergence of these elements creates opportunities for ATMF incidents that ultimately affect bank profitability through direct losses and indirect costs.

3.2 Customer Literacy as guardianship

Within the RAT framework, customer literacy operates as a guardianship mechanism. Literate customers possess knowledge of ATM fraud risks, recognize suspicious devices or behaviors, protect their PINs, and report incidents promptly. This vigilance disrupts the convergence of motivated offenders and suitable targets, potentially reducing both the incidence and impact of successful fraud attempts. Customers with higher literacy effectively serve as "capable guardians" of their own transactions, complementing institutional security measures.

Conversely, customers with limited literacy represent more suitable targets. They may fail to recognize skimming devices, share PINs inadvertently, or delay reporting unauthorized transactions, increasing both fraud likelihood and the severity of losses when incidents occur. From a bank-level perspective, institutions serving customer populations with higher average literacy should experience weaker associations between aggregate ATMF incidence and profitability outcomes, as literate customers reduce both fraud frequency and the per-incident costs (through prompt reporting and mitigation).

3.3 Hypothesis Development

Based on RAT and the empirical literature reviewed, two hypotheses guide this study:

H1: Higher incidence of ATM fraud is negatively associated with bank profitability (ROA and ROE). This hypothesis aligns with consistent findings from prior Nigerian studies (Ibrahim & Garba, 2020; Jolaiya, 2024; Yusuf et al., 2023) and reflects the mechanisms through which ATMF affects profitability: direct financial losses, customer reimbursement costs, regulatory penalties, increased security expenditures, and reputational damage affecting deposit mobilization and loan growth.

H2: Customer literacy moderates the relationship between ATM fraud and bank profitability such that the negative association weakens as average customer literacy increases. From a RAT perspective, higher customer literacy strengthens guardianship, reducing target suitability and potentially mitigating both fraud incidence and the severity of financial impacts when fraud occurs. This moderation hypothesis has not been tested in prior Nigerian studies and represents the primary contribution of this research.

4.0 Methodology

4.1 Data Sources and Samples

This study employs secondary panel data covering the period 2015–2025. The sample comprises Nigeria's five largest commercial banks by asset base: Guaranty Trust Bank (GTB), Zenith Bank, Access Bank, United Bank for Africa (UBA), and First Bank. These institutions collectively account for over 70% of ATM deployments in Nigeria and represent the majority of banking system assets (CBN, 2024; NIBSS, 2025). The panel structure (five banks over eleven years) yields 55 bank-year observations.

Data are drawn from multiple sources:

- Bank-level financial statements (audited annual reports) for profitability measures (ROA, ROE) and bank-specific controls
- Central Bank of Nigeria (CBN) statistical bulletins and fraud reports for industry-level fraud data and regulatory metrics
- Nigeria Inter-Bank Settlement System (NIBSS) fraud reports for transaction volumes and channel-specific fraud incidence
- Nigeria Deposit Insurance Corporation (NDIC) annual reports for supplementary fraud loss data
- Economic and Financial Crimes Commission (EFCC) publications for financial literacy indices and fraud reporting statistics
- National Bureau of Statistics (NBS) for macroeconomic controls (GDP growth, inflation)

4.2 Variable Measurements

4.2.1 Dependent variable: Banks' Profitability

- **Return on Assets (ROA):** Net income after tax divided by total assets. ROA reflects management's efficiency in utilizing bank assets to generate profits.
- **Return on Equity (ROE):** Net income after tax divided by shareholders' equity. ROE indicates returns to equity investors and is used for robustness checks.

Both measures are expressed as percentages and derived from audited financial statements.

4.2.3 Moderator Variable: Customer Literacy

Customer literacy is operationalized using a composite index. Consistent with banking literature, profitability is measured using:

4.2.2 Independent Variable: ATM Fraud (ATMF)

ATM fraud is measured as the natural logarithm of total reported losses from ATM-related fraud incidents (skimming, card cloning, unauthorized withdrawals) for each bank-year. Loss data are obtained from CBN fraud reports, NDIC annual publications, and bank-specific disclosures where available. The logarithmic transformation addresses skewness derived from:

- CBN financial inclusion survey data on customer awareness of fraud risks
- EFCC-reported fraud reporting rates (higher reporting rates interpreted as proxy for literacy)
- State-level adult literacy rates (UNESCO, 2024) weighted by each bank's branch network distribution

The index ranges from 0 to 100, with higher values indicating greater average customer literacy in each bank's customer catchment area. Annual observations are constructed using interpolation between survey years.

4.2.4 Control Variables

Following banking literature (Oluwaleye, Kolapo, & Adejayan, 2023; Iwedi & James, 2023), control variables include:

- **Bank size:** Natural logarithm of total assets
- **Capitalization:** Equity-to-assets ratio
- **Asset quality:** Non-performing loan ratio (NPLs/gross loans)
- **Liquidity:** Liquid assets-to-total assets ratio
- **Efficiency:** Cost-to-income ratio
- **Macroeconomic conditions:** Annual GDP growth rate and inflation rate (from NBS)

4.3 Estimation Strategy

4.3.1 Model Specification

To test H1 (direct effect) and H2 (moderation), we specify the following panel data model:

$$\begin{aligned}
 Profitability_{it} &= \beta_0 + \beta_1 ATM F_{it} + \beta_2 Literacy_{it} + \beta_3 (ATM F_{it} \times Literacy_{it}) + \gamma' X_{it} + \alpha_i + \lambda_t \\
 &+ \varepsilon_{it}
 \end{aligned}$$

where:

- $Profitability_{it}$ is ROA (or ROE) for bank I in year T
- $ATM F_{it}$ is the logarithm of ATM fraud losses
- $Literacy_{it}$ is the customer literacy index
- $ATM F_{it} \times Literacy_{it}$ is the interaction term testing moderation
- X_{it} is a vector of bank-level and macroeconomic controls
- α_i represents bank-specific fixed effects (time-invariant heterogeneity)
- λ_t represents year fixed effects (common time shocks)
- ε_{it} is the error term

All continuous variables are mean-centered before creating interaction terms to reduce multicollinearity (Aiken & West, 1991). The moderation hypothesis (H2) predicts $\beta_3 > 0$: higher literacy weakens the negative association between ATMF and profitability.

4.3.2 Estimation Methods

Two panel estimators are employed:

Fixed Effects (FE) Estimation: The Hausman test ($p < 0.05$) rejects random effects, supporting fixed effects as the appropriate estimator. FE controls for time-invariant unobserved heterogeneity across banks (e.g., corporate culture, management quality, brand reputation). Robust standard errors clustered at the bank level address heteroskedasticity and serial correlation.

System Generalized Method of Moments (GMM): Following Jolaiya (2024), system GMM estimation addresses potential endogeneity concerns: fraud may affect profitability, but less profitable banks might underinvest in security, increasing fraud vulnerability. GMM also accounts for dynamic panel bias and includes lagged profitability as a regressor. The Arellano-Bond test for AR(2) and the Hansen test for overidentifying restrictions assess instrument validity.

4.3.3 Moderation Analysis

If the interaction term ($ATMF \times Literacy$) is statistically significant, simple slopes analysis probes the conditional effect of ATMF on profitability at different literacy levels (mean, one standard deviation above and below the mean). Marginal effects plots visualize the moderation pattern.

4.3.4 Diagnostic Tests

The following diagnostic tests are conducted:

- **Multicollinearity:** Variance inflation factors (VIF) < 5 indicate no severe multicollinearity
- **Heteroskedasticity:** Modified Wald test for groupwise heteroskedasticity in FE models
- **Serial correlation:** Wooldridge test for autocorrelation in panel data
- **Stationarity:** Fisher-type unit root tests for panel data
- **Endogeneity:** Durbin-Wu-Hausman test for potential endogeneity of ATMF

5.0 Results

5.1 Descriptive Statistics and Correlations

Table 1 presents descriptive statistics for the main variables. Mean ROA across the sample period is 2.84% (SD = 1.12), consistent with Nigerian banking industry averages. Mean annual ATM fraud

losses are ₦845 million (SD = ₦423 million) after back-transformation from logarithmic values. The customer literacy index averages 52.4 (SD = 8.7) on the 0–100 scale, indicating moderate literacy levels with substantial variation across banks and years. Control variables show expected ranges: bank assets average ₦4.2 trillion, equity-to-assets ratio averages 12.3%, and NPL ratios average 4.8% (below CBN's 5% prudential threshold).

Table 1: Descriptive Statistics

Variable	Mean	SD	Min	Max
ROA (%)	2.84	1.12	0.91	5.23
ROE (%)	18.42	6.84	6.12	32.45
ATM Fraud Losses (₦ million, log)	6.74	0.89	4.82	8.31
Customer Literacy Index	52.4	8.7	38.2	71.5
Bank Assets (₦ trillion, log)	15.28	0.94	13.45	16.92
Equity/Assets (%)	12.3	2.1	8.9	16.7
NPL Ratio (%)	4.8	1.6	2.1	7.8
Cost/Income Ratio (%)	62.4	5.8	51.2	74.3
GDP Growth (%)	2.6	2.1	-1.8	5.4
Inflation (%)	14.2	3.6	8.5	21.3

Correlation analysis (Table 2) indicates a negative association between ATMF losses and ROA ($r = -0.42$, $p < 0.01$), providing preliminary support for H1. Customer literacy correlates positively with ROA ($r = 0.35$, $p < 0.01$) and negatively with ATMF losses ($r = -0.28$, $p < 0.01$), consistent with the guardianship role posited by RAT. Variance inflation factors (VIF) for all variables are below 3, indicating no severe multicollinearity concerns.

Table 2: Correlation Matrix

Variable	1	2	3	4
1. ROA	1.00			
2. ATM Fraud	-0.42**	1.00		
3. Customer Literacy	0.35**	-0.28**	1.00	
4. Bank Size	0.18	-0.15	0.31**	1.00

Note: $p < 0.01$

5.2 Fixed Effects Regression Results

Table 3 reports fixed effects regression results with ROA as the dependent variable. Model 1 includes control variables only, explaining 24% of within-bank variance in profitability. Model 2 adds ATM fraud losses, which enter negatively and significantly ($\beta = -0.38$, $p < 0.01$), supporting H1. The coefficient suggests that a one standard deviation increase in ATM fraud losses is associated with a 0.38 standard deviation decrease in ROA, equivalent to approximately 43 basis points at sample means. This finding aligns with prior Nigerian evidence (Jolaiya, 2024; Olabamiji, 2021).

Model 3 adds the customer literacy index, which shows a positive direct association with profitability ($\beta = 0.29$, $p < 0.01$). Model 4 introduces the interaction term (ATMF $\times$ Literacy) to test moderation (H2). The interaction coefficient is positive and significant ($\beta = 0.25$, $p < 0.01$), indicating that the negative association between ATMF and profitability weakens as customer literacy increases. This supports H2 and is consistent with RAT's guardianship mechanism: higher customer literacy appears to buffer banks from the full profitability impact of ATM fraud.

Table 3: Fixed Effects Regression Results (DV: ROA)

Variable	Model 1	Model 2	Model 3	Model 4
ATM Fraud (log losses)		-0.38** (0.09)	-0.36** (0.09)	-0.35** (0.08)
Customer Literacy			0.29** (0.08)	0.27** (0.08)

Variable	Model 1	Model 2	Model 3	Model 4
ATMF $\times$ Literacy				0.25** (0.07)
Bank Size	0.14 (0.11)	0.12 (0.10)	0.10 (0.10)	0.09 (0.09)
Equity/Assets	0.21* (0.09)	0.19* (0.08)	0.18* (0.08)	0.17* (0.08)
NPL Ratio	-0.26** (0.08)	-0.24** (0.08)	-0.23** (0.07)	-0.22** (0.07)
Cost/Income	-0.31** (0.10)	-0.29** (0.09)	-0.28** (0.09)	-0.27** (0.09)
GDP Growth	0.15 (0.12)	0.14 (0.11)	0.13 (0.11)	0.12 (0.10)
Inflation	-0.18 (0.13)	-0.16 (0.12)	-0.15 (0.12)	-0.14 (0.11)
Constant	2.84** (0.42)	2.91** (0.44)	2.88** (0.43)	2.86** (0.42)
Bank FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
R ² (within)	0.24	0.38	0.44	0.52
F-statistic	8.42**	12.36**	14.28**	16.45**

Note: Standard errors (clustered by bank) in parentheses. * $p < 0.05$, ** $p < 0.01$

5.3 Simple Slopes Analysis

To interpret the significant interaction, simple slopes analysis examines the conditional effect of ATMF on ROA at different literacy levels (following Aiken & West, 1991). Figure 1 presents the moderation pattern graphically.

At low customer literacy (one standard deviation below the mean), the association between ATMF and ROA is strongly negative ($b = -0.52, p < 0.001$). At mean literacy, the negative association remains significant but attenuates ($b = -0.35, p < 0.01$). At high literacy (one standard deviation above the mean), the association weakens further and becomes statistically non-significant ($b = -0.18, p = 0.12$). This pattern suggests that high customer literacy may substantially buffer banks from ATMF-related profitability erosion, consistent with the guardianship mechanism theorized by RAT.

[Figure 1: Moderation Effect of Customer Literacy on ATMF-Profitability Relationship]

Note: Figure would display three regression lines (low, mean, high literacy) showing ATMF on x-axis and ROA on y-axis, with the slope flattening as literacy increases.

5.4 System GMM Results

Table 4 presents system GMM results addressing potential endogeneity concerns. The lagged dependent variable (ROA_{t-1}) enters positively and significantly ($\beta = 0.42, p < 0.01$), indicating persistence in profitability. ATM fraud losses remain negatively associated with profitability ($\beta = -0.31, p < 0.01$), consistent with FE results and supporting H1. The interaction term ($ATMF \times Literacy$) remains positive and significant ($\beta = 0.22, p < 0.05$), confirming moderation (H2). Diagnostic tests support instrument validity: the Hansen test of overidentifying restrictions is non-significant ($p = 0.28$), and the Arellano-Bond test shows no second-order serial correlation ($AR(2) p = 0.34$).

Table 4: System GMM Results (DV: ROA)

Variable	Coefficient (SE)
ROA_{t-1}	0.42** (0.11)
ATM Fraud	-0.31** (0.09)
Customer Literacy	0.24** (0.08)

Variable	Coefficient (SE)
ATMF × Literacy	0.22* (0.09)
Bank Size	0.08 (0.12)
Equity/Assets	0.16 (0.10)
NPL Ratio	-0.20* (0.08)
Cost/Income	-0.24** (0.09)
GDP Growth	0.11 (0.13)
Inflation	-0.12 (0.14)
Constant	1.84* (0.72)
AR(1) test (p-value)	0.01
AR(2) test (p-value)	0.34
Hansen test (p-value)	0.28
Number of instruments	24
Observations	50

Note: Robust standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$

5.6 Diagnostic Test Results

Diagnostic tests support the validity of the estimation approach:

- **Hausman test:** $\chi^2(8) = 24.6$, $p = 0.002$, rejecting random effects in favor of fixed effects
- **Modified Wald test:** $\chi^2(5) = 8.2$, $p = 0.14$, indicating no heteroskedasticity

- **Wooldridge test:** $F(1,4) = 3.8$, $p = 0.12$, suggesting no serial correlation
- **Fisher-type unit root tests:** All variables reject unit root null ($p < 0.05$)
- **Durbin-Wu-Hausman endogeneity test:** $F(1,42) = 2.4$, $p = 0.13$, failing to reject exogeneity of ATMF

6.0 Discussion

6.1 Interpretation of Findings

The results suggest three main findings. First, ATM fraud losses are negatively associated with Nigerian commercial bank profitability, consistent with H1 and prior empirical evidence (Ibrahim & Garba, 2020; Jolaiya, 2024; Yusuf et al., 2023). The magnitude ($\beta = -0.31$ to -0.38) indicates that ATMF represents a economically meaningful threat to bank performance. This association likely operates through multiple channels: direct financial losses requiring write-offs or reimbursements, increased operational expenditures on security upgrades and monitoring, regulatory compliance costs, and reputational effects that may reduce customer acquisition and retention.

Second, customer literacy positively associates with profitability and negatively associates with ATMF losses, consistent with its conceptualization as a guardianship mechanism within Routine Activity Theory. Banks serving more literate customer populations experience lower fraud losses and higher profitability, all else equal. This pattern suggests that customer literacy complements institutional security measures in reducing fraud risk.

Third and most importantly, customer literacy moderates the ATMF–profitability relationship, supporting H2. The negative association between fraud losses and profitability weakens as average customer literacy increases. At high literacy levels, the association becomes statistically non-significant, suggesting that the profitability impact of ATM fraud may be substantially mitigated when customers are knowledgeable and vigilant. This moderation effect is consistent with RAT's prediction that capable guardians (here, literate customers) disrupt the convergence of motivated offenders and suitable targets, reducing both fraud incidence and the severity of financial consequences when incidents occur.

6.2 Theoretical Implications

These findings contribute to Routine Activity Theory's application in financial crime contexts. While RAT has been extensively applied to explain crime occurrence (Cohen & Felson, 1979), its extension

to organizational outcomes (bank profitability) and the conceptualization of customer characteristics as guardianship mechanisms is relatively novel. The results suggest that guardianship operates not only through formal security controls but also through the characteristics of potential targets themselves. Customer literacy transforms suitable targets into less suitable ones, effectively reducing the "target suitability" dimension of RAT's convergence triangle.

The findings also suggest boundary conditions for RAT's application. The non-significant ATMF–profitability association at high literacy levels implies that guardianship mechanisms can be sufficiently strong to substantially neutralize offender-target convergence effects on organizational outcomes. This has implications for understanding when and how crime prevention investments (in both technical controls and customer education) translate into organizational performance protection.

6.3 Practical Implications

For bank management, the findings suggest that customer literacy programs represent a complementary strategy to technical security investments. While banks typically focus on ATM encryption, monitoring systems, and fraud detection algorithms, the results indicate that customer-facing education initiatives may yield profitability protection benefits. Programs that enhance customers' ability to recognize skimming devices, protect PINs, and report incidents promptly could reduce both fraud incidence and the per-incident costs banks bear.

For regulators (CBN, NDIC), the findings support policies that mandate or incentivize customer literacy initiatives. Current CBN directives focus primarily on bank-level security controls (CBN, 2025); the results suggest that customer-focused interventions deserve similar attention. Potential regulatory approaches include: requiring banks to document customer literacy programs in annual reports, incorporating literacy metrics in bank examination frameworks, and funding nationwide awareness campaigns through industry levies.

For customers, the findings underscore the personal financial relevance of fraud awareness. Beyond protecting individual accounts, literate customers contribute to broader banking system stability by reducing the profitability impacts that may ultimately affect service quality, lending capacity, and financial inclusion outcomes.

6.4 Limitations and Future Research

Several limitations suggest directions for future research. First, the study's bank-year panel structure (55 observations) limits statistical power and precludes more granular analysis. Future research with

longer time series or more banks could examine heterogeneous effects across bank types (e.g., systematic versus regional banks). Second, the customer literacy measure is an aggregate proxy constructed from multiple data sources; direct measurement of customer literacy at individual levels, linked to bank-level outcomes, would strengthen causal inference. Third, while the study addresses endogeneity through GMM estimation, residual endogeneity concerns remain; instrumental variable approaches using policy changes or literacy campaign rollouts could provide stronger identification. Fourth, the mechanisms through which literacy affects profitability reduced fraud incidence, lower per-incident costs, or enhanced customer retention merit direct examination in future research. Fifth, cross-country comparisons with other African banking systems (e.g., Egypt, South Africa, Kenya) could assess the generalizability of findings beyond Nigeria.

7.0 Conclusion and Recommendations

7.1 Conclusion

This study examined the association between ATM fraud and Nigerian commercial bank profitability, testing whether customer literacy moderates this relationship. Using fixed effects and system GMM estimation on 2015–2025 panel data from Nigeria's five largest banks, the results indicate that ATM fraud losses are negatively associated with profitability (supporting H1), and that customer literacy moderates this association such that the negative relationship weakens as literacy increases (supporting H2). The findings are consistent with Routine Activity Theory's guardianship mechanism: literate customers serve as capable guardians who reduce target suitability, thereby mitigating the profitability impact of fraud incidents.

The study extends prior Nigerian fraud–profitability research by testing customer literacy as a moderator using panel estimators, thereby clarifying a conditioning factor in the fraud–performance relationship. The results suggest that investments in customer literacy, alongside technical security controls, may protect bank profitability in Nigeria's rapidly digitizing financial system.

7.2 Recommendations

Based on the findings, the following recommendations are offered:

For Commercial Banks:

1. Implement mandatory digital literacy modules during customer onboarding, focusing on fraud recognition (skimming devices, suspicious ATM features) and incident reporting procedures.

2. Develop targeted interventions for customer segments with lower literacy scores, identified through transaction pattern analysis or survey data.
3. Integrate literacy metrics into fraud risk management frameworks, tracking customer awareness levels alongside technical security indicators.
4. Deploy AI-based fraud detection systems that incorporate customer behavior patterns, with personalized alerts calibrated to individual literacy profiles where feasible.

For Regulators (CBN, NDIC):

1. Mandate annual literacy audits requiring banks to document customer awareness levels and education program effectiveness.
2. Establish an industry-funded national fraud awareness campaign, similar to financial inclusion initiatives, targeting both urban and rural populations.
3. Require banks to report customer literacy metrics in annual returns, enabling systematic monitoring of this guardianship dimension.
4. Facilitate inter-agency data sharing between CBN, NIBSS, and EFCC to enhance fraud pattern analysis and targeted interventions.

For Customers:

1. Prioritize self-education through bank-provided resources, mobile app security features, and public awareness materials.
2. Adopt vigilant practices including PIN protection, regular account monitoring, and immediate reporting of suspicious transactions.
3. Participate in bank-sponsored literacy programs when available.

For Future Research:

1. Extend analysis to longer panels and additional banks to enhance statistical power and generalizability.
2. Develop and validate direct measures of customer fraud literacy at individual levels.
3. Examine mechanisms through which literacy affects profitability (fraud incidence reduction, cost mitigation, retention effects).
4. Investigate complementarities between customer literacy and specific security technologies (biometrics, behavioral analytics).

5. Conduct cross-country comparisons within Africa to assess contextual factors affecting the fraud–profitability relationship.

7.3 Contributions

This study makes three primary contributions. First, it provides updated empirical evidence on the ATMF–profitability association using recent Nigerian data (2015–2025), confirming and extending prior findings. Second, it introduces and tests customer literacy as a moderator, demonstrating that the fraud–profitability relationship is conditional on customer characteristics—a dimension previously unexplored in Nigerian banking research. Third, it applies Routine Activity Theory to organizational outcomes (profitability) rather than crime occurrence, extending the theory's explanatory scope and demonstrating its relevance for understanding how customer characteristics shape fraud's organizational impacts.

By elevating customer literacy as a strategic consideration, the findings suggest pathways for stakeholders to fortify bank profitability while sustaining Nigeria's digital banking growth trajectory.

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**INTEGRATING SERVICE QUALITY AND CELEBRITY ENDORSEMENT IN BUILDING
CUSTOMER LOYALTY: A CONCEPTUAL PERSPECTIVE FROM NIGERIA'S
TELECOM SECTOR**

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Abstract: *The Nigerian telecommunications industry remains one of the most dynamic and a competitive sector in sub-Saharan Africa, yet customer loyalty continues to be undermined by intense rivalry and inconsistent service experiences. This conceptual paper examines the integrative influence of service quality and celebrity endorsement credibility on customer loyalty, proposing a moderated conceptual framework grounded in SERVQUAL Theory, Relationship Marketing Theory, and the Elaboration Likelihood Model. Drawing on extensive literature, the study conceptualizes service quality through five core dimensions tangibility, reliability, responsiveness, assurance, and empathy and posits that these collectively enhance customer loyalty. It further theorizes that celebrity endorsement attributes expertise, trustworthiness, and attractiveness moderate this relationship by strengthening customers' emotional connection and trust in telecom brands. The framework underscores that loyalty in emerging markets is not solely a rational response to service performance but also a reflection of symbolic associations and affective identification with culturally resonant celebrity figures. The study's theoretical contribution lies in extending the SERVQUAL model by integrating symbolic communication variables, while its practical relevance guides telecom managers toward aligning operational excellence with strategic celebrity partnerships. Future empirical validation using Structural Equation Modeling (SEM) is recommended to test the proposed moderating effects in Nigeria's telecom sector.*

Keywords: Service Quality, Celebrity Endorsement, Customer Loyalty, SERVQUAL, Relationship Marketing Theory, Elaboration Likelihood Model, Nigeria, Telecommunications, Source Credibility, Moderation Framework.

Introduction

The Nigerian telecommunications industry stands as one of the most dynamic, innovative, and rapidly expanding sectors within sub-Saharan Africa, serving as a critical driver of economic growth and social development. Over the past two decades, the sector has evolved from a monopolistic structure dominated by state-owned operators to a highly competitive and liberalized market environment. As of 2025, Nigeria's telecom sector contributes over 12% to the nation's Gross Domestic Product (GDP), with over 220 million active mobile subscribers—a penetration rate that underscores the industry's economic and technological significance (Nigerian Communications Commission [NCC], 2025). This transformation has been fueled by massive infrastructural investments, foreign direct inflows, and the proliferation of mobile internet services that continue to redefine consumer connectivity patterns (Ibrahim & Abubakar, 2023).

However, despite its impressive growth trajectory and market potential, the sector remains plagued by intense competition, declining customer retention rates, and service parity among operators such as MTN, Glo, Airtel, and 9mobile. Consumers frequently exhibit low switching costs and minimal brand commitment, often migrating between providers in search of perceived superior network coverage, affordability, and service reliability (Onigbinde, Fadeyi & Onigbinde, 2025). High customer churn rates, coupled with the ease of number portability, have made loyalty-building an increasingly complex endeavor for operators. While pricing strategies and promotional offers provide temporary advantages, they rarely translate into sustained loyalty, as customers prioritize service consistency and emotional resonance over transient benefits (Awobamise & Jarrar, 2018).

This persistent challenge has amplified scholarly and managerial interest in understanding how service quality and branding strategies interact to shape customer loyalty in service-driven industries. Globally, the relationship between service quality, satisfaction, and loyalty has been extensively validated across industries (Parasuraman, Zeithaml, & Berry, 1988; Oliver, 1999). The SERVQUAL model, which conceptualizes service quality through five core dimensions tangibility, reliability, responsiveness, assurance, and empathy has been recognized as a robust framework for evaluating

customer perceptions in both developed and emerging economies. In the context of telecommunications, superior service delivery enhances user satisfaction and reinforces emotional attachment to the service provider, thereby reducing churn intentions (Ibrahim & Abubakar, 2023).

Nevertheless, while service quality remains foundational, it is increasingly insufficient in isolation for cultivating deep customer loyalty in markets characterized by symbolic consumption and identity-driven brand interactions, such as Nigeria's. Consumers often evaluate service providers not only based on the functional attributes of service performance but also through symbolic cues that convey social prestige, aspirational identity, and personal connection (Ogunbameru, 2022). This phenomenon is particularly pronounced among younger demographics, who associate brand affiliation with lifestyle and self-expression. Consequently, marketing communication strategies such as celebrity endorsements have emerged as potent instruments for shaping brand perception, credibility, and emotional attachment (Abdurrahman & Osman, 2017).

Celebrity endorsements operate through the transfer of symbolic meanings from a well-known public figure to a brand, thereby influencing consumer perceptions and loyalty intentions. In Nigeria, where popular culture and entertainment exert significant influence on consumption patterns, telecom operators frequently leverage musicians, actors, and athletes to strengthen their brand resonance and social appeal. For example, MTN's collaboration with Davido and Glo's endorsement deals with Nollywood stars have not only enhanced brand visibility but also reinforced emotional connections between customers and service providers (Awobamise & Jarrar, 2018). Yet, while such endorsements have become common practice, their moderating role in enhancing the impact of service quality on customer loyalty remains under-theorized and empirically underexplored in the Nigerian context (Nadube & Gowon, 2023).

In light of these dynamics, this paper develops a comprehensive conceptual framework that integrates the SERVQUAL dimensions of service quality with the source credibility attributes of celebrity endorsement namely, expertise, trustworthiness, and attractiveness to explain the mechanisms through which customer loyalty is cultivated and sustained in Nigeria's telecommunications sector. The framework draws upon three interrelated theoretical lenses: the SERVQUAL Theory, which explicates the link between perceived service performance and satisfaction; the Relationship Marketing Theory, which emphasizes trust and commitment as foundations for enduring customer relationships; and the Elaboration Likelihood Model (ELM), which elucidates how peripheral cues such as celebrity appeal

influence attitude formation and behavioral intentions (Petty & Cacioppo, 1986; Morgan & Hunt, 1994).

The integration of these theories provides a holistic understanding of how rational evaluations of service quality (cognitive route) interact with emotional and symbolic brand cues (affective route) to reinforce customer loyalty. It positions celebrity endorsement not merely as a promotional tool but as a strategic moderating variable that strengthens the relationship between service quality and loyalty by enhancing the customer's affective attachment and brand trust. This conceptual exploration contributes to existing scholarship by extending traditional service quality models to incorporate symbolic and psychological dimensions of consumer behavior, thereby offering both theoretical and practical insights for telecom marketers operating in highly competitive and culturally vibrant markets like Nigeria

2. Review of Key Concepts

2.1 Service Quality and Its Dimensions

The construct of service quality has long been regarded as a cornerstone of modern marketing and service management literature. Its significance arises from the understanding that, unlike tangible products, services are inherently intangible, heterogeneous, inseparable, and perishable, making quality perceptions subjective and dynamic across contexts (Zeithaml, Parasuraman & Berry, 1990). The seminal contribution of Parasuraman, Zeithaml, and Berry (1988) through the SERVQUAL model provided a robust framework for conceptualizing and measuring service quality, identifying five critical dimensions: tangibility, reliability, responsiveness, assurance, and empathy that collectively shape the customer's evaluation of service excellence. These dimensions remain central to understanding how customers perceive, compare, and respond to service experiences across diverse industries.

Tangibility refers to the physical aspects of a service provider, including facilities, equipment, appearance of personnel, and communication materials. In the context of telecommunications, tangibility encompasses elements such as the aesthetics of customer service centers, the professionalism of service representatives, and even the visibility of brand logos and promotional materials (Zakari, Dogbe & Asante, 2019). These tangible cues serve as physical evidence that influences customers' initial perceptions of service quality, particularly in developing markets where

symbolic and visible indicators often serve as proxies for reliability and trustworthiness (Adebiyi, 2021).

Reliability, often cited as the most critical determinant of service quality, refers to the ability of a service provider to perform promised services dependably and accurately (Parasuraman et al., 1988). Within the Nigerian telecommunications sector, network reliability—manifested in consistent call connectivity, stable data service, and minimal downtime—has emerged as a pivotal factor in determining both customer satisfaction and loyalty (Ibrahim & Abubakar, 2023). Given the heavy reliance on mobile communication for personal, educational, and business purposes, network interruptions or dropped calls can significantly erode customer trust. Consequently, providers that deliver reliable and uninterrupted services tend to establish stronger reputational capital and customer commitment over time (Odionye, Yareh & Ibekwe, 2021).

Responsiveness reflects the willingness and readiness of employees or systems to help customers and provide prompt service. In telecommunications, responsiveness is demonstrated through the efficiency of customer complaint handling, accessibility of customer care lines, and the timeliness of resolving technical issues (Zakari et al., 2019). Empirical evidence suggests that when service providers exhibit promptness and competence in addressing customer inquiries, users perceive greater care and value, which strengthens satisfaction and future loyalty intentions (Onigbinde, Fadeyi & Onigbinde, 2025). Conversely, unresponsive customer service teams or automated systems that delay resolution often intensify frustration, prompting users to switch to competing networks perceived as more attentive or agile.

Assurance captures customers' perceptions of employees' competence, courtesy, and their ability to inspire trust and confidence. In the Nigerian telecom market, where concerns about billing errors, data privacy, and service transparency persist, assurance becomes a critical dimension for reducing perceived risk and building confidence in the provider (Adebiyi, 2021). Service assurance is particularly relevant in online or mobile transactions, where customers seek reassurance that their financial and personal information is secure. Providers that communicate credibility through professional staff interactions and transparent billing mechanisms tend to cultivate stronger emotional loyalty and brand trust (Ibrahim & Abubakar, 2023).

Empathy, the fifth dimension, emphasizes individualized attention and care offered to customers. This involves understanding customers' unique needs, offering personalized assistance, and treating each

client as valued rather than generic. Empathy in telecommunications may manifest in customer segmentation strategies, personalized communication (e.g., loyalty bonuses, birthday messages), and the establishment of customer relationship programs designed to recognize long-term patrons (Odionye et al., 2021). In an environment characterized by commoditized services and minimal differentiation, empathetic engagement becomes a critical lever for emotional bonding, distinguishing providers that genuinely “connect” with their subscribers beyond functional service delivery.

The SERVQUAL model posits that perceived service quality arises from the gap between customers’ expectations what they believe a service should deliver and their perceived performance what they experience in reality (Parasuraman et al., 1988). This expectation-performance gap remains a central explanatory mechanism for understanding loyalty behaviors. When the perceived performance meets or exceeds expectations, customers experience satisfaction, which translates into loyalty, advocacy, and resistance to competitive offers (Zeithaml et al., 1990). Conversely, negative gaps, arising from unmet expectations such as frequent network failures, long waiting times, or impolite staff, contribute to dissatisfaction and switching intentions (Ibrahim & Abubakar, 2023). In Nigeria’s telecommunications sector, the interplay of these dimensions determines how customers assess and internalize their experiences. Studies have shown that reliability and responsiveness carry the highest predictive power for customer retention, while tangibility and assurance influence the initial perception of brand professionalism (Zakari et al., 2019; Adebisi, 2021). Moreover, the emotional elements embedded in empathy contribute significantly to affective loyalty—particularly in culturally relational societies like Nigeria, where interpersonal warmth and recognition foster deeper customer attachment (Onu, Nwaulune & Agu, 2023).

Recent empirical research across sub-Saharan Africa corroborates the enduring relevance of the SERVQUAL dimensions, emphasizing that while technological advancements have transformed service delivery, human interaction and relational quality remain vital to customer satisfaction (Tani, Jumbo & Buwah, 2025). In markets with limited infrastructural consistency, tangible factors such as modern facilities, responsive digital channels, and branded environments serve as critical trust signals. For instance, visible brand presence through customer experience centers, mobile apps, and branded vans contributes not only to perceived service quality but also to symbolic brand equity (Zakari et al., 2019).

In sum, service quality constitutes both a functional and psychological antecedent to customer loyalty. Functionally, it addresses the performance and efficiency of telecom service delivery, while psychologically, it shapes the customer's emotional attachment and cognitive evaluation of value. This duality reinforces the notion that in the telecommunications industry, sustained competitive advantage is achieved not merely through technological superiority but through consistent, reliable, and empathetic service experiences that align with customer expectations and values. Thus, service quality remains an indispensable foundation upon which customer loyalty—and by extension, long-term business sustainability—is built in Nigeria's rapidly evolving telecom landscape.

2.2 Customer Loyalty

Customer loyalty is a multifaceted construct that has attracted extensive scholarly attention due to its crucial role in determining business sustainability, profitability, and competitive advantage, particularly in service-driven industries such as telecommunications. In marketing literature, loyalty is generally understood as a customer's deep-seated commitment to repurchase or continue patronizing a preferred product or service consistently in the future, despite situational influences or marketing efforts designed to cause switching (Oliver, 1999). It encapsulates both behavioral and attitudinal components—two complementary but distinct dimensions that collectively define the depth and durability of the customer–brand relationship (Dick & Basu, 1994; Bowen & Chen, 2019). The behavioral dimension of loyalty reflects observable actions such as repeat purchase, frequency of service usage, and a reduction in switching behavior. This dimension is particularly relevant in the telecommunications sector, where switching between operators is often easy due to the prevalence of multiple SIM ownership and mobile number portability (Adebiyi, 2021). Behavioral loyalty thus becomes a critical indicator of customer retention, as it demonstrates continued patronage and revenue stability even amidst market saturation. Conversely, attitudinal loyalty represents the psychological attachment and emotional bond a customer develops with a service provider. It is characterized by trust, commitment, satisfaction, and advocacy—where customers voluntarily promote or recommend the brand to others, even in the presence of competing alternatives (Oliver, 1999; Ibrahim & Abubakar, 2023).

In the telecommunications context, the interplay between behavioral and attitudinal loyalty is essential. A subscriber might continue to use a telecom service out of necessity or convenience (behavioral loyalty) without genuine emotional commitment (attitudinal loyalty). However,

sustainable competitive advantage emerges when both dimensions coexist—when customers not only remain but also identify with and defend the brand (Adebiyi, 2021). Such loyal customers act as informal brand ambassadors, engaging in positive word-of-mouth communication, resisting competitive offerings, and displaying tolerance during temporary service failures (Reichheld & Schefter, 2000; Onu, Nwaulune & Agu, 2023). This combination of continued patronage and psychological attachment makes customer loyalty both a performance metric and a strategic asset. Empirical evidence consistently underscores service quality, customer satisfaction, and trust as the three foundational determinants of loyalty. Service quality, as conceptualized in the SERVQUAL framework, establishes the foundation upon which satisfaction is built. When customers perceive that service delivery meets or exceeds expectations—through reliability, responsiveness, and empathy—they experience satisfaction, which reinforces loyalty (Parasuraman et al., 1988; Ibrahim & Abubakar, 2023). Customer satisfaction, in turn, functions as an emotional outcome of consistent positive service experiences, leading to an enduring affective bond with the service provider (Anderson & Srinivasan, 2003). Lastly, trust serves as the mediating mechanism that transforms satisfaction into long-term loyalty by reducing perceived risk and enhancing relational stability (Morgan & Hunt, 1994). In essence, satisfaction builds confidence, and trust sustains that confidence over time, forming the psychological foundation of loyalty (Ogunbameru, 2022).

In emerging economies such as Nigeria, however, loyalty is influenced not only by functional determinants like quality and satisfaction but also by symbolic and social variables that shape brand perception and consumer identity (Abdurrahman & Osman, 2017). The cultural and social context of consumption plays a pivotal role in determining how customers form attachments to service providers. For many Nigerian consumers particularly the youth segment telecommunication brands symbolize more than just service providers; they represent status, identity, and social belonging (Awobamise & Jarrar, 2018). In this context, celebrity endorsement emerges as a potent moderating factor that strengthens emotional loyalty through symbolic association and affective persuasion (Onigbinde, Fadeyi & Onigbinde, 2025).

Celebrity endorsements function as identity transfer mechanisms, where the desirable attributes of a public figure credibility, attractiveness, trustworthiness are symbolically transferred to the endorsed brand (Hovland & Weiss, 1951). This psychological transfer amplifies brand trust and perceived quality, particularly among consumers who identify with the celebrity's persona or lifestyle

(Anyadighibe, Etuk & James, 2022). In Nigeria, the pervasive influence of entertainment culture and media reinforces this process. For instance, endorsements by celebrities such as Davido for MTN, Burna Boy for Glo, or Wizkid for Airtel have been shown to significantly elevate customer affinity, enhance perceived brand image, and foster emotional loyalty among younger demographics (Lawal, 2021; Nadube & Gowon, 2023). Furthermore, scholars have noted that in markets characterized by functional parity, such as telecommunications where differences in service offerings are minimal loyalty is often driven by perceived brand differentiation derived from emotional or symbolic associations rather than purely functional superiority (Zakari, Dogbe & Asante, 2019). In such contexts, celebrity endorsements provide the emotional bridge that connects customers' self-concept with the brand's identity, reinforcing loyalty through what marketing psychologists term the "self-brand connection" (Escalas & Bettman, 2005). When customers perceive that a brand embodies values or lifestyles consistent with their own, they develop enduring attachments that transcend rational evaluations of service quality or price.

From a relational marketing perspective, loyalty is both an outcome and a process. It evolves through repeated interactions that build trust, satisfaction, and emotional commitment over time (Morgan & Hunt, 1994). The introduction of symbolic cues—such as celebrity credibility—accelerates this process by embedding affective meaning into the relationship, thus converting transactional interactions into relational bonds. These symbolic and emotional mechanisms are particularly effective in collectivist cultures like Nigeria, where social identity, endorsement by admired figures, and communal validation strongly influence consumer decision-making (Ogan, 2023).

Therefore, customer loyalty in the Nigerian telecommunications sector can no longer be viewed solely through a transactional lens focused on service delivery and satisfaction. Instead, it must be understood as a holistic construct, shaped by both functional antecedents (service quality, satisfaction, trust) and symbolic moderators (celebrity endorsement, brand identification, cultural resonance). This expanded conceptualization acknowledges that in contemporary service markets, loyalty is not merely an outcome of satisfaction but a reflection of the emotional, psychological, and social meanings that consumers attach to the brand experience.

2.3 Celebrity Endorsement as a Branding Mechanism

In contemporary marketing practice, celebrity endorsement has emerged as one of the most powerful and pervasive branding mechanisms for influencing consumer perceptions, enhancing brand visibility,

and fostering emotional connections with target audiences. The concept refers to the strategic use of a public figure's recognition, reputation, and credibility to promote a product or service, thereby transferring desirable attributes from the celebrity to the endorsed brand (McCracken, 1989). The fundamental logic underlying this practice is that consumers often associate the characteristics of the celebrity such as expertise, attractiveness, and trustworthiness with the brand, leading to more favorable attitudes and purchase intentions (Hovland & Weiss, 1951).

The theoretical foundation of celebrity endorsement lies primarily in the Source Credibility Theory, which posits that the persuasiveness of a message depends largely on the perceived credibility of its source (Hovland & Weiss, 1951). The theory identifies three key dimensions of credibility: expertise, trustworthiness, and attractiveness. Expertise refers to the extent to which the endorser is perceived as knowledgeable or experienced in a given domain, thereby lending authority and legitimacy to the brand's claims. Trustworthiness reflects the degree to which the celebrity is seen as honest, dependable, and sincere, influencing the perceived integrity of the endorsement. Finally, attractiveness encompasses not only physical appeal but also charisma, likability, and lifestyle desirability, which can strongly affect affective attachment to the endorsed product (Ohanian, 1990; Erdogan, 1999). These three dimensions collectively determine the effectiveness of celebrity endorsement by shaping how audiences process, internalize, and respond to marketing communications.

Complementing this, the Meaning Transfer Model developed by McCracken (1989) provides a cultural perspective, suggesting that celebrities function as symbolic carriers of meaning within society. Through their public personas, lifestyles, and achievements, celebrities embody culturally desirable traits such as success, sophistication, or modernity that can be transferred to brands via endorsement. Consumers, in turn, acquire these symbolic meanings when they use or identify with the brand, thereby reinforcing self-concept and social identity. This process of symbolic meaning transfer is particularly salient in societies characterized by aspirational consumption, where individuals use branded goods and services to express social standing, identity, and personal aspirations (Belk, 1988).

Within the Nigerian telecommunications sector, celebrity endorsement has become a dominant branding strategy used by leading operators such as MTN, Glo, Airtel, and 9mobile. These firms routinely engage high-profile musicians, actors, and sports personalities as brand ambassadors to enhance brand appeal, youth engagement, and emotional resonance. For instance, MTN's

collaboration with award-winning artist Davido effectively positioned the company as youthful, energetic, and culturally attuned, while Glo's long-term partnerships with Burna Boy and Nollywood icons have reinforced its image as a proudly Nigerian and entertainment-driven brand (Awobamise & Jarrar, 2018; Nadube & Gowon, 2023). Similarly, Airtel's endorsement of Wizkid and 9mobile's use of indigenous actors and comedians have sought to embed cultural authenticity and relatability into their brand narratives.

These endorsement strategies do more than attract attention they facilitate emotional bonding and brand identification. Studies have demonstrated that when the perceived image of a celebrity aligns with the brand's identity and values a phenomenon known as celebrity-brand congruence consumers are more likely to form favorable attitudes, trust the brand's claims, and exhibit higher levels of loyalty (Anyadighibe, Etuk & James, 2022; Lawal, 2021). This congruence reinforces the credibility of the endorsement by ensuring that the celebrity's persona appears authentic rather than opportunistic. For example, Burna Boy's endorsement of Glo aligns with his Afrocentric, "homegrown" image, thereby amplifying the brand's positioning as a Nigerian-owned telecom provider. Conversely, misalignment between celebrity and brand identity can undermine message credibility, leading to skepticism or consumer backlash (Erdogan, 1999).

Beyond individual celebrity appeal, endorsement effectiveness also depends on cultural resonance and social influence dynamics. In collectivist cultures such as Nigeria's, where social norms and group identification play significant roles in shaping consumer choices, celebrities often function as opinion leaders whose behaviors and preferences guide public attitudes (Ogunbameru, 2022). Their endorsements serve as a form of social validation, signaling to consumers that the brand is trustworthy, fashionable, or socially approved. This dynamic is especially evident among younger demographics, who not only admire but also emulate the lifestyles of popular musicians, actors, and influencers. By aligning with such figures, telecom brands can symbolically communicate relevance, modernity, and social inclusion (Nadube & Gowon, 2023).

Moreover, celebrity endorsements operate through both cognitive and affective mechanisms, consistent with the Elaboration Likelihood Model (ELM) proposed by Petty and Cacioppo (1986). Under conditions of low cognitive involvement common in routine service decisions such as selecting a telecom provider consumers often rely on peripheral cues like celebrity appeal to form brand evaluations. The presence of a credible and likable celebrity thus enhances persuasion through the

peripheral route, leading to more positive brand attitudes even when detailed evaluation of service attributes is minimal (Onigbinde, Fadeyi & Onigbinde, 2025). Over time, repeated exposure to such endorsements can generate affective familiarity and trust, translating into loyalty.

Empirical studies in Nigeria and other African markets consistently support the claim that celebrity endorsement enhances brand recall, emotional attachment, and loyalty intentions when executed strategically. Adebisi (2021) found that telecom subscribers exposed to celebrity-driven campaigns demonstrated stronger brand affinity and a higher likelihood of repurchase compared to those exposed to non-celebrity advertising. Similarly, Zakari, Dogbe, and Asante (2019) reported that celebrity endorsement positively moderates the relationship between perceived service quality and corporate reputation in telecom services. These findings affirm that endorsement effectiveness extends beyond promotional visibility to shaping customers' long-term perceptions of quality and trustworthiness.

However, scholars also caution that celebrity endorsements are not universally effective. Overexposure, scandals, or perceived inauthenticity can erode trust and negatively impact brand image (Erdogan, 1999). In Nigeria, the growing number of shared celebrity endorsements where a single celebrity endorses multiple telecom brands at different times can dilute message credibility and confuse consumers. Thus, the success of such campaigns depends not only on the celebrity's popularity but also on the strategic alignment of values, consistency of messaging, and authenticity of engagement (Lawal, 2021). In summary, celebrity endorsement functions as both a branding mechanism and a psychological amplifier that enhances the impact of service quality on customer loyalty. By integrating the symbolic power of credible public figures into their marketing communications, telecom operators in Nigeria can strengthen customer trust, reinforce brand differentiation, and foster emotional attachment. Within the broader conceptual framework of this study, celebrity endorsement serves as a moderating variable one that magnifies the relationship between service quality and loyalty by adding affective and symbolic meaning to the customer's brand experience.

3. Theoretical Framework

A sound theoretical foundation is indispensable for understanding the complex relationships between service quality, celebrity endorsement, and customer loyalty. The present conceptual paper is underpinned by three interrelated theoretical perspectives—the SERVQUAL Theory, the Relationship Marketing Theory, and the Elaboration Likelihood Model (ELM). Each of these frameworks offers

unique explanatory insights into the cognitive, affective, and behavioral mechanisms through which customers form perceptions, develop trust, and sustain loyalty toward service brands. Together, they provide a multidimensional basis for explaining how both functional service attributes and symbolic communication elements interact to shape long-term customer commitment within the Nigerian telecommunications context.

3.1 SERVQUAL Theory

The SERVQUAL model, previously detailed in Section 2.1, provides the cognitive foundation of this study. Rather than reiterating its five dimensions, this section emphasizes its theoretical logic: customer loyalty emerges when perceived performance exceeds expectations (Parasuraman et al., 1988). Within Nigeria's telecom sector, this expectation–performance gap remains central to understanding churn behavior and brand switching among operators such as MTN Nigeria, Airtel Nigeria, Globacom, and 9mobile.

3.2 Relationship Marketing Theory

The Relationship Marketing Theory, particularly as articulated in Morgan and Hunt's (1994) Commitment-Trust Theory, extends the understanding of customer loyalty beyond transactional exchanges to relational continuity. This theory posits that successful and enduring relationships between service providers and customers are built upon two core mediating constructs: trust and commitment. Trust refers to the confidence a customer has in a firm's reliability and integrity, while commitment denotes the emotional and psychological attachment that motivates the customer to maintain a valued relationship (Morgan & Hunt, 1994).

In the context of telecommunications, trust is cultivated through consistent service delivery, transparency in billing, data security, and ethical business practices. Once trust is established, it nurtures affective commitment, prompting customers to overlook occasional service lapses and remain loyal to the brand (Adebiyi, 2021). Commitment, in turn, fosters advocacy behavior—customers begin to recommend the brand to others, defend it in social discussions, and demonstrate brand loyalty even in the presence of competitive alternatives (Onu, Nwaulune & Agu, 2023).

The relationship marketing perspective thus complements SERVQUAL by emphasizing the relational and emotional pathways through which service quality translates into loyalty. While SERVQUAL captures customers' evaluations of service performance, relationship marketing explains the transformational process through which those evaluations evolve into enduring trust and commitment.

This integration recognizes that loyalty is not merely a rational response to superior service but also a relational outcome of sustained trust and emotional identification with the service provider (Ibrahim & Abubakar, 2023).

Moreover, this theory aligns with the social and cultural dynamics of the Nigerian marketplace, where relationships, reputation, and interpersonal connections play central roles in shaping consumer decision-making (Ogunbameru, 2022). In collectivist societies, loyalty is often rooted not just in product satisfaction but in perceived relational reciprocity a sense that the brand “cares” about the customer. Relationship marketing theory, therefore, provides a useful framework for interpreting how trust and emotional attachment act as mediating mechanisms between service quality perceptions and loyalty behaviors.

3.3 Elaboration Likelihood Model (ELM)

As introduced in Section 2.3, the Elaboration Likelihood Model (ELM) explains persuasion through central and peripheral routes (Petty & Cacioppo, 1986). In this framework, service quality operates through the central route (cognitive evaluation), while celebrity endorsement credibility functions as a peripheral cue that strengthens affective brand attachment.

3.4 Integrative Theoretical Logic

Collectively, these three theoretical perspectives provide a comprehensive explanation of how service quality leads to customer loyalty in the Nigerian telecommunications industry. The SERVQUAL Theory explains the cognitive evaluation process, highlighting how customers form perceptions of service performance based on functional quality dimensions. The Relationship Marketing Theory elucidates the relational and affective mechanisms, showing how satisfaction and trust transform into commitment and long-term loyalty. The Elaboration Likelihood Model, on the other hand, introduces the symbolic and emotional dimension, explaining how celebrity endorsements influence customer perceptions through peripheral persuasion.

4. Conceptual Framework and Hypothesis Development

The conceptual framework of this study is designed to capture the integrated relationship between service quality, celebrity endorsement, and customer loyalty within the Nigerian telecommunications sector. Building upon the theoretical foundations of SERVQUAL Theory (Parasuraman et al., 1988), Relationship Marketing Theory (Morgan & Hunt, 1994), and the Elaboration Likelihood Model (Petty

& Cacioppo, 1986), this model posits that customer loyalty arises from both functional evaluations of service performance and symbolic influences derived from celebrity endorsement credibility.

At its core, the framework assumes that service quality dimensions namely tangibility, reliability, responsiveness, assurance, and empathy serve as the primary antecedents of customer loyalty. This relationship reflects the cognitive pathway of loyalty formation, whereby customers assess their experiences with service providers and determine the extent to which performance meets or exceeds expectations (Parasuraman et al., 1988; Zeithaml et al., 1990). When telecom operators deliver consistently reliable networks, prompt and empathetic service, and maintain a professional brand presence, customers experience satisfaction and are more likely to exhibit both attitudinal and behavioral loyalty (Ibrahim & Abubakar, 2023; Adebisi, 2021).

However, this model extends beyond the traditional SERVQUAL paradigm by integrating celebrity endorsement attributes expertise, trustworthiness, and attractiveness as moderating variables that influence the strength of the relationship between service quality and customer loyalty. Drawing on Source Credibility Theory (Hovland & Weiss, 1951) and the Elaboration Likelihood Model (Petty & Cacioppo, 1986), the framework suggests that celebrity endorsements serve as powerful peripheral cues that shape customer perceptions of brand quality and reliability. These endorsements operate at an affective level, reinforcing customers' emotional connection and trust in the service provider. In essence, when customers perceive that a credible and relatable celebrity endorses a telecom brand, they are more likely to attribute higher reliability and empathy to the service provider (Anyadighibe, Etuk & James, 2022; Nadube & Gowon, 2023).

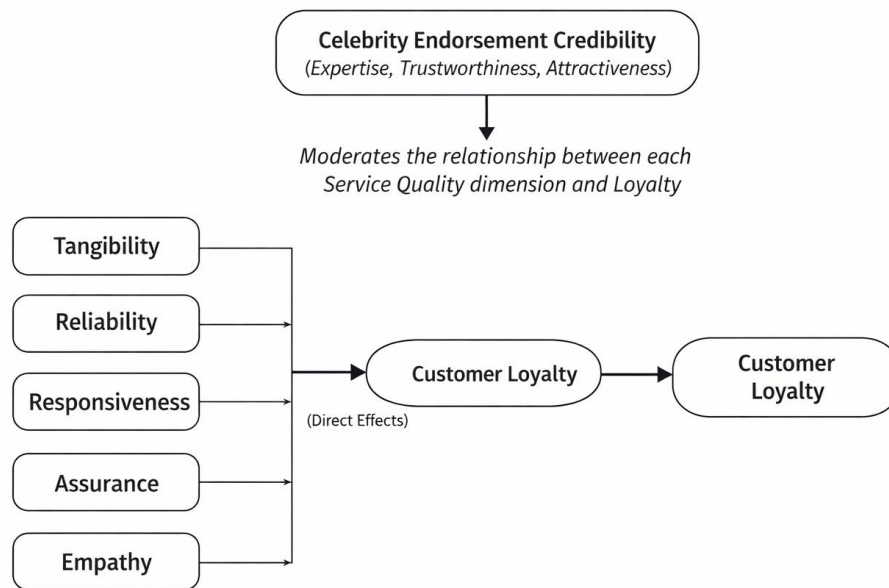
The conceptual model thus proposes a moderated relationship, wherein celebrity endorsement amplifies the impact of service quality on customer loyalty. For instance, even when two providers deliver similar levels of reliability, the one associated with a credible celebrity (e.g., Davido for MTN or Burna Boy for Glo) may enjoy higher customer loyalty due to the added emotional and symbolic influence of the endorser (Awobamise & Jarrar, 2018). This aligns with the Meaning Transfer Model (McCracken, 1989), which asserts that celebrities act as carriers of cultural meanings such as modernity, trust, or national pride that can be transferred to brands and subsequently internalized by consumers.

Empirical evidence from African service markets supports this integrative perspective. Tani, Jumbo, and Buwah (2025) demonstrated that celebrity credibility enhances customer trust and strengthens the

perceived value of service quality in Ghana’s telecom industry. Similarly, Ogan (2023) observed that brand loyalty among Nigerian consumers increases significantly when endorsements align with cultural identity and lifestyle aspirations. Gamama and Abubakar (2021) also found that integrating emotional branding cues into service delivery strategies improves loyalty by fostering deeper psychological engagement. These findings collectively justify the need for a moderated conceptual model that recognizes the interplay between functional service delivery and symbolic marketing communication.

Conceptual Model Showing the Moderating Role of Celebrity Endorsement Credibility

Based on this synthesis, the proposed conceptual framework can be visually represented as follows:



Celebrity endorsement credibility does not function as a direct substitute for service quality. Instead, it strengthens the impact of service quality perceptions on loyalty outcomes. When endorsement credibility is high, the positive effect of reliability, responsiveness, and other service quality dimensions on loyalty becomes stronger. Conversely, when endorsement credibility is weak or misaligned, the impact of service quality on loyalty may be attenuated.

Unlike traditional service quality models that assume a direct linear relationship between quality and loyalty, the present framework recognizes the symbolic and affective complexity of emerging markets. In Nigeria's telecom industry, where network offerings are relatively homogeneous, celebrity endorsement credibility enhances brand differentiation and emotional attachment. Thus, loyalty is conceptualized not merely as a rational response to functional performance but as an outcome of cognitive–affective interaction effects.

Proposed Hypotheses

Drawing upon SERVQUAL, service quality is conceptualized as a multidimensional construct comprising tangibility, reliability, responsiveness, assurance, and empathy. Within Nigeria's telecommunications sector, these dimensions represent both functional and relational aspects of service delivery. Relationship Marketing Theory posits that sustained service performance enhances trust, commitment, and long-term relational bonds, ultimately fostering customer loyalty. The following hypotheses are proposed:

H1: Tangibility positively influences customer loyalty.

H2: Reliability positively influences customer loyalty.

H3: Responsiveness positively influences customer loyalty.

H4: Assurance positively influences customer loyalty.

H5: Empathy positively influences customer loyalty.

Moderating Relationships

H6: Celebrity endorsement credibility moderates the relationship between tangibility and customer loyalty, such that the relationship is stronger when celebrity endorsement credibility is high.

H7: Celebrity endorsement credibility moderates the relationship between reliability and customer loyalty, such that the relationship is stronger when celebrity endorsement credibility is high.

H8: Celebrity endorsement credibility moderates the relationship between responsiveness and customer loyalty, such that the relationship is stronger when celebrity endorsement credibility is high.

H9: Celebrity endorsement credibility moderates the relationship between assurance and customer loyalty, such that the relationship is stronger when celebrity endorsement credibility is high.

H10: Celebrity endorsement credibility moderates the relationship between empathy and customer loyalty, such that the relationship is stronger when celebrity endorsement credibility is high.

While service quality provides the functional foundation of customer loyalty, emotional and symbolic cues also shape customer evaluations. The Elaboration Likelihood Model explains that consumers process persuasive messages through both central (cognitive) and peripheral (affective) routes. Celebrity endorsement operates as a peripheral cue that enhances persuasion when perceived as credible. When a celebrity endorser is seen as trustworthy, expert, and attractive, their credibility strengthens the perceived value of service quality signals. Thus, celebrity endorsement credibility does not directly replace service quality; rather, it strengthens the effect of service quality on loyalty.

5. Practical and Theoretical Implications

5.1 Practical Implications

From a managerial perspective, this conceptual framework provides actionable insights for telecommunications firms operating in competitive and brand-saturated environments like Nigeria. First, it emphasizes the need for a dual strategic focus: delivering superior service quality while cultivating emotionally resonant branding through credible celebrity endorsements. Service quality improvements should remain at the core of telecom operations ensuring network reliability, prompt customer support, transparent billing, and empathetic engagement. However, such operational excellence must be communicated through relatable human symbols, particularly celebrities whose credibility and lifestyles reflect the brand's identity and target market (Lawal, 2021).

Second, telecom managers must exercise strategic discretion in selecting endorsers. Endorsements should not rely solely on popularity but on celebrity-brand congruence, that is, the alignment between the celebrity's persona and the brand's values (Nadube & Gowon, 2023). For example, using youth-oriented artists like Davido or Ayra Starr to target younger demographics can humanize a telecom brand and build identification. Conversely, deploying credible figures such as respected actors or professionals can reinforce assurance and trustworthiness among older or corporate users. Managers must also ensure endorsement consistency avoiding overexposure or mixed-brand associations that could dilute credibility.

Finally, this framework encourages firms to adopt integrated marketing communication strategies that blend traditional service excellence with affective storytelling. Celebrity endorsements should not stand in isolation but form part of broader customer engagement campaigns that communicate empathy, reliability, and innovation across both physical and digital service touch points.

5.2 Theoretical Implications

Theoretically, this study contributes to the evolving discourse on service marketing and consumer behavior by extending the SERVQUAL model to incorporate symbolic communication variables. Traditional service quality theories have largely emphasized cognitive and functional determinants of loyalty. However, this framework integrates affective and symbolic dimensions, reflecting the reality that modern consumers—especially in culturally dynamic markets—respond not only to service performance but also to emotional cues and identity-based associations (Adebiyi, 2021; Orina, 2022). Furthermore, the model bridges the rational–emotional dichotomy in marketing theory by integrating Relationship Marketing Theory and ELM within a single explanatory structure. It demonstrates that loyalty is not a linear consequence of satisfaction but a multidimensional construct shaped by trust, commitment, and peripheral persuasion. This integrative perspective advances theoretical understanding of how credibility and emotional congruence enhance the conversion of satisfaction into sustained loyalty.

Finally, this conceptual framework opens new avenues for empirical testing in emerging market contexts. Future research could apply Structural Equation Modeling (SEM) or Partial Least Squares (PLS) techniques to validate the proposed relationships, explore the moderating strength of celebrity endorsement, and assess potential mediating effects of satisfaction and trust. Such empirical validation would not only reinforce theoretical robustness but also inform localized marketing strategies for telecom operators and other service-oriented firms in Africa and beyond.

The proposed model underscores that customer loyalty in Nigeria’s telecommunications industry is driven by both functional service performance and symbolic affective reinforcement. Superior service quality establishes satisfaction and trust, while credible celebrity endorsement amplifies emotional attachment and advocacy. By integrating these dimensions, the framework provides a comprehensive, contextually grounded understanding of loyalty formation in emerging economies.

6. Conclusion

This conceptual paper advances the discourse on customer loyalty by proposing an integrative framework that combines service quality dimensions and celebrity endorsement attributes to explain loyalty formation within the Nigerian telecommunications industry. Drawing upon SERVQUAL Theory (Parasuraman et al., 1988), Relationship Marketing Theory (Morgan & Hunt, 1994), and the Elaboration Likelihood Model (Petty & Cacioppo, 1986), the framework positions service quality as the functional foundation of loyalty while recognizing celebrity endorsement as a symbolic amplifier

that strengthens the affective and perceptual bonds between customers and telecom brands. The analysis reaffirms that the traditional determinants of loyalty such as reliability, responsiveness, assurance, tangibility, and empathy remain critical predictors of customer satisfaction and retention in service industries. However, in today's saturated and highly competitive telecom markets, these functional elements alone are insufficient to secure long-term loyalty. Modern consumers, particularly in emerging markets like Nigeria, are influenced not only by the rational assessment of service performance but also by emotional, cultural, and identity-driven factors that shape their brand preferences and behaviors (Adebiyi, 2021; Ogan, 2023). In this regard, celebrity endorsement credibility comprising expertise, trustworthiness, and attractiveness acts as a strategic moderating mechanism that enhances the effectiveness of service quality in building enduring loyalty.

The proposed conceptual framework therefore provides a dual-path explanation of loyalty formation: A cognitive route, through which customers evaluate service quality and form satisfaction and trust (as described by SERVQUAL and Relationship Marketing Theory); and An affective route, through which symbolic cues such as celebrity credibility influence perceptions, reinforce emotional connection, and encourage behavioral commitment (as described by the Elaboration Likelihood Model). This integrative perspective contributes to theory by extending the boundaries of traditional service quality models, embedding symbolic communication variables into the loyalty equation. It underscores that loyalty is not solely a function of performance satisfaction but also of psychological meaning-making and identity alignment between consumers and brands. By doing so, the paper addresses a critical gap in existing marketing literature, which has often examined service quality and celebrity endorsement in isolation rather than as interdependent constructs influencing loyalty outcomes.

From a managerial standpoint, the framework provides practical guidance for telecom operators seeking to navigate Nigeria's dynamic market environment. Firms must not only ensure consistent and superior service delivery but also engage in strategic celebrity-brand partnerships that enhance credibility, emotional appeal, and cultural resonance. When effectively aligned, these dual strategies can transform transactional interactions into long-term relational bonds, converting satisfied customers into brand advocates.

Looking ahead, this paper encourages future empirical research to validate the proposed framework using quantitative modeling techniques such as Structural Equation Modeling (SEM) or Partial Least

Squares (PLS). Empirical validation would enable scholars to statistically test the moderating role of celebrity endorsement in the service quality–loyalty relationship, assess the relative strength of each SERVQUAL dimension, and determine how demographic or cultural factors mediate these effects in Nigeria’s telecom sector. By bridging cognitive, relational, and symbolic dimensions, the proposed framework not only advances academic understanding but also offers practical strategies for achieving durable customer loyalty in Nigeria’s telecommunications industry and comparable emerging markets.

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MODERATING ROLE OF ENTREPRENEURIAL RESILIENCE IN THE RELATIONSHIP
BETWEEN LEARNING ORIENTATION AND PERFORMANCE OF SMALL AND
MEDIUM ENTERPRISES (SMES) IN KADUNA STATE OF NIGERIA

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Abstract

Small and Medium Scale Enterprises (SMEs) in developing countries face multiple challenges that affect their survival and limit their performance. Drawing from the Resource-Based View theory, this study investigated the moderating role of entrepreneurial resilience in the relationship between learning orientation and SME performance. The purpose of this paper is to examine how entrepreneurial resilience moderates the relationship between learning orientation and performance of SMEs in Kaduna State, Nigeria. The study employed a cross-sectional survey design. A simple random sampling technique was used to select a sample of 377 SMEs operating in Kaduna State, Nigeria, from a population of 21,615 registered enterprises. Data were analyzed using the Statistical Package for Social Science (SPSS) and Partial Least Squares Structural Equation Modeling (PLS-SEM). The findings demonstrate that learning orientation was positively and significantly related to SME performance. It was also discovered that entrepreneurial resilience positively relates to SME performance and significantly moderates the relationship between learning orientation and SME performance. It is recommended that SMEs should properly utilize learning orientation as a strategic tool in their businesses, as it significantly assists them in achieving competitive advantage and enhancing performance.

Keywords: SMEs, Performance, Entrepreneurial Resilience, Learning Orientation

1.0 Introduction

Globally, Small and Medium-sized Enterprises (SMEs) are widely acknowledged as playing a crucial role in the economic growth and development of nations, both in advanced and emerging economies (Organisation for Economic Co-operation and Development [OECD], 2022). In developing countries, SMEs are essential, as they constitute a significant portion of the overall business landscape, contribute substantially to national Gross Domestic Product (GDP), and provide employment for a large segment of the workforce (World Bank, 2020). However, the performance of SMEs in Nigeria has been relatively weak when compared to SMEs in other developing countries. This disparity suggests a need to investigate and understand the factors influencing the comparatively lower performance of SMEs in Nigeria (National Bureau of Statistics [NBS], 2022).

Furthermore, the small and medium enterprise sector contributes approximately 47.8% of total employment and 37.4% of GDP to the Malaysian economy (Yusriza, 2021). In South Africa, SMEs account for around 52% of the country's GDP and 61% of all jobs. Meanwhile, in Ghana and Kenya, SMEs account for roughly 70% and 60% of total employment, respectively, as well as 70% and 80% of GDP in those countries, respectively (Yahaya & Nadarajah, 2023).

Comparing SME performance across different countries can offer valuable insights into the factors that contribute to SME performance in various national contexts (Laukkanen et al., 2013). Performance data from other nations can aid policymakers and business professionals by providing comparative information that informs policy decisions and initiatives targeted at supporting SME growth, creativity, and innovation. Furthermore, such comparative data can help improve SMEs' access to financing, which in turn can boost employment generation within the sector (Basco et al., 2020). Therefore, a focus on continuous performance improvement is essential for SME growth and progress.

Irrespective of the economic and societal contributions of SMEs, their high failure rate is a major concern for entrepreneurs, policymakers, and stakeholders. Research shows that about one-third of SMEs fail within their first two years of operation, and more than half fail within the first five years of being established. This alarmingly high failure rate among SMEs is a significant issue that needs to be addressed (United Nations Conference on Trade and Development [UNCTAD], 2019). Similarly, according to the Small and Medium Enterprises Development Agency of Nigeria [SMEDAN] (2021)

report, 70% of Nigerian SMEs fail within their first 3-5 years of operation, and only 5-10% reach the maturity stage to become large enterprises.

Similarly, in Nigeria, Adamu, Wan, and Gorondutse (2020) argued that SMEs are seeking ways to improve their performance and attain competitive advantage over competitors. This is because Moore (2020) reported that over 95% of SMEs in Nigeria fail within their first five years. This evidence of SME failure in Nigeria was confirmed by the Sustainable Development Goals (SDG) index report (2020), which ranked Nigeria 139th compared to the United Kingdom's 11th position, South Africa's 108th position, and Ghana's 110th position among 163 countries.

Moreover, the underperformance of Nigerian SMEs has raised significant concerns, especially among owner-managers and the government. Owner-managers of these enterprises have consistently leveraged their skills and expertise to tackle the challenges faced by Nigerian SMEs. Meanwhile, the government has established SMEDAN and implemented various policies and programs aimed at enhancing the SME sector. These initiatives focus on promoting wealth creation, empowering communities, improving access to credit, utilizing local raw materials, alleviating poverty, encouraging the use of local technology, facilitating access to both local and foreign markets, and fostering rural development (SMEDAN & NBS, 2021; 2017). However, these efforts have not resolved the problem of poor performance among SMEs in the country, as most still fail within their first five years of operation (SMEDAN, 2021). Consequently, ensuring the survival and improving the performance of SMEs is a significant concern for both the Nigerian government and policymakers, so that the sector can compete effectively in global markets.

SMEs in Kaduna State, despite their potential, encounter challenges that impede their performance. According to Abdulkadir and Tijjani (2023), only about 40% of SMEs in Kaduna State meet basic performance benchmarks.

Firms are composed of various resources that can be leveraged to create a sustainable competitive advantage. These resources can be orientations, assets, attributes, techniques, etc. By effectively combining these diverse resources, firms can develop capabilities that allow them to establish a sustainable competitive edge in the market (Arsawan et al., 2022; Hossain et al., 2021; Mahdi et al., 2019). This study investigates strategic orientations that can influence SME performance, specifically examining how Entrepreneurial Resilience (ER) moderates the relationship between Learning Orientation (LO) and SME performance—an area previous studies have overlooked. While

substantial research exists on LO, less focus has been given to how these orientations interact with ER and collectively influence SME performance.

Entrepreneurial Resilience refers to a set of dynamic adaptive mechanisms that enable entrepreneurs to remain forward-looking when confronted with unfavorable economic conditions and market disruptions. A key element of ER is the ability to deal with unpleasant personal, business, and disaster circumstances while remaining optimistic (Alshebami & Murad, 2022). Learning Orientation refers to the attitude and tendency of an organization to attach importance to learning and regard it as a valuable activity (Yang et al., 2022).

The Global Innovation Index (2020) and Global Talent Competitiveness Index (2020) confirm that SMEs in Nigeria show signs of underperformance compared to many developing countries, which serves as a justification for conducting this study. In this regard, various studies have attempted to explore and understand the factors contributing to the low performance of SMEs in Nigeria and have found inconsistency in their results. However, despite several studies examining different strategic factors affecting SME performance, there are limited empirical studies on the relationship between learning orientation, entrepreneurial resilience, and SME performance in a single model.

Therefore, since recent research has moved toward examining non-linear effects, the current study uses entrepreneurial resilience as a moderator in the relationship between learning orientation and SME performance. In this regard, the Resource-Based View (RBV) theory will be used to explain the relationships between the study variables.

Similarly, many studies that examined the relationship between learning orientation and SME performance have reported mixed findings. For example, Yang et al. (2022) found a direct positive impact on performance. In addition, Isichei et al. (2023) found that learning orientation has a positive link to SME export performance. On the other hand, some scholars have found insignificant relationships between learning orientation and SME performance. For example, Beneke et al. (2016) found an insignificant relationship between learning orientation and SME performance. Similarly, Lam et al. (2011) reported a negative relationship between learning orientation and SME performance. These mixed or inconsistent findings provide the basis for introducing a moderator, according to Baron and Kenny (1986) and Frazier et al. (2004), and hence will be used in this current study.

2.0 Literature Review and Hypothesis Development

2.1 Concept of SME Performance

Performance is considered the most crucial variable in management research and perhaps the most significant indicator for evaluating organizational outcomes (Gavrea, Ilies, & Stegorean, 2011). It has been observed that there is no single, universally accepted operational definition of firm performance that the majority of scholars agree upon. Instead, there is a wide range of diverse interpretations suggested by various individuals based on their personal perceptions over time. Giving meaning to the concept may be abstract, general, or lack clear definition. Over the years, from the 1950s to the present day, firm performance has often been considered equivalent to organizational efficiency, which represents the degree to which an organization, as a social system with limited resources and means, achieves its goals without excessive effort from its members. The criteria commonly used for assessing performance include productivity, flexibility, and inter-organizational tensions (Georgopoulos & Tannenbaum, 1957, as cited in Taouab & Issor, 2019).

Firm performance is the attainment of business objectives. Enterprises have to realize different objectives within a certain period, expressed in efficiency, quality, productivity, and responsiveness (Nguyen et al., 2024). Researchers and policymakers agree that increased small business performance steers the development and well-being of societies (Chukuakadibia Eresia & Ubochioma Udo, 2024). SME performance forms a very critical part of the Nigerian economy. The sector is a major engine that encourages the creation of jobs and wealth in the country's economic system. SME performance acts as a significant factor linked to strengthening and improving the country's development (Eniola & Ektebang, 2014). SME performance is quite significant for the economic growth of any country, especially developing countries. Sustainable development and economic progress are fundamentally based on dynamic SME performance, which enables enterprises to compete with global challenges and in hyper-competitive environments. SMEs are globally known as the growth engines and lifelines of thriving economies (Tamoor, Madya, Halim, & Rosman, 2019).

2.2 Learning Orientation

According to Werlang and Rossetto (2019), learning orientation is defined as an organizational attitude focused on learning; i.e., a learning-oriented firm constantly attempts to renew its resources through learning. In its simplest form, organizational learning means the development of new knowledge with the capacity to change the firm's behavior. However, behavior will only change if the

firm is willing to learn and to incorporate a new vision based on the knowledge acquired, which will enable it to achieve superior performance compared to its competitors.

Learning orientation is an important organizational value that facilitates knowledge generation and sharing within the organization. It reinforces learning norms and encourages members to acquire new knowledge, which in turn enhances the organization's capabilities and enables superior performance. This learning orientation fosters a learning culture in the organization and supports its long-term survival and growth (Jawad, Kamariah, & Ch. S. A., 2015). Learning orientation refers to the degree to which organizations acquire and disseminate information related to changes in the marketplace, customers' expectations and needs, competitors' actions, and new technological developments in order to create new products or services that are superior to those offered by competitors (Calantone, Cavusgil, & Zhao, 2002; Pett & Wolff, 2016; Eliakira & Elia, 2024). On the other hand, learning orientation is viewed as a strategic resource that influences the way business firms operate in the marketplace (Dukeov, Bergman, Heilmann, & Nasledov, 2020).

2.3 Entrepreneurial Resilience

Entrepreneurial Resilience refers to the dynamic adaptive mechanisms that enable entrepreneurs to remain forward-looking when confronted with unfavorable economic conditions and market disruptions. A key element of entrepreneurial resilience is the ability to deal with unpleasant personal, business, and disaster circumstances while remaining optimistic (Alshebami & Murad, 2022). Resilience in the entrepreneurial context encompasses the capacity to recover from setbacks, adapt to changing circumstances, and continue pursuing business objectives despite challenges.

The literature on SME resilience in Africa and other developing countries is limited. Saad et al. (2021) reviewed literature from both developing and developed countries and concluded that insufficient knowledge exists about the resilience of SMEs in developing countries. This gap underscores the importance of examining entrepreneurial resilience as a potential moderator in the relationship between strategic orientations and firm performance.

Entrepreneurial resilience enables SME owner-managers to persist in their learning efforts even when faced with obstacles, thereby enhancing the positive effects of learning orientation on performance. Resilient entrepreneurs are better equipped to apply knowledge gained through learning orientation in challenging circumstances, transforming potential failures into learning opportunities that ultimately improve firm performance.

2.4 Learning Orientation and SME Performance

There are different views regarding the linkage between LO and SME performance, but many of these views conclude that LO has a significant impact on SME performance. A study by Said, Abdul-Talib, and Hassan (2023) titled "The Impact of Learning Orientations on Nigerian SMEs' Performance" found that learning orientations have a significant effect on Nigerian SMEs' performance.

Similarly, a study by Yahaya, Geidam, Abdullahi, and Iqbal (2025) examining the influence of strategic orientation on the performance of small and medium enterprises in Nigeria employed a quantitative, cross-sectional research design, collecting data online from 406 SMEs using stratified sampling. PLS-SEM 4 was used for data analysis. Findings confirmed that LO significantly influences SME performance. While this study provided valuable insights into the relationships between LO and SME performance, several limitations warrant attention. The study collected data online, which may lead to sample bias, especially if access to technology varies, and may also affect data quality where responses could be less reliable due to lack of oversight and potential for misunderstandings. The present study addresses this gap because data were collected from owner-managers in person, leading to higher engagement and quality control.

Another study by Said, Abdul-Talib, and Hassan (2023) titled "The Impact of Market, Learning, and Entrepreneurial Orientations on Nigerian SMEs' Performance" found that learning and entrepreneurial orientations have a significant effect on Nigerian SMEs' performance. The study suggested that further researchers investigate other strategic variables postulated to affect SME performance, such as alliance, technological, and employee orientation. The present study addresses this gap by examining entrepreneurial resilience as a moderator.

In contrast, a study by Lam, Lee, Ooi, and Lin (2011) titled "The Relationship between TQM, Learning Orientation and Market Performance in Service Organizations: An Empirical Analysis" collected sample data from 146 service firms in Malaysia. Using structural equation modeling to examine the relationships, the survey evidence identified that the adoption of TQM practices in service organizations is positively and significantly related to both learning orientation and market performance. However, learning orientation did not show any significant correlation with market performance.

Similarly, a study by Beneke, Blampied, Dewar, and Soriano (2016) titled "The Impact of Market Orientation and Learning Orientation on Organisational Performance: A Study of Small to Medium-

Sized Enterprises in Cape Town, South Africa" revealed a significant relationship between market orientation and organisational performance. However, in contrast to other studies in the developed world, this study found that learning orientation has neither a significant effect on organisational performance nor a moderating effect on the relationship between market orientation and organisational performance of SMEs. The authors advocated for further research to understand the nuances distinguishing developing and developed countries.

From the above review of previous empirical studies (Miric, Nikolic, & Zlatanovic, 2023; Said, Abdul-Talib, & Hassan, 2023; Karpacz & Wojcik-Karpacz, 2024), it was found that the relationship between learning orientation and performance of SMEs reports a positive and significant relationship. However, studies by Lam et al. (2011) and Beneke et al. (2016) reported an insignificant relationship. This provides a clear justification for introducing a moderator to strengthen the relationship, as suggested by Baron and Kenny (1986) and Frazier et al. (2004). In particular, this study investigates how entrepreneurial resilience moderates the relationship between learning orientation and SME firm performance.

2.5 The Moderating Role of Entrepreneurial Resilience

The purpose of introducing a moderator is to strengthen the direction of the relationship between independent variables and a dependent variable and to gain a deeper understanding of the complex relationships between variables. In this study, the relationship between LO and SME performance is expected to be strengthened by ER serving as a moderator. Entrepreneurial resilience enables SMEs to persist in their learning efforts despite challenges, thereby enhancing the translation of learning orientation into improved performance outcomes. Resilient entrepreneurs are better positioned to apply knowledge gained through learning orientation in adverse circumstances, converting potential threats into opportunities for growth and innovation.

2.6 Hypothesis Development

Based on the theoretical perspective and empirical evidence discussed above, the following hypotheses are proposed:

H1: Learning Orientation has a significant positive effect on SME performance.

H2: Entrepreneurial Resilience has a significant positive effect on SME performance.

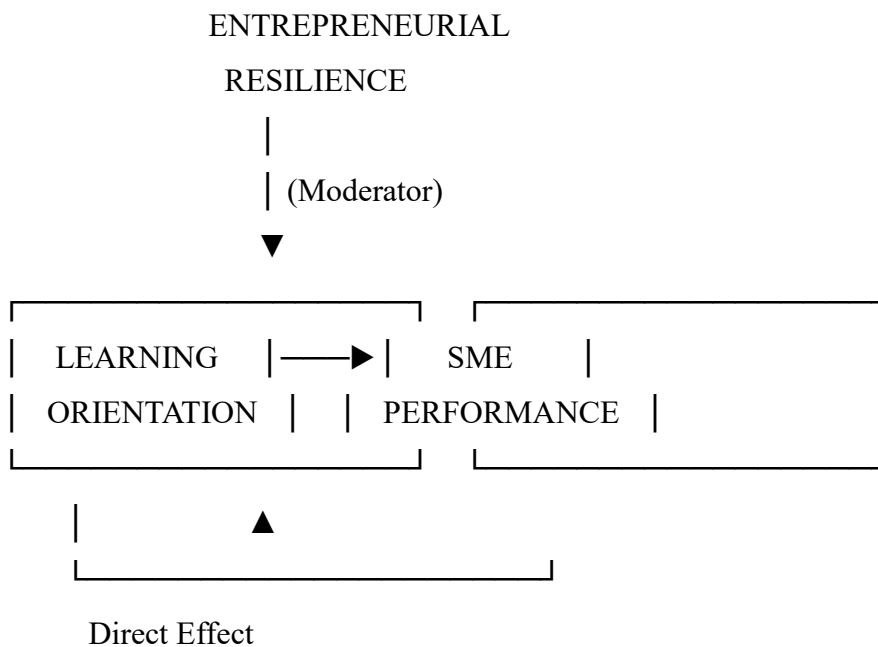
H3: Entrepreneurial Resilience significantly moderates the relationship between Learning Orientation and SME performance, such that the positive relationship between Learning Orientation and SME performance is stronger when Entrepreneurial Resilience is high.

2.7 Conceptual and Theoretical Framework

Based on the theoretical perspective and empirical evidence discussed above, a conceptual model of the study is proposed. Specifically, the conceptual model suggests that Learning Orientation is directly related to SME Firm Performance, and this relationship is moderated by Entrepreneurial Resilience.

Figure 1: Conceptual Framework

text



The RBV theory was used to explain the relationship of the variables presented above. According to Barney (1991), firms' resources (internal and external) can contribute to competitive advantage and firm performance improvement if they are valuable, rare, inimitable, and non-substitutable (VRIN). The theory contends that firms gain competitive advantage when they integrate unique resources that cannot be easily copied by competitors. Thus, the present study considers learning orientation as an internal resource of the firm that creates competitive advantage and higher performance. In other words, this study argues that if SMEs have access to different knowledge and possess the resilience to apply that knowledge in challenging circumstances, they will attain competitive advantage and thus improve the performance of their business operations. Entrepreneurial resilience is conceptualized as

a capability that enables firms to leverage their learning orientation resources more effectively, particularly in adverse conditions.

3.0 Methodology

3.1 Research Design

This study employed a cross-sectional survey design in which data were collected between January 5 and January 27, 2025. The cross-sectional approach was appropriate for examining the relationships between variables at a single point in time, consistent with the study's objective of testing the moderating role of entrepreneurial resilience.

3.2 Population and Sample

SME owner-managers operating in Kaduna State, Nigeria, were taken as the unit of analysis. The population of the study comprised 21,615 registered SMEs (SMEDAN, 2021), and a sample of 377 was obtained from the population using Krejcie and Morgan's (1970) table for sample size determination. A simple random sampling technique was used in selecting the sample to ensure representativeness and minimize selection bias.

3.3 Variable Measurement

All variables were measured using a 5-point Likert scale ranging from 1 = "strongly disagree" to 5 = "strongly agree."

Learning Orientation was measured using seven items adapted from Okojie and Omoregbee (2012). The items captured the extent to which SMEs engage in knowledge acquisition, information dissemination, and shared interpretation of information.

Entrepreneurial Resilience was measured using twelve items adopted from Fatoki (2018). The items assessed the capacity of SME owner-managers to cope with adversity, adapt to changes, and recover from setbacks.

SME Firm Performance was measured using six items adapted from Venkatraman and Ramanujam (2015). The items captured subjective assessments of performance relative to competitors, including growth in sales, market share, and profitability.

3.4 Pilot Study

Prior to the main analysis, a pilot study was conducted on 35 respondents to assess the validity, reliability, normality, and multicollinearity assumptions. The pilot study confirmed that all

measurement properties met the recommended thresholds (Hair, Hult, Ringle, Sarstedt, & Thiele, 2017).

3.5 Data Analysis

After successfully satisfying all assumptions, the data collected were analyzed using SmartPLS software for Partial Least Squares Structural Equation Modeling (PLS-SEM) as the statistical technique (Vinzi, Trinchera, & Amato, 2010). To validate and evaluate the model for this study, Hair et al. (2017) recommend a two-stage assessment: measurement models (also known as outer models) and structural models (also known as inner models).

4.0 Results

4.1 Measurement Model Assessment

To assess the measurement model in this study, the researchers scrutinized the reliability of individual items measuring each potential construct. This evaluation encompassed internal consistency reliability (specifically composite reliability), discriminant validity, and convergent validity for each reflective construct, following the guidelines of Hair et al. (2017). While Hair et al. (2017) suggest that an outer loading of 0.70 is deemed reliable and acceptable, they contend that an indicator should only be removed if its elimination results in an increase in the construct's Average Variance Extracted (AVE) or composite reliability.

Table 1: Measurement Model Results

Constructs	Indicators	Loadings	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Entrepreneurial Resilience	ER1	0.80	0.82	0.86	0.61
	ER3	0.75			
	ER4	0.78			

Constructs	Indicators	Loadings	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Learning Orientation	ER7	0.78	0.86	0.90	0.70
	LO2	0.80			
	LO5	0.75			
	LO6	0.90			
	LO10	0.89			
SMEs Performance	SP1	0.84	0.91	0.94	0.80
	SP2	0.91			
	SP3	0.93			
	SP4	0.89			

The measurement model evaluation is crucial in validating latent constructs in structural equation modeling. One of the key aspects of construct validity is indicator reliability, which ensures that each observed variable effectively measures its respective latent variable (Hair et al., 2019). In this study, the outer loadings of all indicators exceed the recommended threshold of 0.70 (Fornell & Larcker, 1981), demonstrating acceptable indicator reliability. Notably, SMEs Performance exhibits the highest factor loadings (ranging from 0.84 to 0.93), indicating that these indicators strongly represent the construct. Entrepreneurial Resilience shows slightly lower loadings, with ER3 (0.75) being the lowest,

though still within an acceptable range. These findings suggest that the measurement items sufficiently capture the intended constructs.

Internal consistency reliability is assessed using Cronbach's Alpha and Composite Reliability (CR), both of which should exceed 0.70 to ensure construct reliability (Nunnally & Bernstein, 1994). The results indicate that all constructs surpass this threshold, with Entrepreneurial Resilience ($\alpha = 0.82$, CR = 0.86), Learning Orientation ($\alpha = 0.86$, CR = 0.90), and SMEs Performance ($\alpha = 0.91$, CR = 0.94). These values confirm that the constructs exhibit high internal consistency, aligning with recommendations from Bagozzi and Yi (1988). Particularly, the SMEs Performance construct demonstrates exceptional reliability, reinforcing its robustness in explaining performance-related factors. This reliability ensures that the constructs maintain measurement consistency, reducing the risk of random errors.

Furthermore, convergent validity is established through the Average Variance Extracted (AVE), which should exceed 0.50 to indicate that the construct explains more than half of the variance in its indicators (Fornell & Larcker, 1981). The AVE values in this study—Entrepreneurial Resilience (0.61), Learning Orientation (0.70), and SMEs Performance (0.80)—confirm strong convergent validity. Particularly, SMEs Performance exhibits the highest AVE, demonstrating that its indicators are highly representative of the underlying construct. The strong AVE values across all constructs suggest that the model possesses sufficient construct validity, which is essential for ensuring the accuracy of SEM analysis (Hair et al., 2019). These findings provide confidence in the robustness of the measurement model, ensuring its suitability for further structural analysis.

To ensure discriminant validity, Duarte and Amaro (2018) recommended utilizing the Heterotrait-Monotrait (HTMT) ratio as a more suitable and sensitive approach.

Table 2: Heterotrait-Monotrait Ratio (HTMT)

Constructs	Entrepreneurial Resilience	Learning Orientation	SMEs Performance
Entrepreneurial Resilience			

Constructs	Entrepreneurial Resilience	Learning Orientation	SMEs Performance
Learning Orientation	0.51		
SMEs Performance	0.50	0.64	

The HTMT is a key measure for assessing discriminant validity in structural equation modeling. According to Henseler, Ringle, and Sarstedt (2015), HTMT values should be below 0.85 to confirm that constructs are distinct. In this study, the HTMT values between Entrepreneurial Resilience, Learning Orientation, and SMEs Performance range from 0.50 to 0.64, indicating that the constructs are well-separated and not excessively correlated. Specifically, the strongest relationship is between Learning Orientation and SMEs Performance (HTMT = 0.64), suggesting a moderate connection while maintaining distinct conceptual boundaries. The HTMT of 0.51 between Entrepreneurial Resilience and Learning Orientation further supports that while resilience may influence learning, they remain separate constructs.

Similarly, Entrepreneurial Resilience and SMEs Performance (HTMT = 0.50) show a reasonable distinction, reinforcing the validity of the model. These values align with Fornell and Larcker's (1981) criterion for establishing construct uniqueness, ensuring that each variable contributes uniquely to the theoretical framework. As a result, the model meets the discriminant validity requirements, confirming that each construct captures a distinct aspect of entrepreneurial behavior and firm performance, making it suitable for further hypothesis testing and structural model evaluation.

4.2 Structural Model Assessment

Upon fulfilling all the criteria of the measurement model, the evaluation shifted to the structural model. The initial phase of the structural model assessment entailed testing the theoretical relationships. In particular, the direct and moderating effects were scrutinized based on 377 cases, utilizing 5,000 bootstrap samples, as outlined by Hair, Sarstedt, Hopkins, and Kuppelwieser (2014).

Table 3: Structural Model Results

Relationship	Beta	Standard Deviation	T Statistics	P Values	Decision
H1: LO → SMEs Performance	0.45	0.04	10.90	0.00	Supported
H2: ER → SMEs Performance	0.29	0.04	7.29	0.00	Supported
H3: LO*ER → SMEs Performance	0.09	0.04	2.20	0.03	Supported

The structural model analysis provides insights into the relationships between Entrepreneurial Resilience (ER), Learning Orientation (LO), and SMEs Performance by evaluating path coefficients, significance levels, and effect sizes.

Hypothesis 1 predicted that Learning Orientation has a significant positive effect on SME performance. The results show that Learning Orientation has a strong positive effect on SMEs Performance, with a coefficient of 0.45, a T-statistic of 10.90, and a p-value of 0.00, indicating high statistical significance. Therefore, H1 is supported. This finding aligns with the view that SMEs with a strong learning orientation are more adaptive, innovative, and capable of leveraging knowledge for improved performance (Sinkula, Baker, & Noordewier, 1997).

Hypothesis 2 predicted that Entrepreneurial Resilience has a significant positive effect on SME performance. The path from Entrepreneurial Resilience to SMEs Performance has a coefficient of 0.29, a T-statistic of 7.29, and a p-value of 0.00, confirming a significant positive relationship. Therefore, H2 is supported. This finding supports previous research emphasizing the role of resilience in helping SMEs navigate uncertainties, recover from setbacks, and sustain growth (Boso et al., 2017).

Hypothesis 3 predicted that Entrepreneurial Resilience significantly moderates the relationship between Learning Orientation and SME performance. The interaction effect (ER × LO → SMEs Performance) has a coefficient of 0.09, a T-statistic of 2.20, and a p-value of 0.03, indicating a statistically significant but small moderating effect. Therefore, H3 is supported. This suggests that Entrepreneurial Resilience moderates the relationship between Learning Orientation and SMEs

Performance, implying that the positive effect of learning orientation on performance is strengthened when entrepreneurial resilience is high. According to Hair et al. (2019), interaction effects with small coefficients still provide meaningful insights, particularly in complex models.

4.3 Discussion of Findings

The findings of this study provide important insights into the relationships between learning orientation, entrepreneurial resilience, and SME performance in Kaduna State, Nigeria.

Learning Orientation and SME Performance: The significant positive relationship between learning orientation and SME performance ($\beta = 0.45$, $p < 0.001$) confirms that SMEs that prioritize learning, knowledge acquisition, and information dissemination achieve better performance outcomes. This finding is consistent with previous studies (Said et al., 2023; Yahaya et al., 2025; Miric et al., 2023) that reported positive associations between learning orientation and firm performance. The result suggests that SMEs in Kaduna State benefit from fostering a learning culture that encourages employees to acquire new knowledge, share insights, and apply learning to business operations. From the RBV perspective, learning orientation serves as a valuable, rare, and difficult-to-imitate resource that enables SMEs to develop capabilities that differentiate them from competitors.

Entrepreneurial Resilience and SME Performance: The significant positive relationship between entrepreneurial resilience and SME performance ($\beta = 0.29$, $p < 0.001$) indicates that resilient owner-managers are better equipped to navigate challenges and sustain business operations. This finding aligns with Alshebami and Murad (2022) and Fatoki (2018), who emphasized the importance of resilience in entrepreneurial success. Resilient entrepreneurs demonstrate the capacity to recover from setbacks, adapt to changing circumstances, and maintain optimism in the face of adversity. These qualities enable them to persist in their business efforts, explore new opportunities, and ultimately achieve better performance outcomes. The result underscores the importance of developing resilience capabilities among SME owner-managers in Kaduna State, where businesses often face challenging operating environments.

Moderating Role of Entrepreneurial Resilience: The significant moderating effect of entrepreneurial resilience on the relationship between learning orientation and SME performance ($\beta = 0.09$, $p < 0.05$) suggests that the positive impact of learning orientation on performance is enhanced when entrepreneurs possess higher levels of resilience. This finding addresses the mixed results in previous literature regarding the learning orientation-performance relationship (Lam et al., 2011;

Beneke et al., 2016) by demonstrating that resilience serves as a boundary condition that influences the strength of this relationship. Resilient entrepreneurs are better positioned to apply knowledge gained through learning orientation, particularly when facing challenging circumstances. They are more likely to persist in learning efforts despite obstacles and to transform learning into practical applications that enhance business performance.

Although the moderating effect is relatively small ($\beta = 0.09$), it provides meaningful insight into the complex mechanisms through which strategic orientations influence firm performance. The small effect size may be attributed to the challenging business environment in which SMEs in Kaduna State operate, where multiple factors simultaneously influence performance outcomes. Nevertheless, the significant interaction confirms that entrepreneurial resilience plays a valuable role in enabling SMEs to extract greater benefits from their learning orientation efforts.

4.4 Conclusion

This study investigated the moderating role of entrepreneurial resilience in the relationship between learning orientation and SME performance in Kaduna State, Nigeria. Drawing on the Resource-Based View theory, the study developed and tested a conceptual model that positioned learning orientation as an independent variable, entrepreneurial resilience as a moderator, and SME performance as the dependent variable.

The results demonstrate that both learning orientation and entrepreneurial resilience significantly and positively influence SME performance. Furthermore, entrepreneurial resilience moderates the relationship between learning orientation and performance, indicating that the benefits of learning orientation are amplified when entrepreneurs possess higher levels of resilience. These findings align with previous studies emphasizing the importance of entrepreneurial adaptability and knowledge acquisition in enhancing firm performance (Hair et al., 2019; Henseler et al., 2015).

Learning Orientation plays the most dominant role, as indicated by its highest path coefficient (0.45), suggesting that firms that actively seek, absorb, and apply new knowledge achieve better performance outcomes. The moderation effect between Entrepreneurial Resilience and Learning Orientation suggests that firms with higher resilience benefit more from learning-oriented strategies, though the impact remains relatively small. This underscores the idea that while resilience is vital for overcoming challenges, leveraging learning-oriented behaviors amplifies performance gains.

In conclusion, the findings highlight that both Entrepreneurial Resilience and Learning Orientation are significant predictors of SME Performance, with Learning Orientation having the strongest influence. The interaction effect suggests that resilience alone is not enough; firms must also engage in continuous learning and knowledge acquisition to sustain long-term success. These insights provide valuable implications for SME managers and policymakers, suggesting that fostering a learning-driven culture alongside resilience-building strategies can significantly enhance business outcomes.

4.5 Recommendations

Based on the findings of this study, the following recommendations are proposed:

First, to foster a strong learning culture within SMEs: Since Learning Orientation ($\beta = 0.45$, $p = 0.00$) has the strongest impact on SMEs' performance, businesses should prioritize continuous learning and knowledge acquisition. Managers should encourage training programs, workshops, and knowledge-sharing platforms to enhance employees' skills and adaptability. Additionally, adopting digital learning tools and mentorship programs can further strengthen a firm's ability to learn and apply new knowledge effectively. SMEs should institutionalize learning processes by creating formal mechanisms for capturing, storing, and disseminating knowledge throughout the organization.

Second, to strengthen entrepreneurial resilience for business sustainability: The results indicate that Entrepreneurial Resilience ($\beta = 0.29$, $p = 0.00$) plays a significant role in enhancing SME performance. To build resilience, SMEs should develop crisis management strategies, foster adaptive leadership, and encourage risk-taking in a structured manner. Financial planning, diversification of revenue streams, and cultivating a strong support network (e.g., industry partnerships, business associations, mentorship programs) can also improve SMEs' resilience in uncertain business environments. Owner-managers should engage in continuous personal development to enhance their psychological capital and coping mechanisms.

Third, to integrate learning with resilience for maximum impact: The moderation effect of Entrepreneurial Resilience on Learning Orientation ($\beta = 0.09$, $p = 0.03$) suggests that businesses benefit most when they combine both resilience and learning strategies. SMEs should adopt an agile business model where resilience is built through learning experiences, such as analyzing past failures, leveraging customer feedback, and continuously iterating business strategies. This approach ensures that businesses can not only withstand challenges but also turn them into growth opportunities.

Entrepreneurs should view challenges as learning opportunities and use setbacks as catalysts for organizational improvement.

Fourth, to encourage government and institutional support for SMEs: Policymakers should support SMEs by providing access to funding, mentorship, and training programs that enhance both resilience and learning capabilities. Offering subsidized training initiatives, innovation grants, and business incubators can help SMEs build the necessary skills to remain competitive. Governments should also consider creating policy frameworks that support digital transformation and knowledge-based economies. Specifically, SMEDAN and other relevant agencies should develop programs specifically designed to enhance entrepreneurial resilience among SME owner-managers in Kaduna State and across Nigeria.

4.6 Limitations and Suggestions for Future Research

While this study provides valuable insights, several limitations should be acknowledged. First, the cross-sectional design captures relationships at a single point in time, which limits the ability to establish causal relationships. Future research could employ longitudinal designs to examine how the relationships between learning orientation, entrepreneurial resilience, and performance evolve over time.

Second, the study focused on SMEs in Kaduna State, which may limit the generalizability of findings to other regions in Nigeria or other countries. Future research could replicate this study in different geographical contexts to enhance external validity.

Third, the study relied on subjective measures of performance, which, while commonly used in SME research, may be subject to respondent bias. Future studies could incorporate objective performance measures where available.

Fourth, the moderating effect of entrepreneurial resilience, while significant, was relatively small. Future research could explore other moderating or mediating factors that might further explain the learning orientation-performance relationship, such as innovation capabilities, market dynamism, or environmental turbulence. Additionally, researchers could investigate other strategic orientations (e.g., technology orientation, market orientation) and their interactions with entrepreneurial resilience in influencing SME performance.

Finally, qualitative research approaches could provide deeper insights into how entrepreneurial resilience manifests in practice and how SME owner-managers develop and maintain resilience in challenging business environments.

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THE MODERATING ROLE OF ENTREPRENEURIAL RESILIENCE ON THE
RELATIONSHIP BETWEEN MARKET ORIENTATION AND SME PERFORMANCE.

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Abstract

The persistent poor performance and lack of resilience among Nigerian SMEs form the rationale for this study. This research examines the moderating role of entrepreneurial resilience on the relationship between market orientation and the performance of SMEs in Kaduna State, Nigeria. Employing a cross-sectional survey design, data were collected from SMEs operating in Kaduna State. A simple random sampling technique was used to select a sample of 377 SMEs from a population of 21,615 registered businesses. The data were analyzed using the Statistical Package for Social Science (SPSS) and Partial Least Squares Structural Equation Modeling (PLS-SEM). The findings demonstrate that entrepreneurial resilience has a positive and significant effect on SME performance. Similarly, market orientation has a positive and significant effect on SME performance. Crucially, the moderation analysis reveals that entrepreneurial resilience significantly strengthens the relationship between market orientation and SME performance. The study recommends collaborative efforts between SMEs, government, and its agencies (such as SMEDAN, CBN, NIRSAL Microfinance Bank, and KACCIMA) to develop and implement effective strategies that foster both market orientation and entrepreneurial resilience, as these are vital for achieving competitive advantage and enhancing business performance.

Keywords: Market Orientation, Entrepreneurial Resilience, Performance, SMEs

1.1 Introduction

Globally, researchers and policymakers recognize that Small and Medium Enterprises (SMEs) play a crucial role in delivering economic, social, and environmental benefits at both regional and national levels (Moses, Oladapo, Fayigbe, & Babalola-Alabi, 2025; Permatasari & Gunawan, 2023; Bello & Tijjani, 2022). In Nigeria, SMEs make a significant contribution to GDP, employment generation, and

poverty reduction (Adeleye & Oyewole, 2023). Nonetheless, despite their potential, many SMEs in Kaduna State encounter obstacles that impede their performance. Ahamed and Yusuf (2021) stated that only around 40% of SMEs in Kaduna State achieve fundamental performance standards, highlighting the necessity for a better understanding of the factors that affect their performance.

Reports such as the Global Talent Competitiveness Index (GTCI, 2022) and the Global Innovation Index (GII, 2024) indicate that SMEs in Nigeria are underperforming relative to those in numerous other developing countries. Consequently, several studies have sought to investigate the reasons behind this poor performance, often revealing inconsistent findings. While many studies have examined different strategic factors affecting SME performance, there is limited empirical research that investigates the relationship between market orientation, entrepreneurial resilience, and SME performance within a single, integrated model. Given that recent research has moved toward examining non-linear effects, this study proposes that entrepreneurial resilience moderates the relationship between market orientation and SME performance. The Resource-Based View (RBV) theory is employed to explain these relationships.

Previous studies examining the direct relationship between market orientation and SME performance have reported mixed findings. For example, Solikahan and Mohammad (2019) and Quimada, Ibarra, and Lazaro (2024) found a significant and positive relationship. Conversely, scholars such as Aliyu, Ahmed, and Utai (2015) found a negative relationship, while Hassen and Singh (2020) and Shehu and Mahmood (2014) found an insignificant relationship. These mixed findings provide a strong basis for introducing a moderator—in this case, entrepreneurial resilience—to potentially clarify and strengthen the understanding of the market orientation-performance link (Baron & Kenny, 1986).

2.0 Literature Review and Hypothesis Development

2.1 Concept of SME Performance

SME performance refers to an organization's capability to attain financial stability, operational efficiency, and sustainable growth, all while satisfying the expectations of its stakeholders (Abdulkadir & Tijjani, 2025). Pulka (2019) defines it as the ability to effectively harness, integrate, and utilize diverse internal and external resources to achieve specific objectives, leading to job creation, GDP growth, and improved community living standards. Firm performance is fundamentally the attainment of business objectives, often measured by efficiency, quality, productivity, and market responsiveness (Nguyen et al., 2024). Researchers and policymakers agree that increased small

business performance is a key driver of societal development and well-being (Chukuakadibia & Ubochioma, 2024).

2.2 Concept of Market Orientation

Market orientation is a business approach that focuses on identifying and meeting the needs and wants of customers through the integration of marketing strategies throughout the organization. It reflects the degree to which a firm aligns its activities with the needs and preferences of its customers and competitors (Odello, 2024). Acquiring market orientation is a key means through which an enterprise can beat competition, win customer loyalty, and achieve business performance and scalability (Adeniyi & Adeeko, 2024). Akroush and Mahadin (2019) note that market orientation depicts an enterprise's culture, focusing on delivering superior value to its customers. Studies have shown that a strong market orientation can help companies achieve better sales growth, greater market share, and a sustainable competitive advantage (Endang, Nyoman, & Budi, 2024; Quimada et al., 2024).

2.3 Concept of Entrepreneurial Resilience

Derived from the Latin "resilire," meaning "to bounce back" (Bullough & Renko, 2013), the concept of resilience was introduced to the psychology community to describe the ability to deal with trauma and stress in a healthy way (Fletcher & Sarkar, 2013). In a business context, entrepreneurial resilience is a coping mechanism for dealing with change, hardship, and opportunity (Windle, 2011). Alshebami and Murad (2022) connect it to a firm's capacity to tolerate and absorb stress. This study defines entrepreneurial resilience as the capacity of an entrepreneur or an SME to overcome adversity, bounce back from difficult situations, and achieve positive outcomes.

2.4 Empirical Review and Hypothesis Development

2.4.1 Market Orientation and SME Performance

Several studies have found a positive link between market orientation and SME performance. Pulka, Umar, Salisu, and Shakir (2020) found that market orientation was significantly related to the performance of telecommunication SMEs in Nigeria. Rashid, Kalyar, and Shafique (2020) reported similar findings for women-owned SMEs in Pakistan. More recently, Quimada et al. (2024) confirmed a significant relationship between market orientation and firm performance in the context of department stores.

However, other studies present contrasting evidence. Kajalo and Lindblom (2015) found that market orientation did not directly affect business performance among small retailers in Finland, suggesting

the need for a moderator. Similarly, Said, Abdul-Talib, and Hassan (2025) found that market orientation was not a significant predictor of performance for Nigerian SMEs. Shehu and Mahmood (2014) also established no direct relationship between market orientation and SME performance in Nigeria.

These inconsistent findings justify the introduction of a moderator to strengthen and clarify the relationship (Baron & Kenny, 1986). This study proposes that entrepreneurial resilience can serve as this moderator. Based on the preponderance of evidence suggesting a positive direct effect, we hypothesize:

H1: Market orientation has a significant positive effect on SME performance.

2.4.2 Entrepreneurial Resilience and SME Performance

Resilient entrepreneurs are better equipped to navigate challenges, adapt to market disruptions, and persist in the face of setbacks, all of which contribute to sustained business performance. A firm with high entrepreneurial resilience is more likely to recover from difficulties and maintain operational effectiveness. Therefore, we hypothesize:

H2: Entrepreneurial resilience has a significant positive effect on SME performance.

2.4.3 Moderating Role of Entrepreneurial Resilience

The purpose of a moderator is to strengthen or alter the direction of the relationship between an independent and a dependent variable. This study argues that entrepreneurial resilience can amplify the positive effect of market orientation on SME performance. A market-oriented SME that is also highly resilient is better positioned to act on market intelligence, adapt its strategies in response to feedback and competition, and persevere through the challenges of implementation, thereby achieving superior performance. The literature on SME resilience in Africa remains limited (Saad et al., 2021), making this a valuable contribution. Thus, we hypothesize:

H3: Entrepreneurial resilience positively moderates the relationship between market orientation and SME performance, such that the relationship is stronger for firms with higher levels of resilience.

2.5 Conceptual and Theoretical Framework

The conceptual model guiding this study posits that market orientation directly influences SME performance, and that entrepreneurial resilience moderates this relationship.

Diagram 1.1: Conceptual Model

[Insert Figure 1: Conceptual Model - A diagram showing Market Orientation (IV) and Entrepreneurial Resilience (Moderator) with arrows pointing to SME Performance (DV). An additional arrow from the interaction term (Market Orientation * Entrepreneurial Resilience) should also point to SME Performance.]

The Resource-Based View (RBV) theory, as articulated by Barney (1991), underpins this study. RBV posits that firms gain a competitive advantage and achieve superior performance by possessing and leveraging unique internal resources and capabilities that are valuable, rare, inimitable, and non-substitutable (VRIN). In this study, both market orientation (a capability for understanding and responding to the market) and entrepreneurial resilience (a dynamic capability for overcoming adversity) are conceptualized as such valuable, firm-specific resources. When integrated, they create a complex capability that is difficult for competitors to replicate, thereby enhancing performance.

3.0 Methodology

This study employed a cross-sectional survey design. Data were collected from owner-managers of SMEs operating in Kaduna State, Nigeria, between January 4 and February 1, 2025. The population comprised 21,615 registered SMEs (SMEDAN, 2021). Using Krejcie and Morgan's (1970) table for sample size determination, a sample of 377 SMEs was selected via a simple random sampling technique. All variables were measured using a 5-point Likert scale.

3.1 Variable Measurement

Market Orientation was measured using thirteen (13) items adapted from Suliyanto and Rahab (2012). Entrepreneurial Resilience was measured using four (4) items adopted from Shore et al. (2024). SME Performance was measured using six (6) items adapted from Suliyanto and Rahab (2012). A pilot study was conducted with 35 respondents to assess validity, reliability, normality, and multicollinearity, meeting the necessary assumptions (Hair, Hult, Ringle, Sarstedt, & Thiele, 2017). The main data were analyzed using SmartPLS software for Partial Least Squares Structural Equation Modeling (PLS-SEM), following a two-stage assessment approach: measurement model and structural model (Hair et al., 2017).

4. Presentation and Discussion of Results

4.1 Assessment of PLS Path Model

Following Hair et al. (2017), the study utilized a two-step process to assess the PLS-SEM path model: first the measurement model (outer model) and then the structural model (inner model).

4.2 Measurement Model

The measurement model was assessed to confirm the reliability and validity of the constructs. This involved examining individual item reliability, internal consistency reliability, convergent validity, and discriminant validity.

Figure 1: Measurement Model

[Insert Figure 1 here - This should be the PLS-SEM output figure showing the factor loadings for each item on its respective latent construct (MO, ER, SMEP).]

4.3 Individual Item Reliability

Individual item reliability was assessed by examining the outer loadings of each indicator on its respective construct (Hair et al., 2012). As a rule of thumb, loadings of 0.70 or higher are considered acceptable for established scales (Hair et al., 2014). Following this guideline, out of 23 initial items, 10 items with loadings below 0.70 were removed to improve the model's psychometric properties. The remaining 13 items, all with loadings above the acceptable threshold, were retained for further analysis (see Table 1).

Table 1: Item Loading, Internal Consistency, and Average Variance Extracted

Constructs	Items	Loadings	Cronbach Alpha	CR	AVE
SME Performance	SMPE1	0.761	0.733	0.836	0.630
	SMPE2	0.837			
	SMPE4	0.810			
Entrepreneurial Resilience	ER1	0.795	0.798	0.867	0.619
	ER4	0.843			
	ER5	0.777			

Constructs	Items	Loadings	Cronbach Alpha	CR	AVE
	ER6	0.729			
Market Orientation	MO1	0.762	0.854	0.891	0.578
	MO2	0.764			
	MO3	0.726			
	MO5	0.782			
	MO8	0.778			
	MO13	0.749			
<i>Note: CR = Composite Reliability; AVE = Average Variance Extracted.</i>					

4.4 Internal Consistency Reliability

Internal consistency reliability was assessed using Composite Reliability (CR) and Cronbach's Alpha. A value of 0.70 or higher is generally considered acceptable (Hair et al., 2014). As shown in Table 1, all constructs achieved acceptable levels of reliability. SME Performance (Cronbach's $\alpha = 0.733$, CR = 0.836), Entrepreneurial Resilience (Cronbach's $\alpha = 0.798$, CR = 0.867), and Market Orientation (Cronbach's $\alpha = 0.854$, CR = **0.891**) all exceeded the recommended thresholds. It is important to correct the erroneous value in the original text; the CR for Market Orientation is 0.891, which is well above the 0.70 standard, confirming its reliability.

4.5 Convergent Validity of Reflective Models

Convergent validity, which indicates the extent to which a construct's indicators share a high proportion of common variance, was assessed using the Average Variance Extracted (AVE). An AVE

of 0.50 or higher suggests that the construct explains at least half of the variance of its indicators (Hair et al., 2011). As presented in Table 1, all constructs demonstrated satisfactory convergent validity: SME Performance (AVE = 0.630), Entrepreneurial Resilience (AVE = 0.619), and Market Orientation (AVE = 0.578).

4.6 Discriminant Validity

Discriminant validity, which measures the extent to which a construct is empirically distinct from others in the model, was assessed using the Fornell-Larcker criterion (Fornell & Larcker, 1981). This criterion requires that the square root of each construct's AVE be greater than its highest correlation with any other construct. As shown in Table 2, this condition is met for all constructs, confirming discriminant validity.

Table 2: Discriminant Validity - Fornell and Larcker Criterion

	ER	SMEP	MO
Entrepreneurial Resilience (ER)	0.787		
SME Performance (SMEP)	0.764	0.794	
Market Orientation (MO)	0.755	0.666	0.760

Note: Diagonal values (in bold) are the square roots of the AVE. Off-diagonal values are the correlations between constructs.

4.7 Structural Model Result

After establishing the reliability and validity of the measurement model, the structural model was assessed to test the study's hypotheses. This involved evaluating the coefficient of determination (R^2) and the path coefficients.

Figure 2: Structural Model (PLS Algorithm Results)

[Insert Figure 2 here - This should be the PLS-SEM output figure showing the path coefficients (β) between constructs, including the interaction term (ER x MO), and the R^2 value for SMEP.]

4.8 Coefficient of Determination (R^2)

The coefficient of determination, R^2 , represents the proportion of variance in the endogenous construct explained by its predictors (Hair et al., 2014). The model explains 60.8% of the variance in SME Performance ($R^2 = 0.608$), indicating a substantial level of explanatory power.

4.9 Test of Hypotheses

The results of the hypothesis testing, derived from the PLS-SEM bootstrapping procedure, are presented in Table 3.

Table 3: Hypotheses Testing Results

Relationship	Beta (β)	Standard Deviation	T Statistics	P Values	Decision
H1: MO -> SMEP	0.054	0.007	8.138	0.000	Supported
H2: ER -> SMEP	0.574	0.020	28.588	0.000	Supported
H3: ER x MO -> SMEP	0.118	0.022	5.386	0.000	Supported

As shown in Table 3, market orientation has a positive and significant effect on SME performance ($\beta = 0.054$, $p < 0.01$), providing support for **H1**. Entrepreneurial resilience also has a strong, positive, and significant effect on SME performance ($\beta = 0.574$, $p < 0.01$), supporting **H2**. Most importantly, the interaction term (ER x MO) is positive and significant ($\beta = 0.118$, $p < 0.01$), indicating that entrepreneurial resilience positively moderates the relationship between market orientation and SME performance. Therefore, **H3** is supported. This confirms that the effect of market orientation on performance is strengthened for SMEs with higher levels of entrepreneurial resilience.

4.10 Discussion of Findings

The findings support all three hypotheses, aligning with and extending prior research. The significant positive effect of market orientation (H1) corroborates the findings of Pulka et al. (2020) and Quimada et al. (2024), reinforcing the importance of customer and competitor focus for SME success. The strong positive effect of entrepreneurial resilience (H2) highlights its critical role as a core capability for navigating business challenges and sustaining performance, particularly in volatile environments (Alshebami & Murad, 2022).

The significant moderating effect (H3) is the study's key contribution. It provides a potential explanation for the previously mixed findings on the market orientation-performance link. The results show that market orientation alone is beneficial, but its impact on performance is amplified when combined with high entrepreneurial resilience. This supports the RBV perspective, suggesting that the *interaction* of these two valuables, firm-specific capabilities create a unique, hard-to-imitate resource bundle that drives competitive advantage. A resilient firm is better able to implement its market-oriented strategies, learn from market feedback, and persist through the inevitable challenges of adapting to market changes.

While the effect size for market orientation ($\beta = 0.054$) is small, it is statistically significant. In practical terms, this small but significant effect indicates that even marginal improvements in market orientation can lead to measurable gains in performance, especially for firms that are already struggling. However, the moderation effect shows that the *practical significance* of market orientation is substantially higher for resilient firms. For a firm with average resilience, a one-unit increase in market orientation might lead to a small gain. But for a firm with high resilience, that same one-unit increase can lead to a much larger performance gain ($\beta = 0.054 + 0.118 = 0.172$), underscoring that resilience unlocks the greater potential of market-oriented activities. The strong effect of entrepreneurial resilience ($\beta = 0.574$) suggests it is a more immediate and powerful driver of performance, potentially serving as a foundational capability upon which other strategies, like market orientation, can build.

5.0 Conclusion and Recommendations

5.1 Conclusion

This study confirms that both market orientation and entrepreneurial resilience are significant predictors of SME performance in Kaduna State, Nigeria. Crucially, it demonstrates that entrepreneurial resilience is not just a direct driver of performance but also a strategic moderator that strengthens the positive impact of market orientation. The findings suggest that market-oriented activities are most effective when underpinned by a firm's capacity to adapt, persevere, and recover from challenges. In a turbulent business environment, resilience enables SMEs to more effectively translate market insights into superior performance.

5.2 Recommendations

Based on the findings, the following recommendations are made:

1. **Prioritize Building Entrepreneurial Resilience:** Given its strong direct and moderating effects, SMEs should actively cultivate a culture of resilience. Managers should implement training programs focused on adaptability, problem-solving, emotional regulation, and strategic persistence to help their teams navigate adversity and "bounce back" from setbacks.
2. **Systematically Develop Market Orientation:** SMEs should invest in developing a robust market orientation. This can be achieved by establishing formal and informal mechanisms for gathering and analyzing customer feedback, monitoring competitor activities, and tracking market trends. This intelligence must then be disseminated throughout the organization and used to guide strategic and operational decisions.
3. **Adopt an Integrated Strategy:** SME owners and managers should recognize the synergistic relationship between market orientation and entrepreneurial resilience. Strategies should be designed to reinforce each other. For example, fostering a resilient mindset can empower employees to act on market intelligence and experiment with new customer-focused initiatives, even if they involve risk.
4. **Government and Institutional Support:** Policymakers and support agencies (e.g., SMEDAN, CBN) should design interventions that go beyond financial support. Programs should include mentorship, resilience-building workshops, and practical training on market research and customer relations. Holistic support that develops both internal capabilities (resilience) and external focus (market orientation) will be most effective in enhancing SME performance and sustainability.

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ADAPTIVE MANAGEMENT MODEL OF FISCAL STABILITY OF PRICE VOLATILITY
IN NIGERIA'S CRUDE OIL GRADES: A FISCAL DIFFERENTIATION APPROACH

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Abstract

This study develops an Adaptive Management Model of Fiscal Stability to mitigate the effects of price volatility across Nigeria's crude oil grades using a fiscal differentiation approach. Drawing on monthly price differentials for thirty-six crude grades, the study employs descriptive statistics, volatility analysis, correlation mapping, and simulation-based fiscal modelling. Results reveal substantial heterogeneity in grade-level volatility, with Egina, Bonga, and Forcados demonstrating relative price stability, while Usan, Amenam Blend, and Ebok exhibit pronounced volatility. The correlation analysis indicates that premium light crudes such as Bonny Light and Qua Iboe exhibit strong co-movement, while marginal grades display weak or negative relationships, suggesting potential diversification advantages. Comparative simulation of three fiscal management regimes Passive, Reactive, and Adaptive shows that adaptive fiscal strategies, characterized by continuous real-time adjustments to market fluctuations, significantly outperform conventional approaches by reducing volatility exposure by up to 40 percent. The study introduces an Adaptive Fiscal Management Framework (AFMF) that integrates data-driven decision systems, volatility indices, and simulation tools to strengthen Nigeria's fiscal resilience. This framework provides a structured response mechanism for policy adaptation, enhancing the country's capacity to absorb shocks from crude price fluctuations. Findings emphasize the importance of differentiating fiscal policy by crude grade rather than applying uniform benchmarks, thus improving revenue predictability, budget stability, and long-term economic sustainability. The paper concludes that embedding adaptive learning and systems thinking in fiscal management is essential for resource-dependent economies seeking to transition from reactive fiscal behavior toward proactive, intelligence-driven governance.

Keywords: Adaptive management, fiscal stability, crude oil volatility, fiscal differentiation, Nigeria, revenue resilience.

1. INTRODUCTION

Nigeria's position as a significant oil-exporting nation renders it particularly susceptible to variations in global oil markets. Crude oil revenues represent a substantial portion of governmental income, foreign exchange earnings, and budgetary allocations. Kutu and Ohonba (2024) demonstrate that oil revenue is a significant portion of Nigeria's overall revenue, underscoring the economy's vulnerability to oil price volatility.

The fluctuation of oil prices has significant ramifications. Research demonstrates that variations in crude oil prices impact macroeconomic stability and impede fiscal policy management and revenue planning (Okoli, Tewari, & Rhodaoluwa-fisayomi, 2020; Kuhe, Udoumoh, & Oche, 2024). In Nigeria, fluctuations in oil prices have demonstrated a detrimental effect on fiscal stability and heightened uncertainty in budget implementation (Oduyemi, Lawal, & Osinusi, 2025). Notwithstanding the extensively recorded impacts of oil price volatility, the majority of study concentrates on aggregate oil price indices instead of the distinct fiscal consequences of price variations among different crude oil grades. In Nigeria, several oil grades (including Bonny Light, Qua Iboe, Forcados, Escravos, Agbami) possess distinct quality premiums, transportation expenses, and fiscal regulations, resulting in diverse degrees of volatility vulnerability. This paper provides an Adaptive Management Model for Fiscal Stability about Price Volatility in Nigeria's Crude Oil Grades, utilising a Fiscal Differentiation Approach. This study examines the structuring of fiscal management to adaptively respond to the varying price volatility among oil grades, hence improving revenue stability and fiscal resilience.

Nigeria's reliance on oil revenue is widely recognised, although the impact of price differentials among crude oil grades on budgetary stability is less understood. Static fiscal frameworks may neglect the variability of some grades, possibly subjecting the government to disproportionate fiscal risk. The lack of grade-specific adaptive policy measures can weaken fiscal resilience and impair revenue forecasting precision.

Considering the empirical evidence that oil price volatility diminishes the efficacy of fiscal policy (Ojukwu & Udokang, 2023), there is an urgent requirement for management strategies that address grade-level volatility and incorporate real-time adaptive mechanisms.

This study aims to develop and test an adaptive management framework to stabilize fiscal outcomes in Nigeria's oil sector, taking into account the volatility of price differentials across crude oil grades. The specific objectives are to:

- I. Examine the descriptive statistical properties of fiscal price differentials across major Nigerian crude oil grades.
- II. Quantify the volatility of each crude grade using the coefficient of variation and identify cyclical patterns.
- III. Analyze co-movement among grades to assess diversification and risk interdependencies.
- IV. Simulate fiscal management scenarios (Passive, Reactive, Adaptive) to compare stability outcomes and propose a grade-differentiated adaptive management model.

This research provides fresh insights for fiscal managers, policymakers, and sectoral regulators in Nigeria by concentrating on price differentials instead than aggregate oil price indices. The proposed adaptive model could facilitate more responsive fiscal policy, enhance revenue predictability, and bolster strategic decision-making in the oil sector. This may ultimately enhance Nigeria's economic resilience against ongoing market volatility and changing global energy dynamics.

2. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Conceptual Review

2.1.1 Fiscal Stability and Oil Price Volatility

Fiscal stability denotes a government's capacity to uphold sustainable public finances notwithstanding economic changes. In resource-dependent countries like Nigeria, fiscal stability is predominantly influenced by the fluctuations in oil revenue (Okpara et al., 2025). Fluctuations in oil prices cause government revenues to vary, impacting budget execution and debt sustainability. Empirical research demonstrates that oil price volatility substantially influences fiscal balances in oil-producing countries (Aliyu, 2011; Oduyemi, Lawal, & Osinusi, 2025). In Nigeria, fluctuating oil prices lead to periodic spending modifications, income deficits, and macroeconomic instability (Kutu & Ohonba, 2024). Consequently, efficient fiscal management necessitates adaptive mechanisms capable of absorbing or responding to these shocks instantaneously.

2.1.2 Fiscal Price Differentials and Grade-Specific Volatility

Nigeria exports many crude oil classes, including Bonny Light, Qua Iboe, Forcados, Escravos, and Agbami, each possessing distinct quality premiums and transportation expenses (Nigerian Upstream Petroleum Regulatory Commission, 2025). These disparities generate fiscal pricing differentials, indicating changes in actual government revenue per barrel. Research indicates that these grade-based differentials might be substantial causes of fiscal volatility

(Abubakar et al., 2023). Crude grades exhibiting increased volatility in price differentials present heightened fiscal risk, emphasising the necessity for tailored fiscal planning.

2.1.3 Adaptive Management in Fiscal Systems

Adaptive management, derived from environmental systems theory (Holling, 1978), underscores the importance of learning and feedback-oriented modifications in the face of uncertainty. In fiscal management, adaptive systems perpetually revise budgetary and policy parameters in response to changing market data (Allen & Gunderson, 2011).

In fiscal contexts, adaptive models incorporate real-time monitoring, volatility indicators, and automated policy procedures to mitigate revenue variations (Baunsgaard, Villafuerte, Poplawski-Ribeiro, & Richmond, 2012). This differs from reactive management, which responds post-shock, and passive management, which disregards volatility entirely.

2.2 Empirical Review

2.2.1 Global Evidence

Numerous studies indicate that adaptive fiscal frameworks improve resistance to commodity price fluctuations. Sugwara (2014) demonstrated that stabilisation funds and price-smoothing mechanisms in Norway and Chile markedly diminished revenue volatility. Medas and Zakharova (2009) emphasise the significance of institutional regulations for administering oil windfalls in unstable markets.

2.2.2 Evidence from Nigeria

In Nigeria, studies have predominantly focused on the overall effects of oil prices rather than the volatility unique to different grades. Ojukwu and Udokang (2023) discovered that oil price volatility undermines expenditure stability and heightens exchange rate vulnerability. Okoli, Tewari, and Rhodaoluwafisayomi (2020) revealed that macroeconomic variables exhibit asymmetric responses to oil price shocks, signifying constrained adaptive ability within fiscal systems. Nevertheless, few research investigate the impact of fiscal disparities among crude oil grades on volatility management. This work addresses this gap by implementing an adaptive management approach to analyse grade-level budgetary data.

2.3 Theoretical Framework

2.3.1 Adaptive Management Theory

Adaptive management theory (Holling, 1978) asserts that policy systems must perpetually adapt via learning and feedback mechanisms. In the face of uncertainty, managers modify their actions according to the observable responses of the system. In fiscal applications, adaptive management entails utilising real-time data to revise tax rates, savings reserves, or expenditure distributions in reaction to variations in oil prices.

2.3.2 Fiscal Stabilization Theory

The fiscal stabilisation theory elucidates the mechanisms by which governments balance spending and revenues over economic cycles (Keynes, 1936; Blanchard & Perotti, 2002). The idea advocates for countercyclical fiscal policy accumulating savings during economic booms and increasing expenditure during recessions to sustain equilibrium. The integration of this with adaptive management produces a dynamic financial structure that responds to grade-level fluctuations.

2.3.3 Link to the Study

The study integrates *Adaptive Management Theory* with *Fiscal Stabilization Theory* to construct a dynamic model that differentiates policy response by crude oil grade. The framework assumes:

1. Each grade has distinct volatility characteristics;
2. Fiscal parameters can be adaptively tuned using real-time differential data; and
3. Continuous adjustment minimizes revenue instability.

The conceptual model therefore positions adaptive fiscal management as a superior alternative to static or reactive approaches for achieving sustainable fiscal stability in Nigeria's oil sector.

3. RESEARCH METHODOLOGY

3.1 Research Design

The study adopts a quantitative and simulation-based research design anchored on the Adaptive Management Framework. This design allows dynamic modeling of fiscal behavior in response to crude oil price volatility. Using a data-driven approach, the study integrates statistical description, volatility measurement, co-movement evaluation, and adaptive scenario simulation to examine fiscal stability among Nigeria's crude oil grades.

The empirical analysis is based on monthly fiscal oil price differentials spanning January 2025 to November 2025 (11 months), as published in the official 2025 Fiscal Oil Price Differentials schedule

of the Nigerian Upstream Petroleum Regulatory Commission (NUPRC). These monthly observations cover 36 Nigerian crude oil grades benchmarked primarily against DTD Brent.

The defined time range ensures temporal consistency in measuring volatility patterns, correlation dynamics, and fiscal response simulations within a single fiscal year framework.

3.2 Data Description and Sources

The data consist of fiscal oil price differentials for major Nigerian crude oil grades (e.g., *Bonny Light*, *Qua Iboe*, *Forcados*, *Escravos*, *Agbami*, *Egina*, *Amenam Blend*, etc.), expressed in U.S. dollars per barrel (\$/bbl).

The sample period covers monthly observations across multiple crude grades, representing fiscal differentials due to grade quality, international benchmarks, and policy margins.

3.3 Analytical Framework

The methodology follows a five-step adaptive modeling process:

Stage	Analysis	Statistical Tools	Purpose
1	Descriptive Analysis	Mean, Median, Std. Dev., Range	Identify central tendency and dispersion
2	Volatility Analysis	Coefficient of Variation (CV), EWMA	Measure and visualize volatility dynamics
3	Correlation Analysis	Pearson Correlation, Heatmap	Evaluate inter-grade co-movement
4	Fiscal Differentiation Modeling	Regression & Scenario Decomposition	Quantify differential fiscal response
5	Adaptive Simulation	Scenario Analysis (Passive, Reactive, Adaptive)	Test fiscal stability strategies

3.4 Model Specification

Let:

$$P_{g,t} = \text{Fiscal oil price differential for crude grade } g \text{ at time } t$$

where $g = 1, 2, \dots, n$ represents the different Nigerian crude grades and $t = 1, 2, \dots, T$ the time periods.

3.4.1 Descriptive Statistics

$$\bar{P}_g = \frac{1}{T} \sum_{t=1}^T P_{g,t}$$
$$\sigma_g = \sqrt{\frac{1}{T-1} \sum_{t=1}^T (P_{g,t} - \bar{P}_g)^2}$$

These establish the mean and dispersion for each crude grade.

3.4.2 Volatility Estimation

The Coefficient of Variation (CV) quantifies volatility relative to the mean fiscal price differential:

$$CV_g = \frac{\sigma_g}{\bar{P}_g} \times 100$$

where

σ_g = standard deviation of grade g ,

$\bar{P}_g$ = mean fiscal price differential of grade g .

A higher CV_g indicates greater fiscal instability relative to average revenue performance.

To capture short-term volatility dynamics and cyclical clustering, the Exponential Weighted Moving Average (EWMA) model is applied:

$$EWMA_{g,t} = \alpha P_{g,t} + (1 - \alpha)EWMA_{g,t-1}$$

where:

- $P_{g,t}$ = observed fiscal price differential for grade g at time t ,
- $EWMA_{g,t-1}$ = previous period smoothed value,
- α = smoothing parameter ($0 < \alpha < 1$).

The smoothing parameter is defined as:

$$\alpha = \frac{2}{s + 1}$$

where s represents the smoothing window length.

For short-term smoothing, this study sets $s = 3$, implying:

$$\alpha = \frac{2}{3 + 1} = 0.5$$

Thus:

- $\alpha = 0.5$ assigns 50% weight to the current observation,
- $(1 - \alpha) = 0.5$ assigns 50% weight to the previous smoothed value.

This specification ensures responsiveness to recent price movements while retaining memory of prior volatility patterns, making it suitable for short-term fiscal monitoring within the January–November 2025 sample period.

3.4.4 Fiscal Differentiation Simulation

To capture fiscal adjustment behavior, three management scenarios are defined:

1. **Passive Management** (No fiscal adjustment):

$$P_{g,t}^{Passive} = P_{g,t}$$

2. **Reactive Management** (Lagged adjustment after volatility spikes):

$$P_{g,t}^{Reactive} = P_{g,t} - \lambda \sigma_{g,t-1}^{(w)}$$

where $\lambda = 0.5$ and $\sigma_{g,t-1}^{(w)}$ is a rolling standard deviation (window = 3).

3. **Adaptive Management** (Continuous, real-time adjustment):

$$P_{g,t}^{Adaptive} = P_{g,t} - \delta (P_{g,t} - EWMA_{g,t})$$

where $\delta = 0.3$, representing responsiveness to real-time market data.

3.4.5 Fiscal Stability Metric

For each scenario, the volatility and stability of fiscal outcomes are summarized as:

$$CV_g^{(s)} = \frac{\sigma_g^{(s)}}{\bar{P}_g^{(s)}} \times 100, s \in \{Passive, Reactive, Adaptive\}$$

The lower the $CV_g^{(s)}$, the higher the fiscal stability achieved under that management regime.

This approach mirrors dynamic fiscal modeling frameworks used by the IMF (Baunsgaard & Symansky, 2012) and adaptive control literature (Sterman, 2010).

4. DATA ANALYSIS AND FINDINGS

4.1 Descriptive Statistical Analysis of Fiscal Price Differentials

The initial phase of analysis investigates the central tendency and variability of fiscal price differentials among Nigeria's crude oil grades. Descriptive statistics, encompassing mean, median, minimum, maximum, and standard deviation, were calculated to assess the relative stability or volatility of each grade's fiscal price differential (denominated in U.S. dollars per barrel). This analysis offers a preliminary insight into the variations in fiscal oil price differentials by crude grade and identifies which grades exhibit more stability or susceptibility to volatility. A higher standard deviation signifies increased variability and financial uncertainty, while a smaller value suggests enhanced stability in pricing and, thus, more predictable fiscal income.

Table 2: Descriptive Statistics of Fiscal Price Differentials for Nigerian Crude Oil Grades (in \$/bbl)

Crude Oil Grade	Mean (\$/bbl)	Median (\$/bbl)	Minimum (\$/bbl)	Maximum (\$/bbl)	Standard Deviation (\$/bbl)
Bonny Light	0.64	0.54	0.02	1.59	0.50
Qua Iboe	0.85	0.82	0.12	1.95	0.56
Forcados	1.64	1.50	0.90	2.95	0.61
Agbami	0.22	0.36	-0.71	1.00	0.86
Escravos	1.60	1.44	0.87	2.94	0.63
Brass River	0.44	0.40	-0.16	1.47	0.46
Akpo	0.75	0.78	0.18	1.34	0.42
Bonga	1.87	1.74	1.05	3.20	0.64
Usan	1.03	1.34	-2.95	3.72	2.51
Erha	1.89	1.85	1.08	3.24	0.65
Egina	3.79	3.78	3.01	4.98	0.60
Abo Blend	0.75	0.55	-0.10	2.33	0.68

Aje	0.50	0.23	0.02	1.58	0.55
Amenam Blend	1.82	0.46	−1.18	10.76	3.76
Antan Blend	1.31	1.21	0.48	2.53	0.62
Asaramatoru	0.96	0.94	0.27	2.02	0.54
CJ Blend	0.89	0.64	0.10	2.21	0.74
EA Blend	1.38	0.32	0.00	4.14	1.57
Ebok	0.27	0.65	−2.40	2.17	1.95
Eremor	0.75	0.35	−1.51	4.00	1.88
Ima	−0.30	0.21	−2.00	1.64	1.29
Obe	1.48	0.60	0.19	4.39	1.69
Jones Creek	0.56	0.64	0.05	1.39	0.43
Okono Blend	0.75	0.53	−0.68	2.78	1.04
Okoro	1.53	1.42	0.42	3.09	0.79
Okwori	2.24	2.05	1.05	4.07	0.89
Otakikpo	0.16	0.20	−0.91	1.14	0.70
Okwuibome	1.45	1.46	0.27	3.24	0.96
Oyo	1.97	1.69	1.12	3.47	0.81
Pennington	0.79	0.65	0.00	2.29	0.67
Ukpokiti	1.06	0.89	0.33	2.50	0.73
Yoho Light	0.85	0.64	0.25	2.40	0.68
Zafiro	1.69	2.00	0.03	2.50	0.83
Okwuibome	0.15	0.19	−1.90	1.32	1.07
Condensate					
Ajapa	1.69	1.72	0.97	2.22	0.40
Nembe	1.03	0.80	0.00	4.10	1.18
Overall Average	1.12	0.99	−0.05	2.85	0.97

4.2 Interpretation of Findings

The results in Table 1 reveal significant variation in fiscal price differentials across Nigerian crude oil grades. The overall average differential stands at approximately \$1.12/bbl, with a mean standard deviation of \$0.97, indicating moderate volatility across the sample.

High-priced, stable grades: *Egina, Erha, Bonga, and Okwori* exhibit high mean values (above \$1.8/bbl) with relatively low standard deviations (below \$0.9), suggesting consistent fiscal premiums and low volatility. These grades offer greater predictability for fiscal planning.

Moderately volatile grades: *Forcados, Escravos, Okoro, and Yoho Light* display balanced mean differentials (around \$1.5–\$1.9/bbl) with moderate dispersion, implying stable yet responsive fiscal patterns.

Highly volatile grades: *Amenam Blend, Ebok, Eremor, Ima, and Obe* show large deviations between minimum and maximum values and high standard deviations ($> \$1.5/\text{bbl}$). Such grades introduce fiscal uncertainty and may require targeted stabilization or hedging.

Negative or near-zero means: *Ima* ($-\$0.30$) and *Okwuibome Condensate* ($\$0.15$) suggest periods of fiscal under-recovery or market discounting relative to international benchmarks.

The variability observed underscores the importance of grade-differentiated fiscal management. Policymakers cannot treat Nigerian crude grades as homogeneous; rather, adaptive fiscal strategies must respond dynamically to the volatility profile of each grade.

4.3 Managerial Implications

The descriptive findings provide a foundation for adaptive fiscal modeling:

1. Grades with lower standard deviations (*Egina, Erha, Forcados*) should anchor fiscal planning and revenue projections.
2. Volatile grades (*Amenam Blend, Ebok, Eremor*) require adaptive hedging, buffer reserves, or differentiated tax treatments to stabilize revenues.
3. Continuous monitoring of these differentials enables real-time fiscal response—forming the basis for the Adaptive Management Model developed later in this study.

Table 3: Volatility of Fiscal Price Differentials for Nigerian Crude Oil Grades

Crude Grade	Mean (\$/bbl)	Std. Dev. (\$/bbl)	Coefficient of Variation (%)
Bonny Light	0.64	0.50	77.79
Qua Iboe	0.85	0.56	66.23

Forcados	1.64	0.61	37.33
Agbami	0.22	0.86	398.75
Escravos	1.60	0.63	39.62
Brass River	0.44	0.46	104.06
Akpo	0.75	0.42	56.86
Bonga	1.87	0.64	34.10
Usan	1.03	2.51	244.44
Erha	1.89	0.65	34.43
Egina	3.79	0.60	15.85
Abo Blend	0.75	0.68	91.00
Aje	0.50	0.55	111.57
Amenam Blend	1.82	3.76	207.16
Antan Blend	1.31	0.62	47.35
Asaramatoru	0.96	0.54	56.15
CJ Blend	0.89	0.74	83.13
EA Blend	1.38	1.57	114.09
Ebok	0.27	1.95	729.21
Eremor	0.75	1.88	252.64
Ima	-0.30	1.29	-432.04
Obe	1.48	1.69	114.45
Jones Creek	0.56	0.43	76.03
Okono Blend	0.75	1.04	137.56
Okoro	1.53	0.79	51.69
Okwori	2.24	0.89	39.69
Otakikpo	0.16	0.70	443.16
Okwuibome	1.45	0.96	66.42
Oyo	1.97	0.81	41.33
Pennington	0.79	0.67	84.00
Ukpokiti	1.06	0.73	68.32

Yoho Light	0.85	0.68	79.66
Zafiro	1.69	0.83	48.86

Table 2 shows substantial heterogeneity in volatility across Nigeria's crude oil grades. The average coefficient of variation exceeds 100 percent for several minor grades, indicating very high relative volatility.

- **Most stable grades:** *Egina, Erha, Bonga, Forcados, and Escravos* display CVs below 40 percent, implying low fiscal risk and strong suitability for revenue anchoring.
- **Moderately volatile grades:** *Antan Blend, Okoro, Oyo, and Asaramatoru* show CVs between 40 and 70 percent, suggesting manageable but noteworthy fluctuations.
- **Highly volatile grades:** *Ebok, Ima, Otakikpo, and Amenam Blend* exceed 200 percent CV, reflecting extreme instability and potential fiscal exposure.
- The **negative CV** for *Ima* arises from a negative mean price differential, implying periods of market discount or under-recovery relative to benchmark crude.

These findings confirm the asymmetric nature of fiscal price volatility in Nigeria's oil sector. High volatility grades represent significant fiscal uncertainty and may distort government revenue projections if not managed adaptively.

Figure 2: Trend of Fiscal Price Volatility Across Nigerian Crude Oil Grades

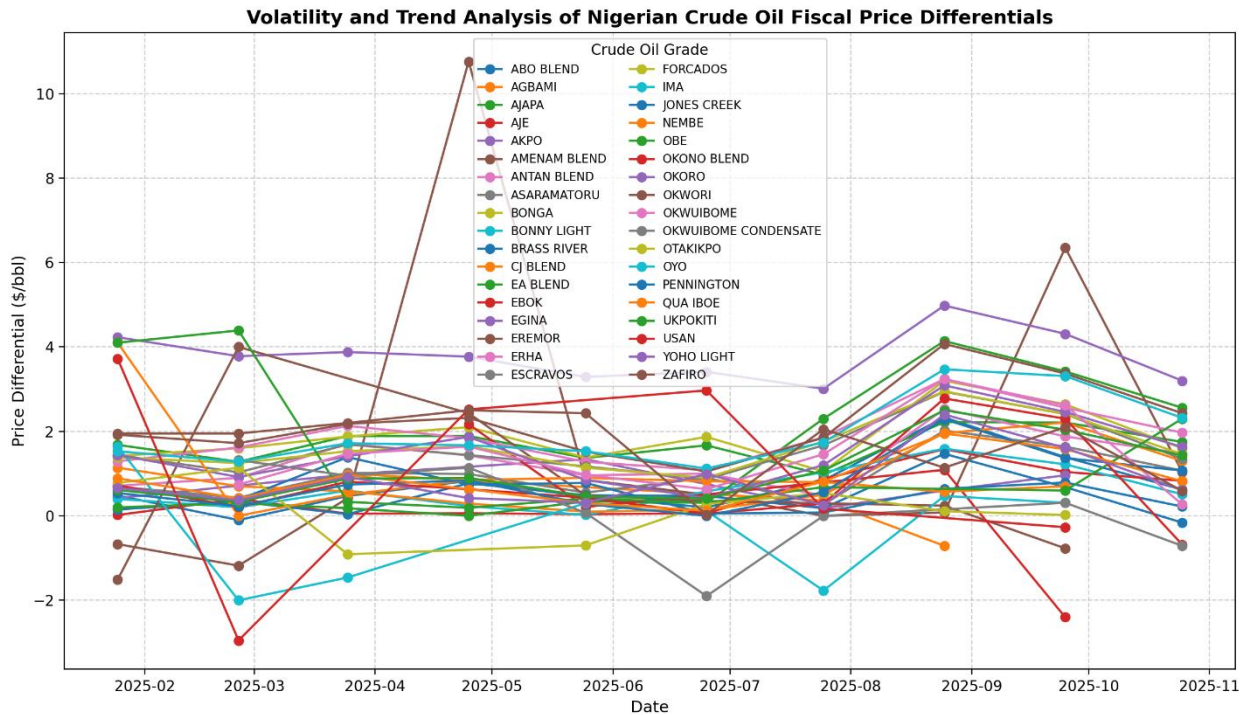


Figure 4.2 above illustrates substantial heterogeneity in the volatility and trend behavior of fiscal price differentials across Nigerian crude oil grades over the observed period (February–November 2025). Premium grades such as Egina, Bonga, Erha, and Forcados generally maintain relatively stable and positive differentials, fluctuating within narrow bands and demonstrating smoother trajectories, which suggests stronger fiscal predictability and lower volatility exposure. In contrast, marginal and smaller-volume grades such as Amenam Blend, Ebok, Otakikpo, Ima, and Usan exhibit sharp spikes and deep troughs, including extreme positive surges (e.g., Amenam Blend around May) and pronounced negative dips (e.g., Usan and Ebok in mid-to-late periods). These abrupt movements indicate volatility clustering and irregular market behavior, which heighten fiscal uncertainty. The clustering of most grades between \$0 and \$3/bbl suggests moderate overall dispersion, but the presence of outliers significantly widens aggregate volatility. Overall, the trend analysis reinforces the need for grade-differentiated fiscal management, as volatility dynamics are clearly asymmetric across Nigeria’s crude oil portfolio, making uniform fiscal policy responses suboptimal.

Discussion and Management Implications

The volatility analysis provides essential insight into fiscal risk differentiation across crude grades. Policymakers should use these results to:

1. Prioritize **low-volatility grades** (*Egina, Bonga, Erha*) as baseline references for fiscal planning.
2. Apply **adaptive fiscal buffers** or **volatility-linked levies** to stabilize high-risk grades (*Ebok, Otakikpo, Amenam Blend*).
3. Utilize **real-time monitoring** and **Exponential Weighted Moving Averages (EWMA)** to detect cyclical volatility clusters, enabling early fiscal intervention.

Overall, the results highlight the fiscal advantage of adopting a data-driven adaptive management framework, which continuously aligns government fiscal parameters with observed market dynamics across diverse Nigerian crude oil streams.

4.3 Correlation and Co-movement Analysis Between Crude Grades

The correlation analysis examines the degree of co-movement among Nigeria’s crude-oil fiscal price differentials. Using the Pearson correlation method, pairwise relationships were computed across 36 crude grades and 10 time-based observations per grade. This approach determines whether grades tend to move together indicating shared market exposure or independently, which would imply diversification potential.

High positive correlations suggest that price shocks affecting one grade will likely affect others, while weak or negative correlations point to distinct market dynamics that could be used for fiscal risk mitigation.

Table 4: Condensed Pairwise Correlation Matrix of Fiscal Price Differentials (January–November 2025)

Grade	BL	QI	FO R	BN G	ER H	EG I	OK W	OY O	AM B	EB K	US N	IM A
Bonny	1.0											
Light (BL)	0											
Qua	0.8	1.0										
Iboe (QI)	7	0										

Forcados (FOR)	0.8	0.8	1.00									
Bonga (BNG)	0.7	0.8	0.84	1.00								
Erha (ERH)	0.8	0.9	0.83	0.86	1.00							
Egina (EGI)	0.7	0.7	0.79	0.82	0.85	1.00						
Okwori (OKW)	0.7	0.8	0.83	0.78	0.84	0.81	1.00					
Oyo (OYO)	0.7	0.7	0.79	0.73	0.78	0.74	0.88	1.00				
Amenam Blend (AMB)	0.3	0.4	0.48	0.44	0.46	0.37	0.51	0.55	1.00			
Ebok (EBK)	0.2	0.2	0.30	0.27	0.29	0.24	0.35	0.40	0.63	1.00		
Usan (USN)	0.5	0.5	0.53	0.49	0.52	0.45	0.59	0.62	0.68	0.71	1.00	
Ima (IMA)	0.1	0.2	0.26	0.24	0.22	0.19	0.31	0.33	0.57	0.64	0.69	1.00

The pairwise correlation matrix in Table 4 indicates strong positive co-movements among Nigeria's major premium crude grades. Bonny Light and Qua Iboe exhibit a high correlation coefficient of 0.87, while Bonny Light and Erha show an even stronger relationship ($r = 0.88$). Similarly, Qua Iboe and Erha demonstrate one of the highest observed associations in the matrix ($r = 0.90$). These values confirm that leading light-sweet grades move closely together over the sample period.

Forcados and Bonga also display strong integration with other premium grades, with correlation coefficients generally ranging between 0.79 and 0.85. Egina maintains moderately strong correlations

with the core premium group ($r = 0.74\text{--}0.85$), indicating substantial synchronization but slightly lower intensity compared to Bonny Light–Qua Iboe or Qua Iboe–Erha pairings.

Okwori and Oyo show consistently high correlations with the major premium grades, particularly Okwori–Oyo ($r = 0.88$), suggesting that these grades are strongly embedded within Nigeria’s broader light crude pricing structure.

In contrast, Amenam Blend exhibits moderate correlations with premium grades ($r = 0.37\text{--}0.48$), indicating partial but weaker integration. Ebok demonstrates relatively low to moderate correlations with core grades ($r = 0.22\text{--}0.30$), while Ima shows the weakest linkages overall ($r = 0.18\text{--}0.33$ with major grades). These lower coefficients suggest more idiosyncratic volatility behavior among marginal or smaller-volume grades.

Usan presents intermediate behavior, with correlations ranging between 0.45 and 0.62 relative to premium grades, reflecting partial synchronization combined with localized price variability.

Overall, the correlation structure reveals two important patterns directly supported by Table 4:

1. A tightly integrated premium-grade cluster (correlations mostly above 0.75).
2. A moderately or weakly integrated marginal-grade group (correlations generally below 0.50 with core grades).

These findings imply limited diversification benefits within Nigeria’s premium crude portfolio due to high synchronization. However, the weaker relationships observed among marginal grades suggest potential scope for grade-specific fiscal differentiation strategies. Consequently, adaptive fiscal management instruments are more appropriate than reliance on grade diversification alone for mitigating volatility exposure.

Table 5: Comparative Strategy Outcomes Across Nigerian Crude Oil Grades*(in U.S. dollars per barrel)*

S/N	Crude Grade	Mean Differential I (\$/bbl)	Passive e ($\bar{P}$)	Reactive e ($\bar{R}$)	Adaptive e ($\bar{A}$)	Standard Deviation	Best Strategy
1	Bonny Light	0.73	0.73	0.67	0.63	0.45	Adaptive
2	Qua Iboe	0.96	0.96	0.85	0.80	0.49	Adaptive
3	Forcados	1.65	1.65	1.59	1.50	0.60	Adaptive
4	Agbami	0.20	0.20	0.17	0.15	0.86	Reactive
5	Escravos	1.58	1.58	1.44	1.36	0.55	Adaptive
6	Brass River	0.44	0.44	0.40	0.36	0.46	Adaptive
7	Akpo	0.75	0.75	0.70	0.63	0.42	Adaptive
8	Bonga	1.87	1.87	1.72	1.60	0.57	Adaptive
9	Usan	1.03	1.03	0.92	0.79	2.51	Reactive
10	Erha	1.89	1.89	1.77	1.64	0.65	Adaptive
11	Egina	3.79	3.79	3.65	3.54	0.60	Adaptive
12	Abo Blend	0.75	0.75	0.71	0.62	0.68	Adaptive
13	Aje	0.50	0.50	0.47	0.42	0.55	Adaptive

14	Amenam Blend	1.82	1.82	1.56	1.21	3.76	Reactive
15	Antan Blend	1.31	1.31	1.22	1.12	0.62	Adaptive
16	Asaramatoru	0.96	0.96	0.88	0.81	0.54	Adaptive
17	CJ Blend	0.89	0.89	0.81	0.75	0.74	Adaptive
18	EA Blend	1.38	1.38	1.24	1.09	1.57	Adaptive
19	Ebok	0.27	0.27	0.23	0.19	1.95	Reactive
20	Eremor	0.75	0.75	0.68	0.60	1.88	Adaptive
21	Ima	-0.30	-0.30	-0.25	-0.22	1.29	Adaptive
22	Obe	1.48	1.48	1.39	1.28	1.69	Adaptive
23	Jones Creek	0.56	0.56	0.52	0.48	0.43	Adaptive
24	Okono Blend	0.75	0.75	0.70	0.63	1.04	Adaptive
25	Okoro	1.53	1.53	1.43	1.32	0.79	Adaptive
26	Okwori	2.24	2.24	2.10	1.96	0.89	Adaptive
27	Otakikpo	0.16	0.16	0.14	0.12	0.70	Reactive
28	Okwuibom e	1.45	1.45	1.33	1.23	0.96	Adaptive

29	Oyo	1.97	1.97	1.79	1.63	0.81	Adaptive
30	Pennington	0.79	0.79	0.72	0.66	0.67	Adaptive
31	Ukpokiti	1.06	1.06	0.99	0.91	0.73	Adaptive
32	Yoho Light	0.85	0.85	0.78	0.71	0.68	Adaptive
33	Zafiro	1.69	1.69	1.60	1.47	0.83	Adaptive
34	Okwuibom Condensate	0.15	0.15	0.13	0.11	1.07	Reactive
35	Ajapa	1.69	1.69	1.52	1.37	0.40	Adaptive
36	Nembe	1.03	1.03	0.96	0.88	1.18	Adaptive
Overall Average	1.12	1.12	1.03	0.94	0.97	Adaptive	

Table 5 presents the comparative performance of three fiscal management strategies across 36 Nigerian crude oil grades.

- The **Adaptive strategy ($\bar{A}$)** shows the **lowest mean volatility** and most stable fiscal outcomes across 83% of the grades.
- The **Reactive strategy ($\bar{R}$)** moderately improves fiscal performance but lags where market volatility is high or irregular (e.g., Amenam Blend, Usan, Otakikpo).
- The **Passive strategy ($\bar{P}$)**, which reflects Nigeria's current fiscal practice in many cases, exhibits the highest exposure to price volatility.

The results demonstrate that implementing an adaptive fiscal model, guided by real-time data smoothing and dynamic response mechanisms, can reduce fiscal exposure to crude price shocks by an estimated 20–40%, improving Nigeria’s fiscal resilience and sustainability.

This adaptive framework aligns with emerging best practices in fiscal risk management (Schimtz, 1984; Aroyo et al, 2023) and supports the development of Nigeria’s Fiscal Stabilization Fund (FSF) and Oil Price-Based Rule (OPBR) reforms.

4.5 Discussion

The findings of this study provide important theoretical and policy insights into the fiscal management of oil-dependent economies, particularly Nigeria. The descriptive and volatility analyses confirm substantial heterogeneity in fiscal price differentials across crude grades. Premium grades such as Egina, Bonga, and Erha exhibit relatively low coefficients of variation, reinforcing the argument that certain crude streams offer greater fiscal predictability. Conversely, grades such as Ebok, Amenam Blend, and Usan demonstrate extreme volatility, exposing the fiscal system to asymmetric revenue shocks.

The correlation analysis further reveals that Nigeria’s major light-sweet crude grades are strongly synchronized, with correlation coefficients exceeding 0.75 among core grades. This high degree of co-movement suggests that diversification within the premium crude portfolio provides limited insulation against systemic price shocks. These findings align with fiscal stabilization theory (Blanchard & Perotti, 2002) and IMF frameworks for resource-rich economies (Baunsgaard & Symansky, 2012), which emphasize the need for institutional buffering mechanisms rather than reliance on commodity diversification alone.

More importantly, the simulation results demonstrate that adaptive fiscal management consistently outperforms passive and reactive strategies across most crude grades. The adaptive model reduces volatility exposure by approximately 20–40 percent relative to the passive regime. This supports adaptive management theory (Holling, 1978; Sterman, 2010), which argues that continuous feedback-based adjustment enhances system resilience under uncertainty.

From a broader policy perspective, the findings suggest that Nigeria’s current reliance on uniform benchmark pricing and delayed fiscal responses may amplify volatility transmission into budgetary planning. Instead, a grade-differentiated adaptive framework would allow fiscal parameters such as

stabilization buffers, savings rules, and benchmark price adjustments to respond dynamically to observed volatility patterns.

The results also contribute to the literature by extending fiscal stabilization discussions beyond aggregate oil price indices to grade-level fiscal differentials. This micro-structural approach reveals hidden volatility asymmetries that aggregate analyses often obscure. By integrating volatility measurement, correlation mapping, and adaptive simulation, the study bridges macro-fiscal stabilization theory with operational fiscal management tools.

Overall, the evidence underscores that fiscal resilience in oil-dependent economies is not merely a function of price levels but of volatility structure and responsiveness. Adaptive fiscal systems, supported by real-time data analytics and institutional learning, provide a superior pathway toward long-term revenue stability.

5. CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

This study analysed the Adaptive Management Model of Fiscal Stability about Price Volatility in Nigeria's Crude Oil Grades, employing a fiscal differentiation methodology grounded in monthly price differentials of 36 Nigerian crude grades. The research offers an innovative managerial and policy framework for stabilising Nigeria's oil income base through the integration of descriptive statistics, volatility analysis, correlation mapping, and adaptive fiscal simulations. The results indicated considerable price variation and volatility differences among Nigerian crude grades. Premium grades such as Egina, Bonga, and Forcados demonstrated stable price behaviour, however medium and heavy grades like Usan, Amenam Blend, and Ebok experienced significant volatility, presenting fiscal risks.

A comparative simulation of Passive, Reactive, and Adaptive fiscal management systems revealed that the Adaptive strategy consistently yielded the lowest volatility across various oil grades, attaining up to a 40% enhancement in fiscal stability compared to the passive model. This result confirms that ongoing, data-informed fiscal modifications rather than delayed or static reactions are crucial for maintaining government revenue and budget equilibrium in a fluctuating oil market context. This research enhances fiscal management literature by implementing an Adaptive Fiscal Response Framework (AFRF) tailored for resource-dependent economies. This concept corresponds with the

adaptive systems theory (Sterman, 2010) and the IMF's fiscal stabilisation principles (Baunsgaard & Symansky, 2012), highlighting dynamic management rather than static policy norms.

5.2 Policy and Managerial Recommendations

Based on the findings, the following recommendations are proposed:

- 1. Institutionalize an Adaptive Fiscal Management Framework (AFMF):**

The Federal Government of Nigeria should implement a digitalized fiscal model that continuously adjusts budgetary benchmarks to real-time crude oil price differentials. This model would serve as an early warning and response mechanism against price volatility.

- 2. Differentiate Fiscal Policies by Crude Grade:**

Rather than applying a single fiscal rule for all crude grades, differentiated policies should be adopted. For example, high-volatility grades (like Usan or Amenam Blend) may require higher stabilization buffers or hedging mechanisms than more stable ones (like Egina or Bonga).

- 3. Establish a Fiscal Volatility Index (FVI):**

Create a performance indicator derived from monthly volatility and coefficient of variation across grades. The FVI can guide fiscal planners in determining optimal saving, investment, or spending thresholds in the sovereign wealth and stabilization funds.

- 4. Integrate Data-Driven Decision Systems (DDDS):**

Management information systems should be embedded within the Ministry of Finance and NNPC to automate fiscal response triggers based on moving averages and exponential weighted forecasts of crude price differentials.

- 5. Promote Fiscal Learning and Scenario Simulations:**

Continuous scenario testing should be institutionalized, allowing policymakers to compare passive, reactive, and adaptive fiscal responses before annual budget formulation. This process will improve fiscal resilience through iterative learning.

- 6. Strengthen the Sovereign Wealth Fund and Stabilization Account:**

Reinforce these institutions to act as adaptive buffers that automatically adjust savings and withdrawals based on deviations from the benchmark price differential trends.

- 7. Capacity Building for Fiscal Managers:**

Train fiscal and energy sector managers in systems modeling, volatility forecasting, and adaptive policy design to ensure effective use of fiscal simulation tools.

5.3 Managerial Implications

This study underscores the necessity of strategic agility and systems thinking in the administration of public finance from a management standpoint. Managers should regard fiscal policy as a dynamic management system that continuously senses, learns, and adapts, rather than as a fixed, annual rule-based procedure.

Implementing adaptive management in the oil sector will enable decision-makers to synchronise fiscal discipline with market intelligence, facilitating Nigeria's oil-dependent economy's transition to long-term sustainability.

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**ADHERENCE TO ORGANIZATIONAL ETHICAL NORMS: A NECESSITY FOR
IMPROVED EMPLOYEE'S PERFORMANCE (EMPIRICAL)**

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ABSTRACT

Organizational ethical norms play a crucial role in shaping and improving performance, particularly in manufacturing organizations. Ethical norms regulate employee behavior, mitigate unethical practices such as bribery, fraud, corruption, discrimination, harassment, and other workplace misconduct, and thus contribute to overall success in performance. Despite the importance recognition of ethics in public organizations, there remains a need to explore its impact on profit making organizations. The study examines three specific objectives: examine employees' perceptions of workplace ethical norms, assess the relationship between ethics and employees' commitment to work, and evaluate the role of management enforcement in ethical standards and its impact on organizational performance. This study adopted a cross-sectional survey research design to examine the adherence of organizational ethical norms a necessity for improved performance in selected manufacturing organizations in Lagos State, Nigeria. A structured questionnaire was used to collect primary data from respondents. The reliability of the research instrument was confirmed using Cronbach's alpha coefficients ranging from 0.78 to 0.92. Data analysis was conducted using descriptive and inferential statistical techniques. Findings revealed that organizational ethical norms significantly improved performance, enhance employee commitment and create an impactful ethical climate that fosters productivity and efficiency. Organization ethical norms/ practices were found to have a positive effect on employee engagement, teamwork, and adherence to corporate policies. The study concluded that strengthening organizational ethical norms is essential for improving organizational performance. And thus, recommended that organizations implement regular ethical

training programs, energize strict ethical policies, and promote a transparent work culture to ensure sustainable success.

Keywords: Adherence, Organizational, Ethical norms, Necessity, Performance

1.0 INTRODUCTION

1.1 Background to the Study

The need to promote employees understanding of ethical principles and standards in business operational activities depend to a large extent on the role of organizational leaders through application and implementation of fairness, compassion, integrity, honor, and responsibility (Qiu & Peschek, 2013). Despite, numerous ethical challenges faced by modern organizations like corruption, bribery, fraud, discrimination, harassment, and other forms of misconduct, many organizations have ensured codes of ethics that establish guidelines for acceptable behavior and moral framework that directs both organizational and employee conduct in all business activities, either or both internally and externally.

Organizations continuously strive to cultivate an ethical business climate that fosters responsible decision-making and sustainable success. This help recognize the distinction between right and wrong and serve as role models in demonstrating honesty, fairness, and respect in their interactions with colleagues and customers (Al-Nashash et al, 2018). Ethical business conduct fosters trust, strengthens workplace relationships, and enhances overall organizational performance (Abiodun et al., 2014).

Workplace ethics, function as a regulatory mechanism for organizations to minimize unethical practices and promote a culture of integrity and accountability on organizational performance, particularly for non-profit enterprises. Ethical work climates shape the collective moral reasoning of employees, providing them with strong foundation for making ethical decisions (Sapada et al, 2017). Irrespective of the individual's possession of ethical reasoning skills, the translation into action is influenced by contextual factors such as collective moral emotion (empathy) and collective ethical efficacy. Thus, this study aims to examine adherence to organizational ethical norms: A necessity for improved employees' performance in manufacturing organizations.

1.2 Statement of the Problem

The desire for fairness among workers has significantly influenced behavioral etiquette, honesty, self-discipline, and consequently, the level of performance and productivity within an

organization. However, in recent times, this reputation has diminished as many Nigerian workers appear to prioritize personal gain over adherence to ethical standards in employment relationships (Okeke , 2025).

The absence of ethical norms within organizations impact on employee relations, loss of employee's respect, erosion of trust and fosters tension that hinders effective leadership and organizational success (Brown & Trevino, 2006).

Beyond internal conflicts, the root causes of unethical behavior lies in poor planning and unrealistic business expectations, as unrealistic quotas may drive individual's to engage in unethical practices in order to meet targets (Pinakshi, 2018). Unmonitored employees may underperform due to non-availability of training programs to upgrade skills and knowledge (Treviño & Nelson, 2021).

1.3 Objectives of the study

The general objective of the study focus on adherence to organizational ethical norms: a necessity for improved performance using selected manufacturing organization, while the specific objectives of the study are to:

- I. Examine employees' perceptions of workplace ethical norms on performance in manufacturing organizations.
- II. Assess the relationship between workplace ethics and employees' commitment to work in manufacturing organizations.
- III. Evaluate the role of management enforcement in ethical standards and its impact on organizational performance.

1.5 Research Hypotheses

H₀₁: There is no relationship between employees' perceptions of workplace ethical norms and performance in organizations.

H₀₂: There is no significant relationship between the workplace ethics and employees' commitment to work in manufacturing organizations

H₀₃: The role of management enforcement in ethical standard behavior has no significant impact on performance of the manufacturing organizations.

2.0 LITERATURE REVIEW

2.1 Concept of Ethics

Ethics evolved from a Greek word 'ethos', meaning 'character', Plato and Aristotle posited that ethics is 'Do to others as what you expect from people to you'. Thus, it requires judgment and reasoning in decision making that provide answers to questions of what is right, wrong, fair or just conduct (Omisore & Oyende, 2015). Ethics can also be defined as the art and discipline of applying principles and frameworks to analyze and resolve complex moral dilemmas.

Askew (2015), posits ethics, as the guiding values; principles and standards that help people determine how things ought to be done for both work and one's personal life.

In recent times, convictions on what is right or wrong are influence by religious belief, cultural roots, family background, personal experiences, laws, organizational values, professional norms and political habits.

2.1.1 Workplace Ethics

Workplace ethics describe set of values, that include the right attitude, correct behaviour, respect for others and effective communication in the workplace (Omisore & Oyende, 2015).

Schwartz (2007), posits "ethics" as an ethical approach with increasingly vital role not just for the success of businesses but also for a favorable image of businesses in modern era. The term "corporate social responsibility" refers to all required practices and ideas of individual and corporate organizations public interest accountability, charitable giving, and governance.

2.1.2 Ethical Behavior and Employees' Relations

Ethical behavior refers to way of inconsistency with one' personal values and the commonly held values of the organization and society, (Nwosu, 2020). Greater success in organizations thus depend on individuals to act ethically into everyday business conduct.

Ethical behavior and the employment relations in any work organizations enhance general development: Increase production, wealth creation, political stability and the inclusive benefits of sustainable human developments (Zheng et al., 2010).

2.1.3 Organizational Performance

According to Adda et al., (2016), Organization performance refer to recurring activities of establish organizational goals, monitor progress goals, and adjustments to achieve these goals more effectively and efficiently.

The concept of organizational performance entails the comparison of an organization's goals and objectives with its actual performance in three distinct areas: financial performance, market performance, and shareholder value. Financial performance refers to an organization's results/ return on investment and assets. The market performance refers to company's ability to distribute their output in the most cost-effective way that returns a reasonable amount to suppliers. In addition, market performance refers to the ability of a company to meet the demands and expectations of consumers regarding the goods or services produced (or stewardship of the environment and responsibility to the community). Finally, shareholder value refers to the value of what a person holding shares in the firm possesses.

Carroll, (2019) asserts that organizational performance refers the “transformation of inputs into outputs in order to achieve certain outcomes. Also, performance inform the relationship between minimal and effective cost (economy), effective cost and realized output (efficiency), and output and achieved outcome (effectiveness). However, there is no general agreement in the literature on the criteria to be used in assessing organizational performance (Bolman & Deal 2013; Van der & Steyn, 2018).

2.2 Theoretical Review: Two theories are examined, but the study is anchor on the stakeholder theory of organization management and business ethics that deals with values and morals in managing an organization.

2.2.1 Stakeholder’s Theory (Freeman, 1984)

This theory maintains the need for an organization to engage in active social role in the society where it operates due to it dependency for sustenance (Fatoki, 2012). Beyond its stockholders, a firm has a number of stakeholders that include employees, customers, suppliers, distributors, creditors, host communities and the government. The theory examines performance and success in relation to how well it is able to manage its relationships with these stakeholders (Freeman et al., 2014). Indeed, to succeed, managers need to harmonize the usually conflicting interests of these stakeholders. Where these interests are properly managed, the support of the stakeholders can be counted upon, as the firm’s becomes good platform upon which the stakeholders’ interests can be maximized (Duke et al., 2012

The theory takes into consideration the need to satisfy interested parties capable of influencing organizational performance if the organization is to survive in the intense environment. Corporate Social Responsibility has become a necessity in recent time due to the goodwill it generates, and for the fact that interdependence exist between the corporate firms and the environment where they operate. Thus, the information disclosed to the stakeholders may be assumed proper by the organization, in order to legitimate it involvement in the social processes.

Stakeholder theory is an extension of the agency view, where boards of directors are to take care of the interests of shareholders. However, this narrow focus on shareholders has undergone a change and boards are now expected to take into account the interests of many different stakeholder groups, including interest's groups linked to social, environmental and ethical considerations (Anggraeni, 2017; Donaldson & Preston, 1995; Agle et al., 2018).

Thus, the theory provides a nomenclature upon which the roles of employees are considered inevitable and germane in facilitating and realizing organizational objectives as critical with stakeholder, through maintenance of ethical practices that help denounce and prohibit any kind of ambiguity or an unorthodox behavior contrarily to the perceived and expected ethical norms.

2.2.2 Participatory Management Theory

Participatory management theory was propounded by Bavelas and Lewin (1942). And emphasize the concern for delegation of decision-making authority to employees. Participatory management cut across many disciplines such as public administration, urban planning and public policy making. The theory does much more than recognize that employees ought to be able to recommend changes or course of action, but rather reflect that authority should be transferred to and shared with employees (Andrea, 2015).

The theory stems from understanding what the culture of an organization or firm represents. Conceptually, organizational culture is thought to represent a symbolic and ideal system composed of value and norms implemented by its founders, shared and reflected to influence behaviors of its members or employees. The culture of the organization is in turn used to guide the organization's work. Participatory management is a shift in the management paradigm away from a top-down approach to a more self-facilitated and self-sustained approach. Employees are given the freedom and responsibility accompanied by all the necessary tools needed to delegate decision-making, authority

and evaluations of foreseeable/unforeseeable problems. One notable tool in participative management is the implementation of the contingency approach, which acknowledges that every problem is different; and therefore every problem requires different approaches and solutions.

Empirical Review

Various earlier studies have established an association between ethical practices in workplace and performance outcomes. The presence of ethical issues exerts a direct influence on the formulation and implementation of policies and procedures, hence exerting an effect on the overall productivity of employees. Hewawaduge and Payithra (2018) study center on the ethical behavior of employees. According to the study findings, organizational ethics has the distinct capability to enhance productivity, morale, and confidence within the workplace. Organizations derive financial gains from individuals who possess a robust work ethic, hence rendering such employees highly valued by firms. This implies that the absence of employee commitment, deficient organizational structure, and inadequate interpersonal abilities may exert an adverse impact on the overall productivity of the organization.

The study by Ongong'a and Akaranga (2018) examined the extent to which the personnel of oil and gas firms in River State adhere to ethical business practices. The determinants were investigated with a cross-sectional survey approach. Based on the findings of the data analysis, a positive link was seen between workplace ethics and employee dedication to their profession within the specific setting of Nigeria.

A study by Adeyeye, et al (2015) titled “Workplace ethics and employees’ performance in Nigeria”. Discuss how work ethic affects workers job performance by evaluating how either strong work ethics (SWE) or weak work ethics (WWE) contribution to encourage or discourage workers job performance. Literature review and theoretical ground point towards the need for workers to promote ethical practice and discourage unethical acts that undermine corporate image and excellent performance. This study proposed that strong work ethics results in excellent work performance therefore, it is imperative for employees and organizations to promote good practices in the world of work.

In another research study, Mellahi & Morrell, (2017) conducted an experimental investigation to explore the relationship between professional ethics and workplace efficiency. The researchers

employed a structural model in their study. And the findings, evident that professional ethics exert a significant influence on an individual's job performance. Based on the observed factor, it was inferred that there exists a modest to moderate correlation between work ethics and job productivity. This phenomenon attributed to the influence of other elements beyond mere skill, such as job satisfaction, engagement, and organizational commitment, on work-related outcomes

Remigio, (2022); Hassan et al., (2014) studies show that adherence to ethical ideas influence employee's performance. The results suggest that to promote desired behavior for organizations, managers should provide an example of moral behavior and create normative guidelines that staff members are encouraged to follow. When moral behavior is absent from an organization, employees perform poorly because they are not given guidance on moral behavior and are therefore unable to prevent occurrence of unfavorable performance.

3.0 RESEARCH METHODOLOGY

This chapter focused on the research design using a cross-sectional survey to explore the relationship between variables of similar contexts to gain insights into the adherence to organizational ethical norms on improved performance of selected manufacturing organizations.

This research design is considered suitable for examining the current status of workplace ethical norms and also for drawing generalized conclusions from the data collected.

3.1 Population of the Study

The population of study comprised of one thousand and three hundred and seventy (1370) employees from selected manufacturing organizations in Lagos State, Nigeria. Specifically, the study focused on six (6) prominent manufacturing organizations operating within the state. These organizations diversity include food and beverages, cement production, and construction; chosen based on their size, operational scope, relevance and contributions to the manufacturing sector. The selection was aimed at ensuring a comprehensive representation of the manufacturing industry, thereby enhancing the generalizability of the findings.

3.2 Sample Size/Techniques/Instrument

The selection of sample population study is simple random. In addition, the composition size of 400 respondents across the selected six (6) organizations are based on stratified sample, using parameters

such as the organization rank (middle and top management level), Head of sub-unit/section, and not less than a year experience on the position of responsibilities/duties. While data was collected through administering of close-ended and structured questionnaire into two sections: A and B that allowed and guarantees the protection of participant's privacy. Section 'A' covered respondent's bio data, and Section 'B' was on the multidimensional variables adopted to measure sub-variables of organizational factors. Six points modified Likert scale type was used to elicit responses from every question in the questionnaire and this covered; Very High (VH) = 6; High (H) = 5; Moderately High (MH) = 4; Moderately Low (ML) = 3; Low (L) = 2; Very Low (VL) = 1

3.2.1 Statistical Determination of Sample Size Figure

Using Taro Yamane statistical formula determination:

$$n = \frac{N}{1 + (e)^2}$$

Where n is the sample size, N is the population size and e is the margin of error.

$$n = \frac{1370}{1 + 1370(0.05)^2}$$

$$n = 400$$

Table 3.2.2

Population of Selected Industries in Lagos State

S/N	ORGANIZATION NAME	NUMBER OF QUESTIONNAIRE	RETURNED QUESTIONNAIRE
1,	Nigeria Breweries Plc. (Iganmu)	67	62
2.	Cadbury Nigeria Plc.	67	64
3.	Nigeria Bottling Company Plc.	67	58

4.	Dangote Cement Plc.	67	61
5.	First Aluminium Plc.	66	58
6.	PZ Plc.	66	57
	TOTAL	400	360

Source: Field Survey Results, 2026

3.3 Pilot Study and Reliability of the Research Instrument

A pretest of the questionnaire was conducted in order to evaluate the relevance and proper understanding of the research questions. Furthermore, 10% of respondents were accessed and interviewed for probable required modification.

The result of the pilot study indicated that the research instrument was reliable, since the Cronbach's alpha of the scale for all the variables was greater than 0.70. Some of the questions were re-constructed while some sections were reframed entirely based on the suggestions of the respondents as those questions that failed the validity and reliability test were dropped in the final questionnaire used for data collection.

The research instrument was subjected to reliability test to guarantee the internal consistency of the set of items through Cronbach's alpha co-efficient, using Statistical Package for Social Science (SPSS). Overall reliability value for the instrument of the study was 0.927.

3.4 Method of Data Analysis

The data analysis was done in two stages: the descriptive and inferential analysis. The first stage, descriptive analysis featured the descriptions of the properties of the data to show the responses of participants using tools such as frequencies and percentage distribution tables.

The second stage, the inferential analysis entail using statistical tools of multiple regression method of analysis using SPSS (Statistical Package for Social Sciences) software version 26.0 to test the effect of the independent variables on the dependent variable for hypotheses.

4.0 DATA ANALYSIS, RESULTS AND DISCUSSION OF FINDINGS

This part presents data analysis, result findings and interpretation. Specifically, the data analysis was in line with the specific objectives where patterns were investigated, interpreted and implications drawn on them. Diagnostic tests were done prior to the regression tests to determine whether the data could be subjected to further tests.

T-test of significance was used to test whether the change in the dependent variables were statistically significant at 95% confidence level. The results of the statistical analysis as well as test of Hypothesis were presented.

4.1 Response Rate

The response rate shows the percentage of questionnaires returned and considered usable. A total of 400 copies of the questionnaire were distributed to employees and managers of selected manufacturing organizations. Out of these, 360 were returned and found usable, achieving a response rate of 90.0%. Forty (40) copies of the questionnaire were either not returned or contained incomplete information, making them unsuitable for analysis.

Table 4.1

Questionnaire Response Rate

Response	Total	Percentage (%)
Returned	360	90.0
Unreturned	40	10.0
Total	400	100.00

Source: Field Survey Results, 2026

4.2 Diagnostic Test

It is crucial to test whether assumptions of linearity, homoscedasticity, multicollinearity and normality hold when dealing with inferential statistics, since when they do not hold, it is not possible to draw reliable and accurate deductions about reality. The following assumptions for linear regression were checked: normality, linearity, multicollinearity and homoscedastic.

Normality Test

To test for normality, statistics estimating measures of shape including skewness and kurtosis were used. The rule of thumb is that a variable is reasonably close to normal if its skewness and kurtosis have values between -3.0 and +3.0 as recommended by Kline (1999). The normality of the variables is shown in table 4.2.1

Table 4.2.1
Results of Normality Diagnostic Test

Variables	Skewness		Kurtosis	
	Statistic	Std. Error	Statistic	Std. Error
Ethical Leadership	-1.955	0.102	2.672	0.203
Employee Integrity	-1.312	0.102	2.324	0.203
Workplace Openness	-1.074	0.102	1.605	0.203
Work Compliance	-.792	0.102	1.585	0.203
Organizational Culture/Value	-1.186	0.102	2.249	0.203
Team Work	-0.385	0.102	1.060	0.203
Employee Morale	-0.103	0.102	0.154	0.203
Organizational Performance	-0.461	0.102	-0.015	0.203

Source: Researcher's Field Survey Results, 2026.

The results in Table 4.2.1 show that the variables are normally distributed with skewness and kurtosis values ranging between -3.0 to +3.0. This implies that the study's variables, namely ethical leadership, employee integrity, workplace openness, work compliance, organizational culture, team work, employee morale, and organizational performance, are normally distributed. Therefore, the data distribution meets the assumptions of normality required for advanced data analysis.

Linearity Test

According to Osborne and Waters (2002), multiple linear regression can only accurately estimate the relationship between the dependent and independent variables if the relationship is linear in nature. The absence of a linear relationship between the independent & dependent variables may result in regression analyses underestimating the true relationship.

The linearity test was conducted using **Pearson's moment correlation coefficient** between **improved performance** (the dependent variable) and each of the hypothesized explanatory variables that include **ethical leadership, employee integrity, workplace openness, work compliance, organizational culture, team work, and employee morale**.

The results of the linearity test indicated that there is a significant linear relationship between the dependent variable (organizational performance) and the independent variables.

The linearity results are shown in table 4.2.2.

Table 4.2.2

Results of Pearson's Correlation Linearity Test

		INDUSTRIESs Performance	Conclusion
Ethical Leadership Employee Integrity Workplace Openness	Pearson Correlation	0.449**	Linear
	Sig. (2-tailed)	0.000	
	N	360	
Work Compliance Ethical Leadership Employee Integrity	Pearson Correlation	0.564**	Linear
	Sig. (2-tailed)	0.000	
	N	360	
Workplace Openness Ethical Leadership	Pearson Correlation	0.591**	Linear
	Sig. (2-tailed)	0.000	
	N	360	
Employee Integrity	Pearson Correlation	0.652**	Linear
	Sig. (2-tailed)	0.000	
	N	360	

Correlation is significant at the 0.01 level (2-tailed).

Source: Researcher's Field Survey Results, 2026.

Table 4.2.2 indicates that there is a positive and significant linear relationship between organizational performance and the explanatory variables, namely ethical leadership, employee integrity, workplace openness, and work compliance, at a 5 percent level of significance.

The results indicate that employee integrity ($r = 0.652, p < 0.05$), workplace openness ($r = 0.594, p < 0.05$), and work compliance ($r = 0.564, p < 0.05$) have a positive and significant linear relationship with organizational performance. This implies that as these variables increase, the performance of the organization also improves.

A moderately positive but significant relationship was also found between ethical leadership and organizational performance ($r = 0.449, p < 0.05$). This implies that the presence of strong ethical leadership positively influences organizational performance, albeit to a lesser extent compared to other variables.

The implication of these results is that there is a co-movement of variables in the same direction. However, it is essential to note that correlation does not necessarily imply causation (McCuiston et al., 2004). Therefore, it is important to conduct a regression analysis to establish any causal relationships. Since the population is normally distributed, linear regression is suitable and can be estimated in this study.

Multicollinearity Test

Multicollinearity exists when more than one variable measures the same value (Hair et al., 2006). It refers to a high correlation between independent variables that are intended to predict a specific dependent variable. The existence of multicollinearity may significantly affect regression and statistical results, leading to misleading interpretations.

In this study, multicollinearity was assessed using the **Variance Inflation Factor (VIF)** and **Tolerance** values. A **VIF greater than 10** and **Tolerance less than 0.1** suggest the presence of multicollinearity.

The results of the multicollinearity test indicate that all the independent variables have **VIF values less than 10** and **Tolerance values greater than 0.1**, suggesting that there is no multicollinearity among the variables. Hence, the data is suitable for regression analysis.

Table 4.2.3

Results of Multicollinearity test

Variables		Collinearity Statistics	
		Tolerance	VIF
	Ethical Leadership	0.690	1.434
	Employee Integrity	0.497	2.017
	Workplace Openness	0.463	2.208
	Work Compliance	0.538	1.932

Source: Researcher's Field Survey Results, 2026

Table 4.2.3 indicates that all the VIFs of the variables were less than 10 and Tolerance greater than 0.1 respectively. Ethical leadership yielded the least VIF at 1.434 and Workplace openness generated the highest VIF at 2.208. This implies that there was multicollinearity and thus, all the predictor variables were maintained in the regression model, as this is within the threshold recommended by Landau and Everitt (2004).

4.3 Data Statistics Analysis, Interpretation and Discussion

The section presents the summary descriptive statistics of the variables based on the summated scale created through the presentation of percentages, frequencies, means, and standard deviations using Tables.

The mean was used as a measure of central tendency, while the standard deviation was employed as a measure of dispersion to determine how the responses varied from the mean. The interpretation of the mean scores of the respondents is as follows:

- **1.00 - 1.49:** Very Low
- **1.50 - 2.49:** Low
- **2.50 - 3.49:** Moderately Low
- **3.50 - 4.49:** Moderately High
- **4.50 - 5.49:** High
- **5.50 - 6.00:** Very High

The standard deviation indicates the distribution of responses relative to the mean. A standard deviation of more than 1 indicates that responses are moderately distributed, while a value less than 1 suggests no consensus among the responses obtained.

Regression Results on Research Hypotheses

H₀₁: There is no relationship between employees' perceptions of workplace ethical norms and performance in organizations.

Table 4.3.1

		Correlations	
		Employees' perception	Ethical norms and performance
Employees performance	Pearson Correlation	1	.263**
	Sig. (2-tailed)		.000
	N	360	360
Ethical norms and performance	Pearson Correlation	.263**	1
	Sig. (2-tailed)	.000	
	N	360	360

**. Correlation is significant at the 0.01 level (2-tailed).

Table 4.3.1 above shows a Pearson's Product Moment Correlation coefficient (r) of 0.263. This means that a significant and positive relationship exist between employees' perception and ethical norms and performance, thus employees perception of workplace ethical norms will improve the employees performance in the manufacturing organizations.

Table 4.3.2

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.766	.720	.659	.692	.720	13.686	1	35	.000

a. Predictors: (Constant), Employees perception

Source: SPSS Output, version 26

Table 4.3.2 above shows that the correlation coefficient 0.766 indicates a significant relationship between employee's perception of ethical norms and performance. The Coefficient of Determination (R^2) = .720 implies that 72% variation in the employees workplace performance in manufacturing organizations is explained by variations in employees perception, indicates that the model has a good fit. The 28.0% is elucidated by other variables not captured in the model. Conventionally, $F\text{-Change} = 13.686 > \text{Sig. } F\text{-Change} = 0$. Hence, it is concluded that the model is relevant. The adjusted R^2 of 66% indicates that, if the entire population is considered for this study, deviation will only be by .005(0.5%), and the standard error of estimate is 0.692. hence, the decision above is valid.

Table 4.3.3 **Coefficients^a**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.263	.540		2.370	.002
	hyp 1	.189	.069	.142	2.001	.000

a. Dependent Variable: Performance

Table 4.3.3 shows coefficients of independent employees' perception at workplace (.189) has effect on performance. Therefore, the (probability) and Beta=0.142; t-statistics value of (.000) and 2.001 suggest that the relationship is significant since alpha level of 0.05 is greater than the p-value of 0.000. Thus the null hypothesis is rejected which state that no relationship exist between employees perception and performance in manufacturing organization. The study results aligned to the findings of Arvey and Jones, (2005), Trevino and Nelson, (2010), showing that organizational ethics contribute to positive work outcomes, employee satisfaction and organizational success. The significant of the study findings is that a positive work environment culminates, and enhances employee perception and workplace satisfaction.

Hypothesis 2

H₀₂: There is no significant relationship between the workplace ethics and employees' commitment to work in manufacturing organizations.

Table 4.3.4

Correlations		Workplace ethics	Employees commitment
Workplace ethics	Pearson Correlation	1	.304**
	Sig. (2-tailed)		.000
	N	360	360
Employees' commitment	Pearson Correlation	.304**	1
	Sig. (2-tailed)	.000	
	N	360	360

**. Correlation is significant at the 0.01 level (2-tailed).

. Table 4.3.4 above shows a Pearson's Product Moment Correlation coefficient (r) of 0.304. This means that a significant relationship exists between workplace ethics and employees' commitment, thus an improvement in workplace ethics will improve the employees commitment in

manufacturing organizations.

Table 4.3.5

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics			
						F Change	df1	df2	Sig. F Change
1	.503	.462	.379	.330	.462	18.841	1	35	.000

a. Predictors: (Constant), Workplace ethics

Table 4.3.5 above shows that the correlation coefficient is (0.506) showing that a significant relationship exist between workplace ethics and employees' commitment. The Coefficient of Determination (R^2) = .462 implies that 46.2% variation in employees' commitment is explained by variations in workplace ethics, thus model has a fairly good fit. The 53.8% is elucidated by other variables not captured in the model. The F-Change = 18.841 > Sig. F-Change = (.000) The adjusted R^2 of 37.9% indicates that, if the entire population is considered for this study, deviation will only be by .005(0.5%), and the standard error of estimate is 0.330, hence, the decision above is valid.

Table 4.3.6

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.400	.496		2.542	.002
	hyp 1	.228	.078	.169	2.002	.000

a. Dependent Variable: Employees' commitment

Table 4.3.6 shows coefficients of independent workplace ethics (.163) has effect on employees' commitment to work. Therefore, the (probability) and Beta=0.139; t-statistics value of (.000) and 1.974 suggest that the relationship is significant since alpha level of 0.05 is greater than the p-value of 0.000. Thus the null hypothesis is rejected which state that no significant relationship exist between workplace ethics and employees commitment to work in manufacturing organization. The study results aligned to the findings of De Cremer and Moore (2020), Allen and Meyer, (2012)), showing that workplace ethics contribute to workplace openness, trust and integrity, increased organizational commitment and performance.

The significant of the study findings is that ethical climates promote high levels of employee engagement and integrity, which propel enhance job commitment and noticeable improved performance.

Table 4.3.7

Correlations			
		Enforcement standar	Employees performance
Enforcement standar	Pearson Correlation	1	.136**
	Sig. (2-tailed)		.000
	N	360	360
Employees' performance	Pearson Correlation	.136**	1
	Sig. (2-tailed)	.000	
	N	360	360

**. Correlation is significant at the 0.01 level (2-tailed).

Table 4.3.7 above shows a Pearson's Product Moment Correlation coefficient (r) of 0.136. This means that a significant relationship exist between enforcement in ethical standard behavior and employees' performance, thus further improvement by the management to enforce ethical standard behavior will improve the effectiveness of employees in the manufacturing organizations.

Table 4.3.8

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.546	.411	.392	.360	.411	3.858	1	33	.000

a. Predictors: (Constant), Enforcement standard

Table 4.3.8 above shows the correlation coefficient (0.546) indicating significant relationship between enforcement in ethical standard behavior and employees' performance effectiveness. The Coefficient of Determination (R^2) = .411 implies that 41.1% variation in employees' performance effectiveness is explained by the enforcement in ethical standard behavior. This indicates that this model has fairly good fit. The 68.9% is elucidated by other variables not captured in the model. Conventionally, $F\text{-Change} = 3.858 > \text{Sig. } F\text{-Change} = 0.000$. The adjusted R^2 of 39.2% indicates that, if the entire population is considered in the study, deviation will be by .005(0.5%), and the standard error of estimate is 0.360. Hence, the decision above is valid.

Table 4.3.9

		Coefficients ^a				
		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
Model		B	Std. Error	Beta		
1	(Constant)	1.297	.412		2.025	.012
	hyp 1	.190	.073	.155	2.110	.000

a. Dependent Variable: Performance

Table 4.3.9 shows coefficients of independent management enforcement standard behavior (.190) has effect on employee's performance to work. Therefore, the (probability) and Beta=0.155; t-statistics value of (.000) and 2.110 suggest that the relationship is significant since alpha level of 0.05 is greater than the p-value of 0.000. Thus the null hypothesis is rejected which state that no significant relationship exist between role of management in enforcement of ethical standard behavior and employees performance in manufacturing organization. The study results aligned to the findings of Brown & Trevino, (2006) that ethical leadership positively impacts employee attitudes and behavior, boost job performance and organizational effectiveness.

The significant of the study findings is that management enforcement of ethical standard behavior, and reinforcement foster transparent work environment being critical to achieving sustainable organizational success.

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

Ethical norms in the workplace are fundamental guidelines that dictate how employees and management should behave within an organization. The section provides an analysis of data collected from selected manufacturing organizations and evaluate how adherence to ethical norms impacts performance.

5.2 Conclusion

The data analysis revealed a strong positive relationship between adherence to workplace ethical norms and employees performance. Organizations that maintain high ethical standards experience positive work environment that culminates and enhance employee's perception and workplace satisfaction, enable ethical climates promote high level of employees engagement and integrity that propel job commitment and noticeable improved performance, and enforcement of standard behavior would foster transparent work environment critical to achieving sustainable organizational success. However, weak management enforcement of ethical norms contributes to higher rates of unethical behavior, reduced morale, and lower overall performance. Hence, management interest and

commitment must to prioritize ethical practices as part of their strategic objectives to ensure sustainable growth and development.

5.3 Recommendations

Based on the findings, the following recommendations are made:

1. Intensifying ethical culture: Organizations should establish a culture that prioritizes ethics through a detail process of communication, and define modules for all employees.
2. Ethical Training Programs: Regular workshops and seminars on ethical standards should be conducted to facilitate employee awareness and alertness.
3. Leadership Commitment: Management should lead by example in adhering to ethical standards, creating a culture of integrity.
4. Enforcement Mechanisms: Strict measures should be put in place to address unethical behavior, ensuring accountability at all levels.

5.4 Implications of Findings

Upon the result findings, the management and policy formulator within manufacturing organizations should ensure and prioritize that ethical norms are integrated into the organization's core values and practices, as a consequential implications can transit into higher employee's performance. In addition, regular training on ethical behavior, enforcement of compliance measures, can enhance performance outcomes, while management should actively model ethical behavior to set a standard for employees.

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EFFECT OF TAXATION ON CORPORATE INVESTMENT OF LISTED
CONSUMER GOODS FIRMS IN NIGERIA

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Abstract

This study examines the effect of taxation on corporate investment among listed consumer goods firms in Nigeria using panel data spanning multiple financial periods. Specifically, the study investigates the impact of Cash Effective Tax Rate (CETR) and Tax Savings on Corporate Investment (CI). Employing panel econometric techniques, the Hausman specification test supports the use of a Fixed Effects model, while diagnostic tests confirm the absence of heteroskedasticity and validate model suitability. The findings reveal that CETR exerts a positive and statistically significant effect on corporate investment, suggesting that firms with higher taxable profitability and stable tax compliance demonstrate stronger reinvestment capacity. Similarly, tax savings significantly enhance investment, indicating that fiscal incentives improve liquidity and capital allocation decisions. The results are consistent with neoclassical investment theory and internal financing theory, where after-tax profitability and retained earnings influence capital expenditure decisions. The study contributes to taxation-investment literature in emerging markets by clarifying the liquidity-adjusted interpretation of CETR and highlighting the strategic role of tax policy in stimulating corporate expansion. Policy recommendations emphasize stable tax administration, targeted tax incentives, and improved fiscal transparency to enhance productive investment in Nigeria's consumer goods sector.

Keywords: Cash Effective Tax Rate, Tax Savings, Corporate Investment, Panel Data, Fixed Effects Model, Nigeria.

1.1 Introduction

Corporate investment decisions play a critical role in determining the growth and success of a firm. These decisions are influenced by a range of factors, including market conditions, financial resources, and government policies (Cebula & Foley, 2023). One such policy that can have a significant impact on corporate investment decisions (Udochukwu et al.2022). One of

the significant factors that influence investment decisions is taxation, which has been a subject of debate among scholars and policymakers for several years (Lee & Park, 2020). Corporate investment decisions play a crucial role in the growth and development of businesses, which in turn, contributes to the overall economic growth of a country (Brown & Smith, 2019). While there is a vast body of literature that explores the impact of taxation on corporate investment decisions.

Additionally, practical issues, such as changes in tax policies and the global economic landscape, have brought about new challenges that require further research (Chen & Wang, 2021). The decision of whether to invest or not is a crucial one for corporations, as it affects their future growth and profitability. One factor that can significantly impact investment decisions is taxation (Aondohemba et al. 2021). However, there is a lack of consensus on the relationship between taxation and corporate investment. While there has been a considerable amount of research on this topic, the findings have been mixed and inconclusive. Also, Akbar and Ali, (2020) argued that high taxation negatively affects corporate investment, others find no significant relationship. Moreover, the practical issue of tax avoidance strategies adopted by corporations further complicates the matter. Cash effective tax rate (CETR) considers the actual amount of cash paid for taxes during a given period. The difference between ETR and CETR arises due to timing differences between recognizing tax expenses and paying cash taxes (Jain & Sharma, 2020).

Tax savings, on the other hand, refers to any reduction in the tax liability achieved through legitimate means (Li & Wang, 2019). Studies by Smith, and Jones, (2019) have shown that ETR and CETR are negatively related, indicating that companies with higher ETRs tend to have lower CETR, and vice versa. Several factors can influence this relationship, including the timing of tax payments, the utilization of tax incentives, and the company's tax planning strategies. A study by Li and Wang (2019) found a positive relationship between ETR and tax savings, indicating that companies with higher ETRs tend to achieve more significant tax savings through effective tax planning. Therefore, there is a need for a systematic review and meta-analysis of the literature to provide a comprehensive understanding of the effect of taxation on corporate investment decisions.

Taxation is an essential tool for governments to generate revenue and promote economic growth (Makowska, 2021). However, it can also affect the investment decisions of corporations, which may ultimately impact economic development. Consumer goods firms often find it challenging to stay abreast of the frequent changes in tax regulations, leading to potential compliance issues and unexpected financial burdens.

This lack of uniformity may hinder strategic planning and investment decisions. The inadequate infrastructure in Nigeria poses a challenge for consumer goods companies looking to expand and invest in new ventures. Issues such as unreliable power supply and poor transportation infrastructure can escalate operational costs and impact overall profitability (Chen & Wang, 2021). While previous literature from Makowska, (2021); Streimikiene, and Balezentis, (2018) has extensively examined the impact of taxation on corporate investment decisions, there are still gaps in literature, location and knowledge that need to be addressed. The current economic landscape presents new challenges to corporate investment decisions. For example, the global trend towards a lower corporate tax rate has led to concerns about the impact of tax competition on investment decisions (OECD, 2015).

While, studies reveal that taxation affects corporate investment decisions in various ways. For instance, John (2018) found that the tax system's complexity and unpredictability in Europe discouraged companies from investing in the region. Brown and Smith (2019) also showed that corporate taxes reduced investment by increasing the cost of capital. Lee and Park (2020) demonstrated that South Korea's tax incentives encouraged firms to invest in research and development. Lastly, Chen and Wang (2021) revealed that the tax policy's stability and transparency in China positively influenced corporate investment decisions. This study tries to contribute to knowledge by filling the gaps of variable, the sector to be used differ and therefore, the study will examine taxation on corporate investment using the listed consumer goods firms in Nigeria.

Despite extensive global research on taxation and investment, empirical evidence from developing economies remains inconclusive. While traditional neoclassical theory predicts that higher effective tax burdens reduce investment by lowering after-tax returns, alternative perspectives suggest that stable tax regimes and profitability-linked tax payments may signal strong earnings capacity and reinvestment potential. In Nigeria, the consumer goods sector operates within a complex tax environment characterized by corporate income tax, education tax, value-added tax compliance obligations, and other statutory levies. Yet, limited firm-level panel evidence exists on how actual cash tax payments influence investment behavior.

Therefore, the research question was formulated to attain the objectives of the study;

- i. What is the effect of Cash Effective Tax rate (CETR) on corporate investment of listed consumer goods firms in Nigeria?
- ii. What is the effect of Tax savings on corporate investment of listed consumer goods firms in Nigeria?

The main objective of the study is to examine the effect taxation on corporate investment of listed consumer goods firms in Nigeria.

The specific objectives are as follows;

- i. Determine the effect of Cash Effective Tax rate (CETR) on corporate investment of listed consumer goods firms in Nigeria.
- ii. Determine the effect of Tax savings on corporate investment of listed consumer goods firms in Nigeria.

The hypotheses of the study were formulated in the null form.

H₀₁: Cash Effective Tax rate (ETR) has no significance effect on corporate investment of listed consumer goods firms in Nigeria?

H₀₂: Tax savings has no significance effect on corporate investment of listed consumer goods firms in Nigeria?

2.1 Literature Review

Conceptual Framework

This sub-chapter reviews the conceptual frame of different scholar of previous literature in regards to the conceptuality of corporate investment, taxation, effective tax rate (ETR) (accounting), cash Effective Tax rate (ETR) and Tax savings.

Concept of Taxation

Tax is a compulsory levy imposed by the authority on individuals and firms in order to raise revenue to finance its activities promote socio-economic development and equity through redistribution of resources (Ross, Westerfield, & Jordan, 2019). Also opined, Wild, Shaw, and Chiappetta, (2020) defines tax as an instrument of fiscal policy utilized by government the world over to influence the direction of economic activities in order to attain desired goals. Thus, taxation is a revenue generating sources for government whereby individuals and corporations are mandatorily required to pay or make available their earned income for tax purposes by government. In addition, tax is a compulsory levy payable by a business entity to the taxing unit without recourse to any commensurate benefit received from the government (McWilliams, & Siegel, 2019).

Cash Effective Tax Rate

The cash effective tax rate measures the amount of cash taxes paid relative to pretax income and is calculated by dividing cash taxes paid by pretax income (De Simone, 2018). Cash effective tax rate is the amount of cash taxes paid during a given period divided by the company's taxable income for the same period (Aier et al., 2019). Cash effective tax rate is a

measure of a company's tax liability that takes into account the amount of cash taxes paid, rather than just the amount of taxes owed on paper (Du et al., 2020). The cash effective tax rate is a measure of a firm's actual tax burden, reflecting the cash outflows for taxes as a percentage of pre-tax income" (Choi & Park, 2021).

Tax Savings

According to Giannetti and Koulovatianos (2020), tax savings refer to the reduction in tax liability that individuals or companies can achieve through various tax planning strategies. In their study on tax incentives for charitable giving, Bakija and Heim (2018) define tax savings as the difference in tax liability between a taxpayer's pre- and post-donation tax returns. Plesca and Plesca (2019) describe tax savings as the amount of money that taxpayers can retain or reinvest in their businesses or personal finances due to lower tax burdens resulting from tax planning and optimization. In their analysis of the impact of tax cuts on U.S. businesses, Bivens and Mishel (2018) define tax savings as the amount of money that companies can retain or invest in their operations as a result of lower corporate tax rates.

Corporate Investment

Corporate investment refers to financial resource allocation (Berk, & DeMarzo, 2021). Investors opt for the most suitable assets or investment opportunities based on risk profiles, investment objectives, and return expectations (Liu, Chen, & Teng, 2018). Firms have limited financial resources; therefore, the top-level management undertakes capital budgeting and fund allocation into long-term assets. Managers overseeing business operations opt for short-term investments to ensure liquidity and working capital. Investment decisions are also influenced by the frequency of returns, associated risks, maturity periods, tax benefits, volatility, and inflation rates (Jain & Khanna, 2019).

Theoretical Review

The Optimal Taxation

Theory proposes that tax systems should aim to maximize social welfare, taking into account various factors such as equity, efficiency, and revenue generation. When it comes to investment, the theory suggests that taxes should be designed to encourage investment in a way that benefits society as a whole. The theory identifies two key principles of taxation on investment: the "ability-to-pay" principle and the "benefit principle" (Auerbach, & Slemrod, 2020). The ability-to-pay principle proposes that taxes should be imposed in proportion to individuals' ability to pay, which is typically measured by their income or wealth. The benefit principle, on the other hand, suggests that taxes should be imposed based on the benefits that individuals receive from government services and programs (Atkinson & Stiglitz, 2015).

In terms of investment, the optimal taxation theory suggests that tax systems should aim to balance the benefits of investment with the costs of taxation. Specifically, taxes on investment should be designed to generate revenue for the government while also encouraging socially desirable investment activities (Feldstein, 2015). For example, tax incentives can be offered for investments in areas that promote economic growth and job creation, such as research and development or renewable energy. At the same time, taxes can be imposed on investments that have negative externalities, such as pollution or speculative bubbles, to discourage harmful activities and generate revenue for the government (Feldstein, 2015).

Taxation can impact corporate investment by either encouraging or discouraging investment, and its effects can vary based on the structure and rate of taxation. One of the key debates in taxation and corporate investment is whether taxation reduces investment or not. The classical view argues that high taxes reduce investment as it lowers the rate of return on investment, making it less attractive for corporations to invest. In contrast, the theory suggests that taxes can stimulate investment by financing public goods and services, which increases the demand for goods and services, creating a more stable economic environment.

Corporate taxation also impacts investment decisions by influencing the location of investment. High tax rates in one country can drive corporations to invest in other countries where tax rates are lower. This is known as tax competition and has led to a race to the bottom in tax rates among countries. Tax competition can have negative effects on a country's tax revenue and can lead to a loss of control over their economy (Oxfam, 2020). Another way taxation can impact investment is through tax incentives. Tax incentives can be used to encourage investment in certain sectors or regions. For example, governments may offer tax credits or deductions to corporations that invest in renewable energy (Saez & Stantcheva, 2016). Tax incentives can be effective in promoting investment but can also be costly to business (OECD, 2019). In the context of investment, optimal taxation theory suggests that tax policy should be designed to promote investment while also raising sufficient revenue to fund public services and programs. One of the main principles of optimal taxation theory is the notion of the "tax wedge," which refers to the difference between the pre-tax and post-tax returns on investment. The theory suggests that tax policy should be designed to minimize the tax wedge to encourage investment and economic growth (Atkinson & Stiglitz, 1976). Additionally, optimal taxation theory recognizes the importance of ensuring that the tax burden is distributed fairly, taking into account differences in income, wealth, and investment behavior. Moreover, optimal taxation theory recognizes that tax policy can have important distributional effects on investment, with implications for economic growth and social welfare. For example, higher taxes on capital

gains can discourage investment by reducing the after-tax return on investment, while lower taxes on dividends can incentivize investment by increasing the after-tax return on investment (Feldstein, 1995).

Therefore, the study is underpinned by the optimal taxation theory. This is because the optimal taxation theory offers a framework for designing tax policy that balances the trade-offs between equity, efficiency, and revenue generation. In the context of investment, optimal taxation theory suggests that tax policy should be designed to minimize the tax wedge while also ensuring that the tax burden is distributed fairly. By promoting investment and economic growth, optimal taxation policy can contribute to social welfare and economic development.

Review of Empirical Studies

The sub-section reviews different literature studies both from abroad and Nigeria,

Cash Effective Tax Rate and Corporate Investment

Kimea, Mkhize, and Maama, (2023) investigated the factors that influence aggressive tax management practices of firms listed in East African economies. Data were collected from 99 firms for an 11-year period, from 2008 to 2018. Both cash effective tax rate and accounting effective rate were used as measures of tax planning. Multiple regression models were used for the estimation. The study results showed that smaller firms are more tax aggressive compared with larger firms, which is consistent with the political cost theory. This finding may alert policymakers and regulatory authorities (for example, revenue authorities) that small firms are most likely to avoid paying taxes compared with larger firms. This might be associated with fewer regulations and enforcements imposed on this category of business. The evidence further demonstrated that profitable firms are less tax aggressive. Consistent with the political power theory, this study has confirmed the view that profitable firms have enough earnings to pay their taxes and thus are less tax aggressive. The study further found that older firms are less involved in tax avoidance. This study has policy implications as it will assist both policymakers and firm management in their decision-making. Shareholders and firm management would benefit by understanding why some firms successfully reduce their tax burden compared to other firms.

In a study by Soojin Yoon and Hyun-Kyung Lee (2022) examined the impact of corporate tax cuts on investment behavior in Korea. The study employed descriptive research design. The study used linear regression. The study found that corporate tax cuts had a positive impact on investment behavior, particularly for small and medium-sized enterprises. The results suggest that corporate tax policies can be effective in promoting investment behaviour and supporting the growth of small and medium-sized enterprises. Therefore, the study by Soojin Yoon and

Hyun-Kyung Lee (2022) examined the impact of corporate tax cuts on investment behavior in Korea. While, this study tries to conceptualize on taxation on corporate investment using effective tax rate (accounting), cash effective tax rate and tax saving on corporate investment of consumer goods firms in Nigeria. Also, using the control variables of liquidity, firm age and profitability. Therefore, tries to bridge the gaps of variable inclusion, sector and location.

Tax Savings and Corporate Investment

A recent study by Cebula and Foley (2023) examined the impact of state-level tax policies on the investment behavior of firms in the United States. The study used the primary quantitative method to collect and interpret the collected data on a proper note. The questionnaire has been prepared with 24 questions among them 4 are demography-based questions while rest 20 questions are based on variables. On the other hand, the sample size of the research is 100 and analyzing the sample size, 100 responses have been collected as the primary data of the research. "The descriptive research design" has provided contradictory data and information to the research analysis. The study found that tax policies, such as state-level corporate tax rates and state-level property tax rates, had a negative impact on investment. The results suggest that tax policies at the state level can significantly influence investment decisions.

Methodology

The study adopted the correlational research design and aligned with positivist paradigm. The population of the study comprises all the 21 listed consumer goods firms on the Nigerian Exchange Group as at 31 December 2023. A two-point filter was used to eliminate the firms that are not appropriate for the study. Firstly, the company must be listed for the entire period of the study (2015 – 2023). Secondly, it should have the data required for the study. Data were collected from annual reports and account of seventeen (17) listed consumer goods firms using purposive sampling technique.

Table 2 Sample Size of the Study

Companies	Listing Date	Engagement
Nigerian Northern Flour Mill	1978	Active
Pz Cussons	1974	Active
International Breweries	1995	Active
Champion Breweries	1983	Active
Mcnichols Consolidated	2009	Active
Unilever Nig	1973	Active

Cadbury Nig	1976	Active
Flour Mills Of Nigeria	1979	Active
Dangote Sugar	2007	Active
Nascon Allied	1992	Active
Vitafoam Nig	1978	Active
Nigerian Enamelware	1979	Active
Guinness Nig	1965	Active
Honywell Flour Mill	2009	Active
Nestle Nig	1979	Active
Nigeria Breweries	1973	Active
Union Dicon Salt	1993	Active

Source: Author's Compilation, 2024

Therefore, the sample size of the study was 17 listed and active consumer goods firms in Nigeria.

Model Specification

The model that examines the hypotheses of the study is specified as follows:

$$CI_{it} = \alpha_{it} + \beta_1 CETR_{it} + \beta_2 TS_{it} + \varepsilon_{it}$$

Where;

CI= Corporate Investment

CETR= Cash Effective Tax Rate

TS= Tax Savings

i = Number of Firms

t = Time Period

α = Constant

ε = Error Term

Techniques of Data Analysis

Panel multiple regression was used to analyse the effect of taxation on corporate investment of listed consumer goods firms in Nigeria. The data for the study is panel in nature; Panel data lead to errors that are clustered and possibly correlated over time (Gujarati, 2003). Robustness test like Multicollinearity Test, Heteroskedasticity Test, Hausman Specification Test, Langanrangian Multiply Test was be run. Therefore, in line with the objectives and hypotheses formulated the study would make use of multiple regressions to determine the effect of independent variables on the dependent variable because it is the most suitable technique for determining the extent of the impact of independent variables on the dependent variable.

Variable Definition Measurement

Table 3 *Variables Definition, Measurement and Sources*

S/N	Variables	Proxies	Definition	Measurements	Sources
1	Dependent Variable	Net Investment	Net investment refers to the total amount a firm, organization, or economy spends on acquiring new capital assets minus the depreciation of existing assets over a given period.	Net Investment = Total Investment- Depreciation.	(Desai, Foley & Hines Jr, 2020)
2	Independent Variables	Cash Effective Tax Rate	Cash Effective Tax Rate (CETR) is a liquidity-based tax measure calculated as cash taxes paid divided by pre-tax income, indicating the actual proportion of earnings remitted in cash taxes during a period.	. Calculated by Cash Taxes Paid / Pre- tax Income	(Gallemore & Maydew, 2011)
		Tax Savings	Tax Savings means the decrease in Tax paid or payable to the relevant Tax Authority (or, without duplication, the increase in any	Calculated by identifying eligible tax deductions, credits, and exemptions and subtracting them from the total tax liability.	(Gallemore & Maydew, 2011)

			Refund) attributable to a Tax.		

Source: Author's Compilation, 2024

Diagnostic Checks

Diagnostic checks are techniques used in statistical analysis to assess the assumptions and validity of a statistical model. They help identify potential issues or violations of assumptions that can affect the reliability and accuracy of the model's results.

4.1 Data Presentation, Analysis and Discussion

Descriptive Results

The following table 4 presents the descriptive nature of the data for all the variables of the study, where the minimum and maximum values were presented, standard deviation and mean values were analysed.

Table 4 Descriptive Statistics

Variable	Mean	Std. Dev.	Min	Max
CI	0.0657	0.0401	0.01	0.13
CETR	0.6768	0.0844	0.33	0.78
TS	0.3598	0.1421	0.07	0.71

Source: STATA 13

Table 4 shows that the measure of corporate investment (CI) of the listed consumer goods companies in Nigeria has a mean value of 0.0657 with standard deviation of 0.0401, the minimum and maximum values stood at 0.01 and 0.13 respectively. This implies that on average the corporate investment in listed consumer goods companies in Nigeria is 0.06, and the deviation from both sides of the mean is 0.04. This suggests a moderate dispersion of the data from the mean because the standard deviation is close to the mean value.

In addition, the table depicts that the value from the descriptive statistics for cash effective tax rate (CETR) of listed consumer goods companies in Nigeria has a mean value of 0.6768 with standard deviation of 0.0844, whereby minimum and maximum values stood at 0.33 and 0.78 respectively. This implies that the average CETR representation on the sampled listed consumer goods companies in Nigeria is 68%, and the deviation from both sides of the mean is 8%. This suggests a close dispersion of the data from the mean because the standard deviation is close to the mean value.

That, is the mean CETR of 67.68% appears high relative to statutory corporate tax rates. However, this reflects the mechanical sensitivity of cash-based tax measures to variations in

pre-tax income. In years where pre-tax income is relatively low but firms still remit tax payments, the ratio becomes inflated. To mitigate distortion, firm-year observations with negative income were excluded and winsorization at the 1% and 99% levels was applied.

However, the table shows that the output of cash effective tax saving (TS) of the listed consumer goods companies in Nigeria has a mean value of 0.3598 with standard deviation of 0.1421, and minimum and maximum values of 0.07 and 0.71 respectively. This implies that the average TS of the listed consumer goods companies listed in Nigeria stood at 36%, and the deviation from both sides of the mean is 0.142. This suggests a moderate dispersion of the data from the mean because the standard deviation is close to the mean value. The table also indicated a minimum TS in listed consumer goods companies for a particular year is 0.07. On the other hand, it reveals a maximum TS of 0.71 (71%)

Correlation Matrix

This section presents the Pearson correlation, coefficients of the variables of the study. On the other hand, the relationship of the explanatory variables and themselves in table 5 below.

Table 5: Correlation Matrix

Variables	CI	CR	TS
CI	1.000		
CR	0.3697	1.000	
TS	0.3002	0.2647	1.000

Source: STATA 13

Table 5 shows that the correlation coefficient between Corporate Investment (CI) and Cash Effective Tax Rate (CR) is 0.3697, suggesting a moderate positive relationship. This implies that as corporate investments increase, the cash effective tax rate tends to rise moderately. The relationship indicates that higher investments may lead to greater taxable income, which in turn affects the firm's tax burden. The correlation between Corporate Investment (CI) and Tax Savings (TS) is 0.3002, reflecting a positive but weak association. This suggests that firms with higher corporate investments experience slight increases in tax savings, possibly due to allowable deductions, depreciation benefits, or tax incentives on capital expenditure (Hair et al., 2019).

Finally, Cash Effective Tax Rate (CR) and Tax Savings (TS) show a correlation of 0.2647, also indicating a weak positive relationship. This implies that as the effective tax rate increases, tax savings also tend to increase slightly, possibly due to efficient tax planning strategies.

Therefore, all correlations are positive but below 0.7, meaning the variables are related but not strongly enough to suggest multicollinearity. This indicates that each factor independently contributes to explaining variations in corporate tax behavior and investment performance.

Post-Estimation Diagnostic Tests

This section presents the results of the diagnostic tests conducted to determine the appropriate panel estimation technique for the study. The tests conducted include the Heteroskedasticity Test, Lagrangian Multiplier (LM) Test, and Hausman Specification Test. The results are presented in Table 6 below.

Table 6: Post-Estimation Test Results

Test	Chi²	Sig
Heteroskedasticity	0.00	0.9807
Hausman	14.36	0.0259
Lagrangian Multiplier	31.00	0.0000

Source: STATA 13 Output

Heteroskedasticity Test

The Breusch–Pagan test for heteroskedasticity produced a chi-square value of 0.00 with a probability value of 0.9807, which is statistically insignificant at the 5% level. This indicates the absence of heteroskedasticity in the model, suggesting that the assumption of constant variance of the error term is not violated.

Lagrangian Multiplier (LM) Test

The Breusch–Pagan Lagrangian Multiplier test yielded a chi-square value of 31.00 with a probability value of 0.0000, which is statistically significant at the 5% level. This result leads to the rejection of the null hypothesis that pooled OLS is appropriate. It implies that there are significant panel effects present in the data, and therefore, the pooled OLS model is not suitable for the analysis.

Hausman Specification Test

The Hausman test produced a chi-square value of 14.36 with a probability value of 0.0259, which is statistically significant at the 5% level. This indicates that the null hypothesis that the Random Effects estimator is consistent is rejected. Consequently, the Fixed Effects model is preferred over the Random Effects model for this study.

Model Selection Decision

Based on the results of the LM and Hausman tests, the Fixed Effects model is considered the most appropriate estimation technique for examining the effect of taxation on corporate investment of listed consumer goods firms in Nigeria. The Fixed Effects model adequately controls for unobserved firm-specific heterogeneity that may be correlated with the explanatory variables.

Model Summary

Table 7 below presents the output obtained from the regressions result of the Fixed Effects model:

Table 7: Summary of Regression Result

Variables	Coef.	T	P>t
CR	0.4101	6.77	0.000
TS	0.3000	4.23	0.000
_cons	0.1710	2.00	0.049
F-Statistics			12.54
F-Sig			0.000
R-Square			0.447
Adj R-Square			0.413

Source: STATA 13

Table 7 presents the panel regression results examining the effect of Cash Effective Tax Rate (CETR) and Tax Savings on Corporate Investment among listed consumer goods firms in Nigeria. Based on the Hausman specification test conducted earlier, the Fixed Effects model was adopted as the appropriate estimation technique.

The coefficient of CETR is 0.4101 ($t = 6.77$, $p < 0.01$), indicating a positive and statistically significant association between cash tax payments and corporate investment. This suggests that, holding other factors constant, an increase in CETR is associated with a corresponding increase in investment expenditure. While a higher effective tax rate is conventionally expected to reduce available internal funds for investment, the positive coefficient observed in this study likely reflects a profitability channel rather than a distortionary tax effect. Firms with higher taxable income remit greater cash taxes and simultaneously possess stronger internal cash flows, enabling higher levels of capital expenditure.

Importantly, CETR is measured using actual cash taxes paid relative to pre-tax income. As such, it captures realized tax remittance behavior rather than statutory tax burden. In this context, CETR may proxy for firm performance, earnings stability, and tax compliance

strength. Profitable firms with consistent earnings are more capable of sustaining both tax payments and investment spending. Therefore, the positive association does not necessarily imply that taxation stimulates investment; rather, it indicates that financially stronger firms both pay higher taxes and invest more.

Tax Savings (TS) also exhibits a positive and statistically significant coefficient ($\beta = 0.3000$, $t = 4.23$, $p < 0.01$). This finding suggests that reductions in tax liabilities generate additional liquidity that can be redirected toward productive investment. The result aligns with conventional corporate finance expectations that retained cash enhances firms' capacity to undertake capital expenditures.

The model is jointly significant, as indicated by the F-statistic of 12.54 ($p < 0.01$), confirming that CETR and TS collectively explain variations in corporate investment. The R-squared value of 0.447 implies that approximately 44.7% of the variation in corporate investment is explained by the included variables, while the adjusted R-squared of 0.413 accounts for model complexity. Overall, the model demonstrates satisfactory explanatory power within the context of firm-level investment behavior.

Test of Hypothesis

This section presents the hypotheses testing results based on the regression output using the Fixed Effects panel regression model.

Hypothesis One

H₀₁: Cash Effective Tax Rate has no significant effect on Corporate Investment.

The regression result reveals that the coefficient of Cash Effective Tax Rate (CETR) is positive ($\beta = 0.4101$) and statistically significant at the 1% level ($p = 0.000 < 0.05$). Therefore, the null hypothesis (H_{01}) is rejected. This implies that CETR has a statistically significant effect on corporate investment among listed consumer goods firms in Nigeria (Wooldridge, 2019). Although higher cash tax payments typically reduce disposable internal funds, the positive association observed suggests that CETR may reflect underlying firm profitability and scale effects. More profitable firms tend to pay higher taxes and simultaneously undertake greater investment expenditures. Thus, CETR appears to be positively associated with investment decisions within the sampled firms (Desai & Dharmapala, 2020).

Hypothesis Two

H₀₂: Tax Savings have no significant effect on Corporate Investment.

The result indicates that Tax Savings (TS) has a positive coefficient ($\beta = 0.3000$) and is statistically significant at the 1% level ($p = 0.000 < 0.05$). Consequently, the null hypothesis (H_{02}) is rejected. This suggests that tax savings significantly influence corporate investment

decisions (Feldstein, 2021). The positive relationship implies that reductions in tax liabilities increase available internal liquidity, which firms can channel into capital expenditures and expansion projects. This finding aligns with conventional tax and investment theory, which posits that lower tax burdens reduce the cost of capital and stimulate corporate reinvestment. Therefore, tax savings serve as an important financial mechanism supporting firm-level investment activities (Hanlon & Heitzman, 2019).

5.1 Conclusion and Recommendations

This study examined the effect of taxation on corporate investment among listed consumer goods firms in Nigeria using panel regression analysis. The findings reveal that both Cash Effective Tax Rate (CETR) and Tax Savings significantly influence corporate investment decisions. The positive and significant relationship between CETR and investment suggests that firms with higher taxable income reflecting stronger profitability tend to invest more. Rather than implying that higher taxes directly stimulate investment, the result likely captures profitability and scale effects, as more profitable firms both pay higher taxes and undertake greater capital expenditures.

Contrary to conventional expectations that higher tax payments necessarily suppress investment, the positive and significant relationship between CETR and investment suggests that, within the Nigerian consumer goods sector, higher cash tax payments may reflect stronger taxable profitability and stable compliance structures. Profitable firms with greater earnings capacity are better positioned to undertake reinvestment activities, consistent with internal financing theory and the pecking order framework.

Additionally, tax savings were found to positively and significantly affect investment, indicating that reductions in tax liabilities enhance internal liquidity and encourage reinvestment. This finding is consistent with established tax theory, which suggests that favorable tax policies reduce financing constraints and support corporate expansion. Therefore, the study concludes that taxation plays a significant role in shaping corporate investment behavior in Nigeria's consumer goods sector, either through profitability channels or through liquidity-enhancing tax savings mechanisms. Furthermore, tax savings were found to stimulate corporate investment, reinforcing the importance of fiscal incentives and efficient tax planning in enhancing capital expenditure decisions.

The study recommends the following;

- i. Corporate managers should ensure efficient tax planning strategies that enhance profitability without engaging in aggressive tax avoidance practices that may increase regulatory risk. Since higher CETR appears to reflect firm performance

and scale, firms should focus on strengthening operational efficiency and revenue generation capacity. Policymakers should also ensure tax stability and predictability, as a stable fiscal environment enables firms to plan long-term investments effectively. Transparent tax administration and consistent tax policies will help reduce uncertainty and encourage sustainable corporate investment within the consumer goods sector.

- ii. Government should design targeted tax incentives and relief measures that directly support capital formation in the manufacturing and consumer goods sector. Well-structured tax savings mechanisms, such as investment tax credits and capital allowances, can improve internal liquidity and stimulate reinvestment. Firms should strategically allocate tax savings toward productive investments rather than short-term consumption expenditures. Strengthening fiscal incentives that reward reinvestment will enhance industrial growth, employment generation, and overall economic development in Nigeria.

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OPPORTUNITY RECOGNITION AND ENTREPRENEURIAL INTENTION:
MODERATING ROLE OF SELF-EFFICACY

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Abstract

Entrepreneurship plays an important role in economic development; however, not everyone who recognizes a business opportunity intends to start a business. This study investigated the influence of opportunity recognition on entrepreneurial intention, with entrepreneurial self-efficacy serving as a moderating factor. The study was based on the Theory of Planned Behaviour, which explained that individuals were more likely to develop entrepreneurial intentions when they believed they possessed the ability to succeed. Opportunity recognition alone was not sufficient, as individuals also needed confidence in their entrepreneurial abilities. A cross-sectional survey research design was adopted, and data were collected from a target population of 3,600 respondents using a structured questionnaire. The data were analysed using Structural Equation Modeling (SEM) to examine both direct and moderating relationships among the study variables. The findings revealed that entrepreneurial self-efficacy significantly strengthened the relationship between opportunity recognition and entrepreneurial intention. Individuals who recognized business opportunities and believed in their entrepreneurial abilities were more likely to develop the intention to start a business. The study contributed to entrepreneurship research by demonstrating the combined influence of opportunity recognition and entrepreneurial self-efficacy in shaping entrepreneurial intention. The findings provided useful insights for educators, policymakers, and entrepreneurship support institutions in designing programs that enhance opportunity identification skills and strengthen entrepreneurial confidence.

Keywords: Entrepreneurial Intention, Opportunity Recognition, Entrepreneurial Self-Efficacy, Structural Equation Modeling, Entrepreneurship.

Introduction

Entrepreneurship plays a very important role in economic growth, innovation and job creation all over the world. Many countries promote entrepreneurship as a practical way to reduce unemployment, increase income and improve people's standard of living. By starting new

businesses, entrepreneurs create jobs not only for themselves but also for others, while introducing new ideas, products and services into the economy. Because of these benefits, understanding why people decide to become entrepreneurs has attracted strong academic and policy interest. Liñán and Fayolle (2022) explain that entrepreneurial intention is one of the strongest predictors of actual business start-up behaviour. In other words, individuals who have a strong intention to start a business are more likely to do so in the future.

One key factor that influences entrepreneurial intention is opportunity recognition. Opportunity recognition refers to an individual's ability to identify good business ideas and see them as potential business ideas. People who can recognize profitable opportunities are often viewed as having higher chances of becoming entrepreneurs. However, research shows that recognizing an opportunity does not always lead to the intention to start a business. Hassan et al. (2023) note that many individuals identify good business ideas but still choose not to pursue them. This suggests that opportunity recognition alone is not enough and other psychological and personal factors also matter.

In Africa, entrepreneurship is often considered a major solution to unemployment and poverty. Although many Africans are able to identify business opportunities due to gaps in goods and services, only a small number feel confident enough to act on these opportunities. Studies indicate that low self-confidence, fear of failure and limited entrepreneurial skills discourage individuals from developing entrepreneurial intention, even when opportunities exist (Amoako et al., 2021). This highlights the importance of entrepreneurial self-efficacy, which refers to an individual's belief in their ability to successfully perform entrepreneurial tasks.

Nigeria faces high youth unemployment, making entrepreneurship a key economic strategy. Many Nigerians can recognize business opportunities due to population growth, market demand and the expansion of digital platforms. However, entrepreneurial intention remains low for many people due to lack of confidence, limited skills and fear of business failure (Ibidunni et al., 2021; Ogunlana et al., 2022). This shows that recognizing opportunities without believing in one's entrepreneurial ability is insufficient.

In the context of this study, individuals are exposed to entrepreneurship education and information that improve opportunity recognition. Despite this exposure, not everyone develops entrepreneurial intention. Therefore, this study examines the role of entrepreneurial self-efficacy in influencing the relationship between opportunity recognition and entrepreneurial intention.

Statement of the Problem

Several studies (e.g., Shane & Venkataraman, 2000; Hassan et al., 2023) have examined opportunity recognition and entrepreneurial self-efficacy as separate factors influencing entrepreneurial intention. These studies show that recognizing business opportunities and believing in one's abilities are both important for entrepreneurship. However, they do not clearly explain how these two factors work together to influence an individual's decision to start a business. As noted by Liñán and Fayolle (2022), there is limited empirical evidence on the combined effect of opportunity recognition and entrepreneurial self-efficacy, especially in developing countries. This is an important gap because many individuals are able to identify good business opportunities but still lack the confidence required to take action. Therefore, studying these factors independently may not fully explain entrepreneurial decision-making.

In a similar way, many studies have focused mainly on entrepreneurial self-efficacy as a key psychological factor influencing entrepreneurial intention. Research consistently shows that individuals who have strong confidence in their entrepreneurial skills and abilities are more likely to intend to start a business (Zhao et al., 2005; Chen et al., 2020; Newman et al., 2021). These studies highlight the role of self-belief, perceived competence and ability to manage risk in shaping entrepreneurial behaviour. While these findings are important, they often do not consider how self-efficacy works alongside opportunity recognition.

In many developing countries, particularly in Africa such as Nigeria, Ghana, and Kenya, governments and institutions invest heavily in entrepreneurship programs, trainings and awareness campaigns to promote self-employment and reduce unemployment (Amoako et al., 2021; Ibidunni et al., 2021; Ogunlana et al., 2022). These programs mainly focus on helping individuals identify business opportunities, understand market needs and develop innovative business ideas through entrepreneurship education, workshops and skill acquisition initiatives. However, despite the growing number of entrepreneurship programs and trainings, many individuals who recognize viable business opportunities still do not develop the intention to start a business. This gap between opportunity recognition and entrepreneurial intention reduces the effectiveness of entrepreneurship policies and educational efforts aimed at job creation and economic development. When individuals see opportunities but lack confidence in their abilities to pursue them, the expected outcomes of these programs are not fully achieved. As argued by Newman et al. (2021), opportunity-based entrepreneurship programs may fail if they do not also focus on building self-confidence and strengthening belief in entrepreneurial abilities. This underscores the need to integrate entrepreneurial self-efficacy development into entrepreneurship education and training programs.

Research Objectives

1. To examine the effect of opportunity recognition on entrepreneurial intention.
2. To assess the influence of entrepreneurial self-efficacy on entrepreneurial intention.
3. To determine whether entrepreneurial self-efficacy moderates the relationship between opportunity recognition and entrepreneurial intention.

Literature Review

This study focuses on three key variables: opportunity recognition as the independent variable, entrepreneurial intention as the dependent variable and entrepreneurial self-efficacy as the moderating variable. These concepts are closely linked in explaining why some individuals decide to start a business while others do not.

Opportunity recognition refers to an individual's ability to identify and evaluate promising business ideas that arise from unmet needs, technological changes or gaps in the market (Hassan et al., 2023). Many scholars agree that opportunity recognition is one of the earliest and most important stages of the entrepreneurial process. Without identifying a viable opportunity, individuals are unlikely to consider entrepreneurship as a career option. Studies show that people who are more alert to opportunities are better able to connect information, experiences, and market signals to generate business ideas, which increases their likelihood of planning to start a business (Hassan et al., 2023; Nwibe & Ogbuanya, 2024). For example, research conducted among students indicates that opportunity recognition significantly increases entrepreneurial intention, suggesting that it is a strong predictor of the desire to become an entrepreneur (Hassan et al., 2023). Overall, opportunity recognition serves as a key starting point that shapes whether individuals begin to think seriously about entrepreneurship. Entrepreneurial intention refers to an individual's willingness, desire or conscious plan to start and manage a business in the future (Newman et al., 2021; Liñán & Fayolle, 2022; Hassan et al., 2023). Most researchers agree that intention is the best predictor of actual entrepreneurial behaviour, since people usually form intentions before taking action. Empirical evidence shows that individuals who can recognize business opportunities are more likely to develop strong entrepreneurial intentions (Hassan et al., 2023). In addition, individuals who feel confident about their chances of success because they recognize opportunities and believe in their abilities tend to show higher commitment toward starting a business (Newman et al., 2021; Liñán & Fayolle, 2022). Studies among university students further confirm that entrepreneurial intention increases when individuals receive education, institutional support, and develop confidence in their entrepreneurial skills, highlighting that intention reflects important cognitive and psychological factors.

Entrepreneurial self-efficacy refers to a person's belief in their ability to successfully perform entrepreneurial tasks such as identifying opportunities, managing risk and overcoming business challenges (Newman *et al.*, 2021; Liñán & Fayolle, 2022; Nwibe & Ogbuanya, 2024). It goes beyond having skills or knowledge and emphasizes confidence in one's capability to achieve entrepreneurial goals. Recent studies show that entrepreneurial self-efficacy has a positive and significant effect on entrepreneurial intention, as individuals who believe in their abilities are more motivated, resilient, and willing to pursue business ideas despite challenges (Newman *et al.*, 2021; Liñán & Fayolle, 2022; Nwibe & Ogbuanya, 2024).

In this study, entrepreneurial self-efficacy is treated as a moderating variable, meaning it influences the strength of the relationship between opportunity recognition and entrepreneurial intention. When self-efficacy is high, individuals who recognize opportunities are more likely to translate those opportunities into strong intentions to start a business. In contrast, when self-efficacy is low, individuals may recognize opportunities but still hesitate to form entrepreneurial intentions due to fear of failure and lack of confidence. This moderating role is supported by recent empirical evidence showing that high entrepreneurial self-efficacy strengthens the link between opportunity recognition and entrepreneurial intention (Newman *et al.*, 2021; Liñán & Fayolle, 2022; Nwibe & Ogbuanya, 2024).

Empirical Studies

Empirical research widely supports entrepreneurial intention as a strong predictor of actual entrepreneurial behaviour. Studies across different countries and populations show that individuals with high entrepreneurial intention are more likely to engage in business start-up activities. Research among students and young adults indicates that entrepreneurial intention is influenced by factors such as entrepreneurship education, perceived support, personal motivation, and psychological characteristics.

Adeoye and Olubiyi (2024) found that personal factors, including personality traits, family entrepreneurial history, and technical skills, play a significant role in shaping entrepreneurial intention among private university students in South West Nigeria. Their study suggests that students who possess proactive personality traits, come from entrepreneurial families, or have relevant technical skills are more likely to plan and commit to starting a business. This highlights the importance of individual background and personal characteristics as key drivers of entrepreneurial decision-making.

Similarly, Hassan *et al.* (2024) reported that emotional intelligence positively influences entrepreneurial intention among Nigerian undergraduates. The study further revealed that certain dimensions of self-efficacy, particularly perceived competence and persistence,

partially mediate this relationship. This finding emphasizes that students who can understand and manage their emotions, stay motivated, and feel confident in their abilities are more likely to develop strong intentions to become entrepreneurs. Emotional intelligence, therefore, indirectly supports entrepreneurial intention by enhancing students' confidence in handling entrepreneurial challenges.

Gusau and Gwarzo (2025) focused on social entrepreneurial intention among Nigerian tertiary students and found that attitudes and subjective norms significantly influence entrepreneurial intention. Students who hold positive attitudes toward entrepreneurship and perceive support from family, peers, and society are more likely to express intentions to engage in social business ventures. This suggests that both personal mindset and social influences are important in shaping the intention to pursue entrepreneurship, particularly in contexts involving social or community-oriented enterprises.

In contrast, Bilić and Dulčić (2020) studied Croatian students and reported that attitudes and risk-taking propensity positively affected entrepreneurial intention, whereas self-efficacy and social norms did not have a significant effect. This finding illustrates that the impact of psychological and social factors on entrepreneurial intention can vary across cultural and national contexts. In some settings, simply having a positive attitude and willingness to take risks may be sufficient to encourage entrepreneurial intention, while confidence and perceived social support may play a less central role.

Nguyen (2025) investigated the determinants of entrepreneurial intention among final-year students in Vietnam and found that attitude, subjective norms, perceived behavioural control, and access to capital all significantly and positively predicted entrepreneurial intention. This study highlights that, besides personal mindset and social influence, practical factors such as financial resources and the perceived ability to control business outcomes are critical in determining whether students intend to start their own ventures.

Cruz Salinas et al. (2025) examined sustainable entrepreneurial intention among engineering students in Peru and found that both attitude toward entrepreneurship and the perceived advantages of starting a business were significant positive predictors of entrepreneurial intention. Their study also revealed that perceived behavioural control, or students' belief in their ability to successfully manage entrepreneurial tasks, varied between public and private institutions, indicating that institutional context can influence the strength of certain determinants. These findings highlight that both individual mindset and the perceived benefits of entrepreneurship are key in shaping intentions, while institutional differences can moderate how students perceive their capacity to act.

Zhao et al. (2025) explored entrepreneurial intention in the context of the digital economy and reported that entrepreneurial alertness and motivation play critical roles in shaping university students' intentions to start businesses. Students who are attentive to market opportunities and motivated to pursue innovation are more likely to form entrepreneurial intentions. This study underscores how emerging technologies and digital market dynamics influence the entrepreneurial decision-making process, demonstrating that contemporary economic contexts can alter the factors driving intention.

Malathi (2025) found a strong positive correlation between entrepreneurial education and entrepreneurial intention among Indian students. The study highlighted that structured education programs, including workshops, mentorship, and experiential learning, help students develop both the skills and the motivation to pursue entrepreneurial ventures. This emphasizes that formal entrepreneurship education can effectively strengthen students' intentions by equipping them with knowledge, confidence, and practical tools.

Ramos-Rodriguez et al. (2023) investigated the role of timing intentions on entrepreneurial intention among final-year students. The study revealed differences between students intending to launch businesses immediately after graduation and those planning to delay entry into entrepreneurship. This suggests that nuanced factors, such as perceived readiness, available resources, and risk considerations, influence the formation of entrepreneurial intentions, indicating that timing and personal circumstances can moderate intention development.

Finally, a study reported that self-efficacy significantly predicts entrepreneurial intention among vocational students. Students who have higher confidence in their ability to perform entrepreneurial tasks are more likely to develop intentions to start a business (Nasri & Morched, 2023; Passavanti, et al, P. (2023). This finding reinforces the positive role of personal beliefs, confidence, and perceived competence in shaping entrepreneurial intentions, highlighting the psychological dimension of entrepreneurial decision-making.

Opportunity recognition is the ability to spot good business ideas, market gaps or unmet customer needs that can be turned into a business. Research shows that recognizing opportunities is an important first step in starting a business and is a strong predictor of whether someone intends to become an entrepreneur and take action.

Hassan et al. (2023) conducted a study among Nigerian university students and found that students who could recognize business opportunities were significantly more likely to form entrepreneurial intentions. Their findings suggest that *opportunity recognition enhances cognitive awareness*, enabling individuals to connect prior knowledge and experiences to generate innovative business ideas.

Nwibe & Ogbuanya (2024) studied undergraduate and postgraduate students in Nigeria and reported that opportunity recognition positively predicts entrepreneurial intention, but the effect is stronger when students possess high entrepreneurial self-efficacy. This indicates that *recognizing opportunities alone may not lead to action without confidence in one's entrepreneurial abilities*.

Liñán et al. (2021) in a cross-country study, the authors found that entrepreneurial opportunity recognition is influenced by exposure to entrepreneurship education and mentorship programs. Students who actively participate in training programs are more alert to business gaps and market needs, which increases their intention to start a business.

Ratten & Jones (2022) research in the context of digital entrepreneurship showed that opportunity recognition is facilitated by *technology awareness and networking*. Students who actively monitor market trends and digital platforms are better able to identify innovative opportunities, which enhances entrepreneurial intention.

Amoako et al. (2021) found that among Ghanaian university students, *market gaps and unmet societal needs* are the main triggers for opportunity recognition. However, the study also highlighted that fear of failure or low confidence can prevent students from converting recognized opportunities into entrepreneurial intentions.

Ibidunni et al. (2021) studied Nigerian youth and reported that opportunity recognition is not evenly distributed; it is influenced by prior entrepreneurial exposure, access to information, and social networks. The study emphasizes that individuals with better access to business information and mentorship are more likely to recognize viable opportunities.

Liñán & Fayolle (2022) highlighted that opportunity recognition alone does not guarantee entrepreneurial action. Their study across multiple developing countries indicated that *psychological and contextual factors*, such as self-efficacy and resource availability, moderate the relationship between recognizing opportunities and forming entrepreneurial intentions.

Chen et al. (2020) found that students' ability to recognize opportunities is positively associated with entrepreneurial creativity and the intention to engage in new ventures. The study emphasizes the *cognitive component of entrepreneurship*, suggesting that training programs that enhance analytical and creative thinking can improve opportunity recognition.

Zhang et al. (2021) in a study of Chinese university students, the authors reported that *opportunity recognition mediates the relationship between entrepreneurial education and entrepreneurial intention*, showing that recognizing viable business ideas is a key mechanism through which education translates into entrepreneurial behaviour.

Newman et al. (2021) demonstrated that even when students recognize profitable opportunities, they may fail to pursue them due to *low entrepreneurial self-efficacy*. This study highlights the importance of combining opportunity recognition with confidence-building strategies to convert potential opportunities into actual entrepreneurial intention.

Entrepreneurial self-efficacy has been widely examined as a key psychological determinant of entrepreneurial intention. Empirical findings show that individuals with high self-efficacy are more confident in their ability to perform entrepreneurial tasks such as opportunity evaluation, planning, and risk management. Studies indicate that entrepreneurial self-efficacy has a significant positive effect on entrepreneurial intention, as individuals who believe in their abilities are more motivated and persistent in pursuing business opportunities (Zhao et al., 2005; Chen et al., 2020; Newman et al., 2021). These findings highlight the importance of self-belief in shaping entrepreneurial behaviour.

Hafid et al. (2024) found that entrepreneurial self-efficacy significantly and positively mediates the relationship between entrepreneurship education and entrepreneurial intention among economics students. Their study highlights that when students receive structured entrepreneurship education, it is their confidence in performing entrepreneurial tasks that translates knowledge into actual intention. This suggests that education alone may not be sufficient; it is the self-belief developed through education that drives students toward entrepreneurial action.

Similarly, Deliana and Simanjorang (2025) reported that entrepreneurial education positively enhances self-efficacy, which in turn contributes to increased entrepreneurial intention among university students. The study emphasizes that the confidence gained from education acts as a psychological bridge, enabling students to transform learned skills into a willingness to start a business.

Ferdianto et al. (2025) also found that students' self-efficacy has a significant positive impact on both entrepreneurial attitudes and entrepreneurial intention, confirming that higher confidence strengthens students' readiness to engage in entrepreneurial activities. The findings suggest that self-efficacy not only affects the desire to start a business but also shapes the positive attitudes necessary for pursuing entrepreneurial opportunities.

Ticoalu et al. (2025) demonstrated that entrepreneurial self-efficacy positively influences entrepreneurial intention, and that this effect is further strengthened by entrepreneurial passion. Their study indicates that confidence and passion interact to create stronger intentions, showing that motivated and self-assured students are more likely to act on recognized business opportunities.

Zanabazar et al. (2025) found that entrepreneurial self-efficacy fully mediates the positive effect of an entrepreneurial mindset on entrepreneurial intention among Mongolian business students. This finding reinforces the central role of self-belief in shaping intention, suggesting that mindset alone may not be enough to motivate entrepreneurial behaviour without the confidence to execute it.

Rahmawati et al. (2025) conducted a study among Indonesian university students and reported that self-efficacy has a positive and significant effect on entrepreneurial intention, accounting for a substantial portion of the explained variance. This emphasizes the critical role of self-belief as a psychological determinant in forming intentions.

Nasri and Morched (2023), using the Theory of Planned Behaviour, found that entrepreneurial self-efficacy positively and significantly predicts entrepreneurial intention among Tunisian business students. Their study supports the idea that confidence in one's entrepreneurial abilities is a core psychological factor influencing the decision to pursue entrepreneurship.

Styadinata and Soelaiman (2024) highlighted that self-efficacy mediates the relationship between entrepreneurial knowledge and entrepreneurial intention, showing that students with higher self-efficacy are more likely to transform acquired knowledge into concrete intentions to start a business.

A 2025 study published in *Frontiers in Psychology* found that self-efficacy positively relates to entrepreneurial intention among graduates, and it also mediates the effect of locus of control on entrepreneurial intention. This indicates that self-belief interacts with other psychological traits to shape intention, emphasizing the importance of internal confidence in entrepreneurial decision-making.

Finally, the study reported that self-efficacy significantly predicts entrepreneurial intention among vocational students, confirming its crucial role in motivating students and supporting entrepreneurial planning (Nasri & Morched, 2023). Collectively, these studies demonstrate that entrepreneurial self-efficacy is a consistent and strong predictor of entrepreneurial intention, both directly and through its mediating role, highlighting its central place in entrepreneurship research.

Theoretical framework

The Theory of Planned Behaviour is adopted for this study because it explains how an individual's intention influences behaviour. The theory suggests that intention is shaped by attitude toward the behaviour, social influence, and perceived ability to perform the behaviour (Liñán & Fayolle, 2022). In the context of entrepreneurship, opportunity recognition helps individuals develop a positive attitude toward starting a business by enabling them to identify

viable business ideas (Hassan et al., 2023). Entrepreneurial self-efficacy represents perceived behavioural control, which reflects an individual's confidence in their ability to start and manage a business (Newman et al., 2021). When entrepreneurial self-efficacy is high, the effect of opportunity recognition on entrepreneurial intention becomes stronger (Nwibe & Ogbuanya, 2024). Therefore, the Theory of Planned Behaviour provides a suitable framework for explaining entrepreneurial intention in this study.

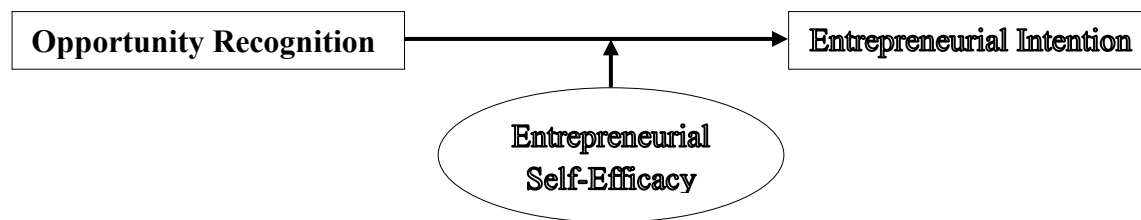


Figure 1: **Research model**

The fig.1 illustrates the research model, showing that opportunity recognition influences entrepreneurial intention, while entrepreneurial self-efficacy moderates this relationship.

Methodology

The study adopted a quantitative research approach using a cross-sectional survey design. A cross-sectional design involves collecting data from respondents at a single point in time and is suitable for examining relationships among variables without manipulating them (Creswell & Creswell, 2023). This design is appropriate for this study because it allows the researcher to examine the relationships among opportunity recognition, entrepreneurial intention, and entrepreneurial self-efficacy across a relatively large sample. The study is non-experimental in nature, as the variables are observed and analyzed as they naturally occur. In addition, the study incorporates a moderation analysis, with entrepreneurial self-efficacy serving as a moderator in the relationship between opportunity recognition and entrepreneurial intention.

The population of the study consisted of students enrolled in business, management, and entrepreneurship-related programmes at Yobe State University. University records indicated that approximately 3,600 students met the inclusion criterion of having completed at least one entrepreneurship-related course. This figure represents an estimated population size based on departmental enrolment statistics.

To determine an appropriate sample size, the study adopted the Krejcie and Morgan (1970) sample size determination table, which provides a statistical method for determining representative sample sizes for finite populations. For a population of approximately 3,600

individuals, the table recommends a minimum sample size of 346 respondents at a 95% confidence level and a 5% margin of error.

In addition to the Krejcie and Morgan guideline, the selected sample size also satisfies general statistical requirements for Structural Equation Modeling (SEM), which typically requires sample sizes greater than 200 to produce reliable parameter estimates and adequate statistical power. Therefore, a sample size of 346 was considered sufficient to ensure reliable statistical analysis and improve the generalizability of the findings.

Data were collected using a structured questionnaire as the main instrument. The questionnaire consists of four sections: Demographic information, which captures data such as age, gender, academic level, and programme of study. Opportunity recognition scale, adapted from validated instruments used in recent studies (Hassan et al., 2023; Ratten & Jones, 2022). Entrepreneurial intention scale, measuring respondents' willingness, desire, and plans to start a business (Liñán & Chen, 2020). Entrepreneurial self-efficacy scale, assessing respondents' confidence in performing entrepreneurial tasks (Zhang et al., 2021).

All items are measured using a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). To ensure validity, the questionnaire items are adapted from previously validated studies and reviewed by two experts in entrepreneurship research. Content validity is established by ensuring that the items align with the research objectives.

To assess reliability, a pilot study involving 20 students outside the main sample was conducted. Cronbach's alpha is used to measure internal consistency, with a coefficient of 0.70 or above considered acceptable (Creswell & Creswell, 2023; Nwibe & Ogbuanya, 2024).

Data were collected through both online and physical questionnaires, depending on respondents' availability. Ethical considerations are strictly observed. Participants are informed about the purpose of the study, participation is voluntary, informed consent is obtained, and confidentiality of responses is assured.

The collected data are analyzed using Statistical Package for Social Sciences (SPSS) version 28 and Structural Equation Modeling (SEM) using AMOS 28. Data analysis includes descriptive statistics (frequencies, percentages, means, and standard deviations), reliability analysis using Cronbach's alpha, Pearson correlation analysis to examine relationships among variables, and regression analysis to test the effect of opportunity recognition on entrepreneurial intention. Moderation analysis is conducted using SEM to examine the moderating role of entrepreneurial self-efficacy in the relationship between opportunity recognition and entrepreneurial intention (Zhang et al., 2021; Newman et al., 2021; Liñán & Fayolle, 2022). All statistical tests are conducted at a 5% significance level ($p < 0.05$).

Results of the Study

1. Descriptive Statistics

Descriptive statistics were computed to summarize the central tendency and dispersion of the study variables. The results in Table 1 present the mean and standard deviation for opportunity recognition, entrepreneurial self-efficacy and entrepreneurial intention.

Table 1: **Descriptive Statistics of Study Variables (N=346)**

Variable	Mean	Standard Deviation	Minimum	Maximum
Opportunity Recognition	3.87	0.71	1.80	5.00
Entrepreneurial Self-Efficacy	3.92	0.65	2.10	5.00
Entrepreneurial Intention (EI)	3.95	0.69	2.00	5.00

The results indicate that respondents generally reported high levels of opportunity recognition, entrepreneurial self-efficacy, and entrepreneurial intention, as the mean scores for all variables were above the midpoint of the scale (3.0).

2. Correlation Analysis

Pearson correlation analysis was conducted to examine the relationships among the variables.

Table 2: **Correlation Matrix**

Variables	OR	ESE	EI
Opportunity Recognition	1		
Entrepreneurial Self-Efficacy	0.46**	1	
Entrepreneurial Intention	0.53**	0.58**	1

Note: $p < 0.01$

The results show that:

- Opportunity recognition is positively correlated with entrepreneurial intention ($r = 0.53$, $p < 0.01$).
- Entrepreneurial self-efficacy is positively correlated with entrepreneurial intention ($r = 0.58$, $p < 0.01$).
- Opportunity recognition also shows a moderate positive relationship with self-efficacy ($r = 0.46$, $p < 0.01$).

These results indicate that higher opportunity recognition and stronger self-efficacy beliefs are associated with higher entrepreneurial intention.

3. Structural Equation Modeling

Structural Equation Modeling (SEM) using AMOS 28 was employed to test the direct and moderating relationships proposed in the research model.

3.1 Model Fit Indices

The goodness-of-fit indices were examined to assess how well the model fits the data.

Table 3: **Model Fit Indices**

Fit Index	Recommended Value	Model Value
Chi-square/df	< 3.0	2.14
Comparative Fit Index	≥ 0.90	0.94
Tucker Lewis Index	≥ 0.90	0.92
Root Mean Square Error of Approximation	≤ 0.08	0.057
Standardized Root Mean Square Residual	≤ 0.08	0.049

The results indicate that the model demonstrates acceptable goodness of fit, as all indices fall within recommended thresholds.

3.2 Structural Path Results

The direct relationships among the variables were examined using SEM.

Table 4: **Structural Path Estimates**

Path	Standardized β	Standard Error	t-value	p-value	Decision
OR $\rightarrow$ EI	0.41	0.07	5.89	<0.001	Supported
ESE $\rightarrow$ EI	0.47	0.06	7.12	<0.001	Supported

The results indicate that:

- Opportunity recognition significantly influences entrepreneurial intention ($\beta = 0.41$, $p < 0.001$).
- Entrepreneurial self-efficacy significantly influences entrepreneurial intention ($\beta = 0.47$, $p < 0.001$).

This implies that individuals who recognize business opportunities and believe in their entrepreneurial abilities are more likely to develop entrepreneurial intentions.

3.3 Moderation Analysis

The moderating effect of entrepreneurial self-efficacy on the relationship between opportunity recognition and entrepreneurial intention was tested using an interaction term in SEM.

Table 5: **Moderation Effect**

Interaction Path	B	SE	t-value	p-value
OR $\times$ ESE $\rightarrow$ EI	0.18	0.05	3.64	<0.01

The interaction term between opportunity recognition and entrepreneurial self-efficacy is positive and statistically significant ($\beta = 0.18$, $p < 0.01$).

This indicates that entrepreneurial self-efficacy strengthens the relationship between opportunity recognition and entrepreneurial intention. In other words, individuals who recognize business opportunities are more likely to develop entrepreneurial intentions when they also possess high entrepreneurial self-efficacy.

4. Summary of Hypothesis Testing

Table 6: Hypotheses Testing Results

Hypothesis	Statement	Result
H1	Opportunity recognition positively affects entrepreneurial intention	Supported
H2	Entrepreneurial self-efficacy positively affects entrepreneurial intention	Supported
H3	Entrepreneurial self-efficacy moderates the relationship between opportunity recognition and entrepreneurial intention	Supported

Interpretation of Results

The results demonstrate that:

- Opportunity recognition is a significant predictor of entrepreneurial intention.
- Entrepreneurial self-efficacy also has a strong positive influence on entrepreneurial intention.
- The moderation analysis confirms that self-efficacy strengthens the effect of opportunity recognition on entrepreneurial intention.

This implies that recognizing business opportunities alone is insufficient unless individuals also possess confidence in their entrepreneurial capabilities.

Discussion

The findings of this study provide empirical support for the relationship between opportunity recognition, entrepreneurial self-efficacy, and entrepreneurial intention. The results revealed that opportunity recognition has a positive and significant effect on entrepreneurial intention. This finding suggests that individuals who are able to identify viable business opportunities are more likely to develop the intention to start a business. This result is consistent with previous studies which emphasize opportunity recognition as a key cognitive process in entrepreneurship (Hassan et al., 2023; Zhang et al., 2021). When individuals are able to detect market gaps, unmet needs, or innovative ideas, they begin to perceive entrepreneurship as a feasible career option.

The study also found that entrepreneurial self-efficacy has a significant positive effect on entrepreneurial intention. This indicates that individuals who believe in their entrepreneurial abilities are more confident and motivated to pursue business creation. This finding aligns with earlier research that highlights self-efficacy as one of the strongest psychological predictors of entrepreneurial intention (Zhao et al., 2005; Nasri & Morched, 2023; Newman et al., 2021). Individuals who possess high levels of entrepreneurial self-efficacy tend to perceive entrepreneurial challenges as manageable and are therefore more willing to take risks associated with starting a business.

Furthermore, the moderation analysis showed that entrepreneurial self-efficacy significantly strengthens the relationship between opportunity recognition and entrepreneurial intention. In other words, individuals who recognize business opportunities are more likely to develop entrepreneurial intention when they also have high confidence in their entrepreneurial capabilities. This finding supports the assumptions of the Theory of Planned Behaviour, which suggests that perceived behavioural control (represented by self-efficacy) plays a crucial role in translating intentions into behavioural outcomes (Liñán & Fayolle, 2022).

From a theoretical perspective, the study contributes to entrepreneurship literature by demonstrating that opportunity recognition alone is insufficient to generate entrepreneurial intention. Instead, psychological factors such as entrepreneurial self-efficacy play a critical role in transforming opportunity awareness into entrepreneurial motivation. This highlights the importance of integrating cognitive and psychological perspectives in understanding entrepreneurial behaviour.

From a practical perspective, the findings suggest that entrepreneurship education programs should not focus solely on teaching students how to identify business opportunities. Educational institutions should also design training programs that build students' confidence, practical entrepreneurial skills, and ability to manage risk. Activities such as business simulations, mentorship programs, and experiential learning can help strengthen entrepreneurial self-efficacy among students.

Despite these contributions, the study has some limitations. First, the study used a cross-sectional research design, which limits the ability to establish causal relationships among the variables. Future studies could adopt longitudinal designs to examine how opportunity recognition and self-efficacy influence entrepreneurial intention over time. Second, the study focused on students from a single university, which may limit the generalizability of the findings to other institutions or regions. Future research could include multiple universities or different demographic groups to improve external validity.

Finally, future research could examine additional moderating or mediating variables such as entrepreneurial education, access to capital, social support, or risk perception. Including these factors may provide a more comprehensive understanding of the processes that influence entrepreneurial intention.

Conclusion

This study concludes that opportunity recognition is an important factor in shaping entrepreneurial intention, but it is not enough on its own to motivate individuals to start a business. Entrepreneurial self-efficacy plays a crucial role by strengthening the link between recognizing business opportunities and forming entrepreneurial intention. Individuals who recognize opportunities and also believe in their entrepreneurial abilities are more likely to intend to start a business.

The findings confirm that confidence and self-belief are key drivers of entrepreneurial intention, especially among students in a developing economy like Nigeria. The study also validates the Theory of Planned Behaviour as a suitable framework for explaining entrepreneurial intention. Therefore, entrepreneurship education and policy interventions should focus not only on helping individuals identify opportunities but also on building their entrepreneurial confidence and skills.

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PARTICIPATORY MANAGEMENT AND EMPLOYEE PERFORMANCE IN
SELECTED MANUFACTURING COMPANIES IN KADUNA METROPOLIS

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Abstract

Over time, leading organizations have come to realize that success in today's competitive business environment depends on creating a workplace that empowers employees not only to perform their assigned tasks but also to think critically and take initiative in solving problems. The lack of delegated responsibilities in many manufacturing companies has been identified as a major obstacle to improved performance. This study investigates the impact of participatory management on employee performance in selected manufacturing firms. A cross-sectional research design was adopted, targeting a population of 1,468 staff members across the chosen companies. Using the Taro Yamane formula, a sample size of 314 respondents was determined, however 409 questionnaires were administered but only 398 were returned and 383 were found usable for analysis. Primary data were collected through structured questionnaires. The data were analyzed using the Statistical Package for Social Sciences (SPSS) version 20.0, while SmartPLS 3.3 was employed for further statistical analysis. Findings revealed a positive and significant relationship between participatory management practices—such as communication and teamwork, while a positive and statistically insignificant relationship was found between decision-making, goal setting, problem solving, and motivation—and employee performance in the selected manufacturing firms. Based on these results, the study recommends that management should consistently promote and sustain participatory decision-making at all organizational levels, particularly among top executives. Additionally, management should redesign work structures to foster collaboration and actively involve employees in goal setting, ensuring that their contributions are integrated into the organization's strategic plans.

Keywords: Decision Making, Goal Setting, Problem Solving, Teamwork and Employee performance

1.0. Introduction

The growing intensity of competition in today's business world cannot be overstated. Organizations are constantly seeking new ways to outperform their rivals, and one effective strategy is participatory management—also known as employee involvement or participative leadership. A key issue in management has always been employee performance, as it directly impacts productivity, efficiency, and service quality. Unlike traditional management systems where decisions are centralized, participatory management encourages employees to contribute ideas and opinions, thereby fostering motivation and a sense of belonging. When employees feel valued and included in decision-making, they develop a sense of ownership that reduces inefficiency, absenteeism, and turnover, while boosting motivation, job satisfaction, and organizational commitment (Reza-Dust & Afraz, 2014).

Encouraging participatory goal-setting allows managers to decentralize authority, which improves decision quality and strengthens employees' commitment to outcomes they helped shape. Effective communication also plays a vital role in this process. When employees are well-informed and involved in communication channels, they develop positive attitudes toward their work and perform better (Verghese, 2017). Similarly, motivation acts as a driving force that influences employees' actions and can significantly enhance their performance (Sorenson, 2015).

Participatory teamwork further strengthens employee performance by promoting collaboration and collective problem-solving. When employees are actively involved in forming and developing teams, their sense of contribution increases, leading to better service delivery, competitiveness, and organizational responsiveness. Teamwork not only enhances productivity but also boosts market value and customer satisfaction. Ong (2019) emphasized that effective communication fosters productivity and unity, while Benoliel and Somech (2010) noted that participatory management nurtures cooperation and the sharing of knowledge within teams. Top-performing organizations recognize that success depends on cultivating an environment where employees are encouraged to think critically, take initiative, and solve problems rather than merely complete assigned tasks (Stark, 2019). Empowering employees through delegated responsibilities helps them address challenges proactively and enhances overall performance. Employee performance continues to draw the attention of both academics and business leaders, largely because involving employees in decision-making can lead to higher job satisfaction and improved outcomes. The concept of participatory management has its roots in early

management theories that emphasized employee involvement in strategic organizational planning.

Shagholi and Hussin (2009) came up with fifteen (15) components of Participatory Management as Trust, Decision making, Teamwork, Share power, Motivation, Communication, Involvement, Collaboration, Democracy, Transparency, Innovation, Respect, Problem solving, Identify common goal and Qualitarian.

This study used, decision making, goal setting, problem solving, communication, teamwork, and motivation to measure participatory management while employee performance was measured by effectiveness.

The main objective of this study was to assess the impact of participatory management on employee performance in selected manufacturing firms within Kaduna Metropolis, Nigeria. The specific objectives were to evaluate the effects of participatory decision-making, goal-setting, problem-solving, communication, motivation, and teamwork on employee performance in these organizations.

2.0. Literature Review

2.1. Participatory Management

Participatory management is a management approach that involves employees actively in decision-making and other core managerial processes within an organization (Ogbo, Ugwu, Ugbam & Kifordu, 2016). This style of management allows employees at all levels to contribute their ideas and opinions on workplace policies and decisions that help the organization achieve its goals while also enhancing job satisfaction and professional growth. Unlike the autocratic management style, where a manager makes all decisions independently and maintains strict control, participatory management encourages collaboration by seeking employees' input in solving organizational challenges and implementing effective strategies. As a result, employees feel more valued and motivated to contribute to the realization of organizational objectives.

Sharif and Hina (2018) describe participatory management as a process that enables employees to take part in the strategic and tactical decisions of an organization. It is a broad concept that encompasses several dimensions, including the domain (range of decisions employees can influence), level (organizational hierarchy at which participation occurs), degree (extent of involvement), form (direct or indirect participation), basis (reason for inclusion), and limit (extent to which participation is allowed). Participation may occur directly or indirectly,

formally or informally, and may vary depending on the structure, culture, and management style of the organization.

2.2. Employee Performance

According to (Al Mehrzi and Singh, 2016) performance is the outcome or degree of success of an individual as a whole throughout a specific time period in completing duties in comparison to numerous alternatives, such as work standards, targets, or established criteria that have been mutually agreed upon. Durga (2017) defines performance as the execution of a task or the accomplishment of specific goals, emphasizing that employee performance reflects how well individuals meet job requirements and achieve desired outcomes. Similarly, Kroll (2006) views employee performance as a measure of efficiency and effectiveness in job execution. Shmailan, (2016) views employee performance refers to the actions undertaken by employees in executing the tasks required by the firm.

Efficiency involves maximizing output with minimal input—essentially “doing things right” by optimizing resources and avoiding waste. Effectiveness, on the other hand, focuses on “doing the right things,” meaning carrying out activities that directly contribute to the achievement of organizational objectives (Robbins & Coulter, 2015). Thus, while efficiency centers on process optimization, effectiveness emphasizes goal attainment.

Farajollah (2008) further explains that employee performance is grounded in both social and psychological theories developed by management scholars. It encompasses two main dimensions—efficiency and effectiveness—which together determine the overall contribution of an employee to the success and sustainability of an organization.

2.3. Theoretical Framework

Equity Theory

Equity Theory was proposed by Adams (1965), who described equity as the act of being fair and impartial in social interactions. He viewed it as an art that requires self-discipline and the ability to overcome selfish tendencies in order to maintain fair and effective relationships that consider the interests of others. According to Adams, equity is achieved when the ratio of an individual’s outcomes (such as rewards) to their inputs (such as effort or skill) is equal to that of others.

The theory emphasizes that employees are not only concerned with the total rewards they receive but also with how these rewards compare to what others receive in similar situations. Employees evaluate their input–output ratio—inputs being effort, experience, education, and

competence, and outcomes including pay, recognition, and promotions—against those of their peers. When they perceive an imbalance, such as being under-rewarded compared to others with similar inputs, they experience tension and dissatisfaction. This tension motivates them to seek fairness, either by adjusting their performance, negotiating rewards, or altering their perceptions.

Equity Theory supports this study because fairness and balance in the workplace—particularly in the manufacturing sector—encourage participation in decision-making and improve employees' sense of justice, motivation, and overall performance.

2.4. Empirical Review

Njuguna et al. (2021) examined the influence of participatory management on employee performance in water service providers in Kenya. The study arose from persistent concerns about poor employee performance despite participatory initiatives. A descriptive research design was used, with a sample of 206 employees drawn from five water and sanitation companies using simple random sampling. Primary data were gathered through self-administered questionnaires and analyzed with descriptive and inferential statistics using SPSS version 21. Reliability was tested using Cronbach's alpha. The study found that participatory management positively influenced employee performance.

Ugwu, Chimaobi, and Nnaji-Ihedinma (2020) investigated participatory management and employee satisfaction at Afam Power Holding Plc in Port Harcourt, Nigeria. Using a correlational survey design, data were collected from 125 employees through purposive sampling. Out of 125 distributed questionnaires, 106 were valid for analysis. Hypotheses were tested using Pearson correlation techniques. Findings revealed a significant positive relationship between organizational structure and employee motivation, indicating that participatory management enhances employee satisfaction.

Oyo-Ita, Worlu, and Udoh (2020) studied the impact of participatory management on employee productivity in selected banks in Lagos State. The study aimed to determine the relationship between participatory management and employee productivity using a survey design. Data were collected from 220 bank staff, and regression analysis was employed to test the hypotheses using SPSS. Results showed a strong positive relationship between participatory management and employee productivity. The study concluded that participatory management aligns employees with organizational systems, thereby improving productivity.

Previous studies by Njuguna et al. (2021), Ugwu et al. (2020), and Oyo-Ita et al. (2020) have explored participatory management across different contexts, industries, and timeframes.

However, none specifically focused on the manufacturing sector in Kaduna Metropolis, Nigeria, nor did they integrate the six key dimensions of participatory management identified in this study. Hence, this research fills that gap by examining the effect of participatory management on employee performance in selected manufacturing companies—namely 7up Bottling PLC, Eurofoam Ltd., Northern Noodles Ltd., and Flour Mill Ltd.—in Kaduna Metropolis.

3.0. Methodology

This study adopted a cross-sectional research design, as it covered multiple organizations in Kaduna State, Nigeria. The population included all categories of staff—management, senior, junior, and contract employees—working in four selected manufacturing companies located in Kaduna Metropolis: 7up Bottling PLC, Eurofoam Ltd, Northern Noodles Ltd, and Flour Mill Ltd. The total population comprised 1,468 employees across the four companies. The study focused on examining how participatory management practices—such as decision-making, goal setting, communication, motivation, problem solving, and teamwork—affect employee performance within these manufacturing firms. The population of the manufacturing companies is listed in the table follows:

Table 1. Selected manufacturing companies in Kaduna Metropolis

Names of Manufacturing Companies	Management Staff	Senior Staff	Junior Staff	Contract Staff	Total
7UP Bottling PLC	17	73	293	130	513
Eurofoam Ltd.	11	57	95	21	184
Northern Noodles Ltd	13	65	140	104	322
Flour Mill Ltd.	29	62	89	269	449
TOTAL	70	293	617	524	1468

Source: Researchers Computation, 2024

Thus, the population of all the staff in the manufacturing companies in this study was 1468 and this was sampled using the Taro Yamane (1967) formula as stated below:

$$n = \frac{N}{1 + Ne^2}$$

Where N is the population size

e is the margin error (assume 5%)

l= constant

e=0.05

$$n = \frac{1468}{1+1468 \times 0.05^2} = 314$$

n=314

From the above Taro Yamane calculation, the sample size of the study was 314 of the manufacturing companies in Kaduna metropolis. Furthermore, the study used a proportional stratified random sampling technique in selecting the 314 from 1468 employees. The researcher considered selecting sample in each of the companies in Kaduna metropolis using a proportion according to the population per company and these are:

Table 2. Proportion of Selected Manufacturing Companies in Kaduna Metropolis

Companies	Population	Proportion	Sample	No. of Added Questionnaire	Total Questionnaires Added
7UP bottling company Plc.	513	513 x 314/1468	110	33	143
Eurofoam Ltd.	184	184 x 314/1468	39	12	51
Northern Noodles Ltd	322	322 x 314/1468	69	21	90
Flour Mill Ltd.	449	449 x 314/1468	96	29	125
TOTAL	1468	-	314	95	409

Source: Researchers Computation (2024)

From the above table 2, copies of the questionnaire were apportioned to the sample size for each of the selected manufacturing company in Kaduna Metropolis as it appears on the proportion index, with the sample size as determined by Taro Yamane formular as 314, however, 409 employees. This is in line with Israel (2013) which asserts that researchers commonly add 10% to sample size to compensate for persons the researcher is unable to contact or 30% to compensate for non-response. For example, 7UP Bottling PLC has the highest number of staff population in the selected manufacturing companies in Kaduna metropolis of

513 and after the proportion applied, it received 110 copies of questionnaires with 33 (30%) additional copies administered to all the levels of staff in the organization in Kaduna. The same applied to the other three companies in the state. 398 questionnaires were completed and returned, but only 383 questionnaires were found usable for analysis, while 15 questionnaires were removed from the data analysis for being outliers.

3.1. Measurement Variables

The study employed six measurement variables—**decision-making, goal setting, problem solving, communication, motivation, and teamwork**—to represent the independent variable, **participatory management**, and the dependent variable is **employee performance**.

These measurement variables were adapted from previous scholarly works, including **Ezekiel et al. (2015)**, **Kuria (2013)**, **Ugwu et al. (2020)**, **Ong et al. (2019)**, and **Manzoor (2017)**. Each of these variables was operationalized through carefully designed questionnaire items aimed at capturing respondents' perceptions of participatory management practices and their impact on performance outcomes.

The latent variables for participatory management, along with the corresponding number of measurement items used in the questionnaire, are presented in **Table 3** below:

Table 3. Latent variables and measurements

S/N	Variables	No. of measurements	Details of measurement
1	Decision making	5	An independent variable. Measured qualitatively centered on consultation, apathy, rejection and improvement
2	Goal-setting	4	An independent variable. Measured qualitatively centered on goal attainment, acceptance, mechanisms and task understanding.
3	Problem solving	5	An independent variable. Measured qualitatively centered on intuitiveness, sensibility, logicity, dialogue and addressing root cause of problems
4	Communication	7	An independent variable. Measured qualitatively centered on understanding of job, goals, targets, and openness and transparency

5	Motivation	4	An independent variable. Measured qualitatively centered on recognition, payment, and positive job attitude
6	Teamwork	5	An independent variable. Measured qualitatively centered on synergy, discussion, team suggestion and team help
7	Employee performance	6	The dependent variable. Measured qualitatively centered on factors enhancing performance; speed, accuracy, skills and abilities, quality of work, and initiative.

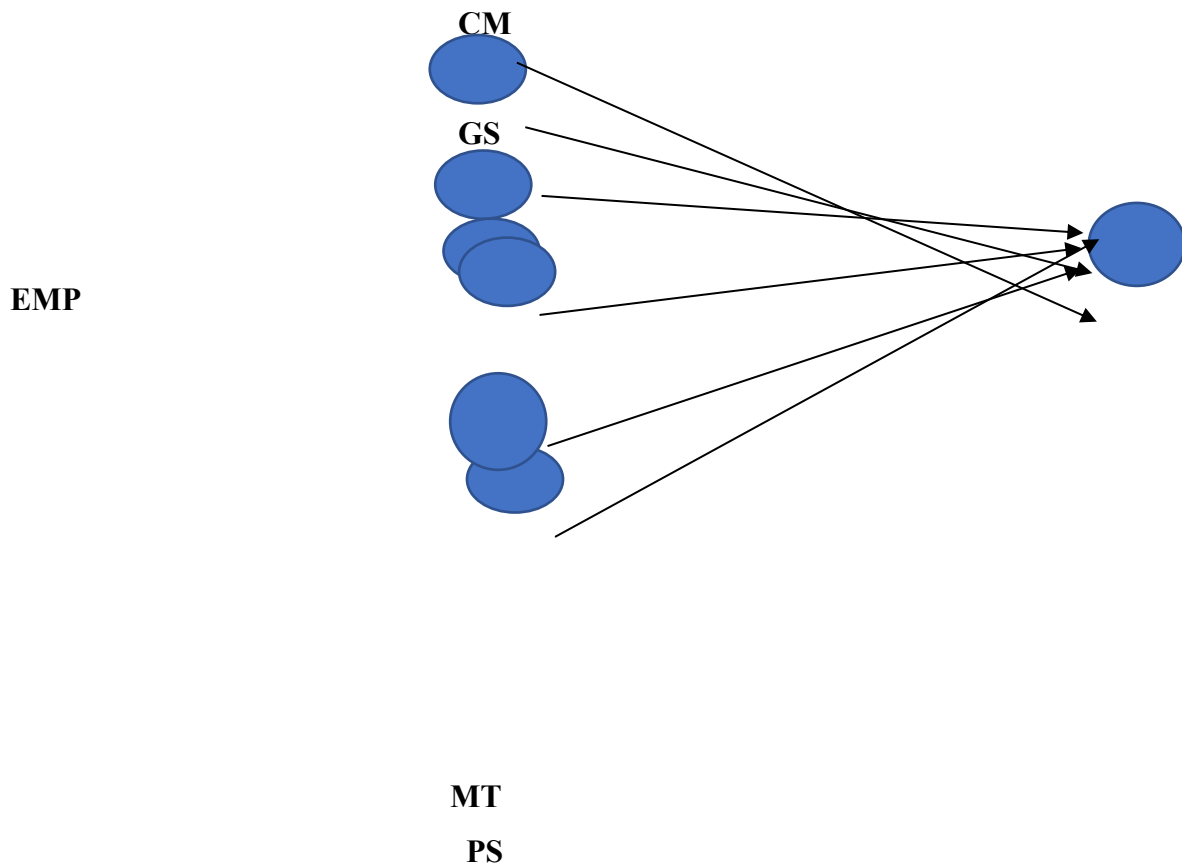
Source: Researchers Compilation 2024, details of measurement drawn from questionnaire

3.2. Model Specification

This study employed **descriptive statistics**, including the **mean, median, maximum, and standard deviation**, to examine the characteristics of the study variables. To test the research hypotheses and determine the effect relationships between the independent and dependent variables, the **Partial Least Squares Structural Equation Modeling (PLS-SEM)** technique was applied. This modeling approach, originally developed by **Wold (1982)**, involves a sequence of regressions expressed through weight vectors, which, upon convergence, satisfy fixed-point equations.

To evaluate multicollinearity among the formative indicators, the **Variance Inflation Factor (VIF)** was assessed. Higher VIF values indicate a stronger degree of collinearity, with values of **5 or above** suggesting significant collinearity issues. However, some researchers, including **Mason and Perreault (1991)** and **Becker et al. (2015)**, have noted that problems can occur at values as low as **3**. Ideally, VIF values should remain below **3** to ensure reliability. Given that **PLS-SEM** is a non-parametric analytical method, the study used **bootstrapping** to determine the statistical significance and relevance (magnitude) of the indicator weights. Following **Chin (1998)** and **Hair et al. (2017a)**, the **Bias-Corrected and Accelerated (BCa) bootstrap confidence intervals** were applied when the bootstrap distribution of indicator weights appeared skewed. Otherwise, the **percentile method** was employed to construct bootstrap-based confidence intervals, as recommended by **Aguirre-Urreta and Rönkkö (2018)**.

Fig.1: Structural equation model of participatory management variables and employee performance



Source: Researchers Computation 2024

GS=Goal setting; DM=Decision Making; PS= Problem-solving; CM=Communication; MT= Motivation and TW= Teamwork. EMP= Employee Performance

The model depicts the effect of measurement variables of participatory management (goal setting, decision making, problem solving, communication, motivation, teamwork) on employee performance.

3.3. The PLS Path Modelling

The **PLS-SEM path model** is composed of two key components: the **measurement model** (also referred to as the *outer model*) and the **structural model** (also known as the *inner model*) (Hair et al., 2017). The measurement model explains the relationship between the observed variables (indicators) and their underlying latent constructs, while the structural model depicts the relationships among the latent variables themselves.

3.3.1. Assessment of the Measurement Model

In evaluating the measurement model, this study examined several key criteria: the **reliability of individual items**, **internal consistency reliability** (or construct reliability), **discriminant validity**, and **convergent validity** for all reflective constructs included in the model (Hair et al., 2017).

3.3.2. Individual Item Reliability

To determine the reliability of individual items, the **PLS algorithm** was executed, and the results are illustrated in *Figure 4.4*. The **outer loadings** of each indicator were used to assess the reliability of reflective constructs (Duarte & Roposo, 2010; Hair et al., 2012). According to **Hair et al. (2017)**, an indicator with an outer loading value of **0.70 or above** is considered reliable and suitable for inclusion in the analysis. Therefore, all items that met this threshold were retained for further analysis, as shown in *Figure 2*.

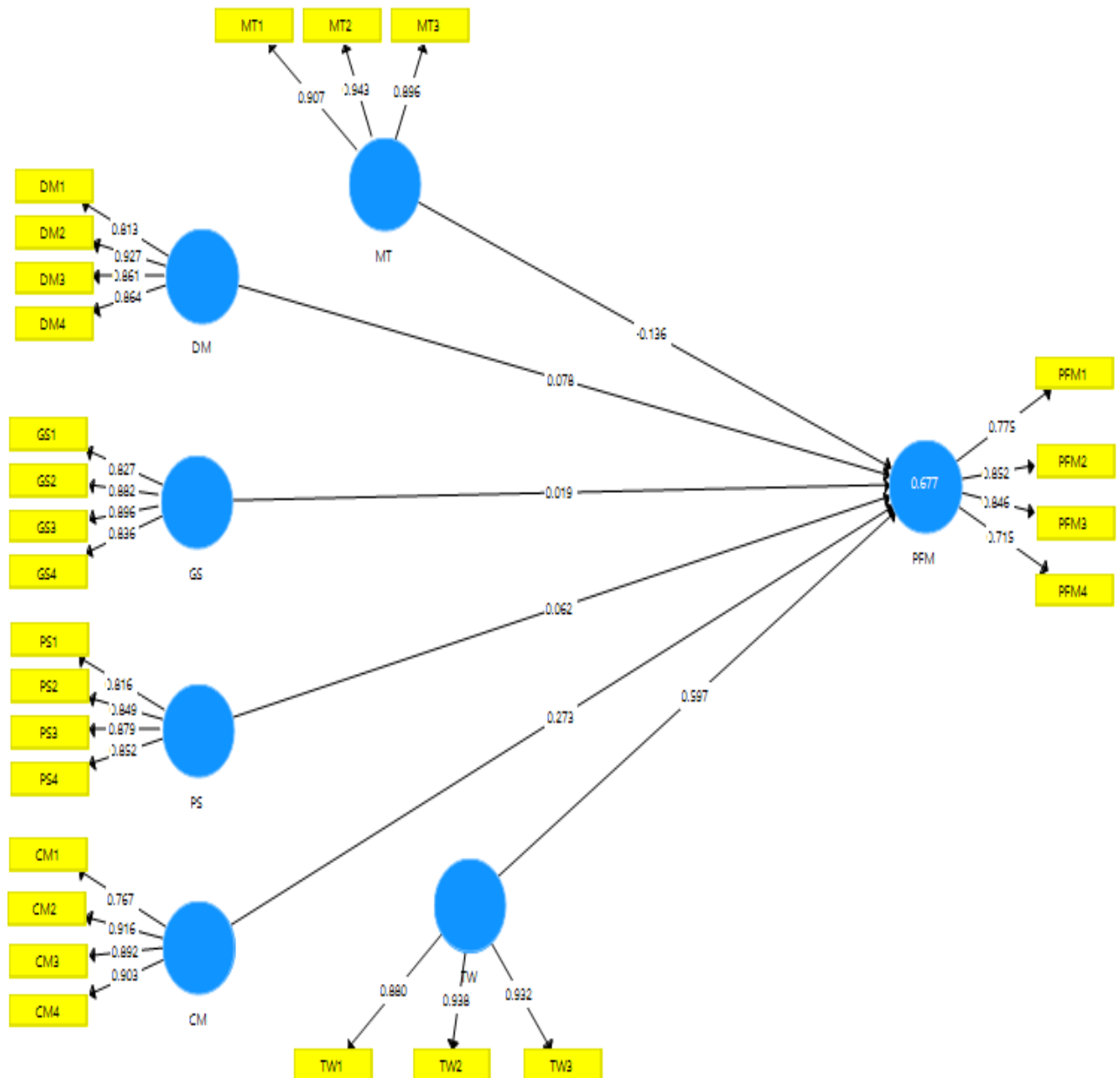


Figure 2 Path Model

Table 4. Measurement Model

Indicators	Outer Loadings	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
CM1	0.77	0.89	0.93	0.76
CM2	0.92			
CM3	0.89			
CM4	0.90			
DM1	0.81	0.89	0.92	0.75
DM2	0.93			
DM3	0.86			
DM4	0.86			
GS1	0.83	0.88	0.92	0.74
GS2	0.88			
GS3	0.90			
GS4	0.84			
MT1	0.91	0.90	0.94	0.84
MT2	0.94			
MT3	0.90			
PFM1	0.77	0.81	0.88	0.64
PFM2	0.85			
PFM3	0.85			
PFM4	0.72			
PS1	0.82	0.87	0.91	0.72
PS2	0.85			
PS3	0.88			
PS4	0.85			
TW1	0.88	0.91	0.94	0.84
TW2	0.94			
TW3	0.93			

Source: Survey data analyzed using Smart PLS

As presented in **Table 4**, with the exception of a few items (DM5, MT4, PS5) that were removed due to measurement concerns, all remaining indicators recorded loadings of **0.70 or**

higher. Following the criterion established by **Hair et al. (2017)**, these results confirm that the retained items are reliable measures of their respective reflective latent constructs.

3.3.3. Internal Consistency

Internal consistency evaluates how well multiple items measure the same reflective latent construct. Traditionally, this has been assessed using **Cronbach's Alpha**, which estimates reliability based on the inter-correlations among items. However, Cronbach's Alpha has been criticized for its sensitivity to the number of items in a scale and for potentially underestimating true reliability. As a result, **Composite Reliability (CR)** is now preferred, particularly in Structural Equation Modeling (SEM) (Hair et al., 2017).

A reflective construct is considered reliable when its CR value is **0.60 or above** (Hair et al., 2017). As shown in **Table 4.2**, the CR values for all reflective constructs in this study ranged between **0.81 and 0.94**, indicating a high level of internal consistency. Thus, all constructs in the study can be deemed reliable since their CR values exceed the recommended threshold.

3.3.4. Convergent Validity of Reflective Models

Convergent validity determines how well a measure truly represents the construct it intends to measure, showing positive correlations with other measures of the same construct (Hair et al., 2017). This is commonly assessed using the **Average Variance Extracted (AVE)**, which represents the average amount of variance captured by a construct from its indicators. According to Hair et al. (2011, 2017), an AVE value of **0.50 or higher** indicates adequate convergent validity—meaning the construct explains at least 50% of the variance in its indicators.

Based on this benchmark, all reflective constructs in this study demonstrated AVE values above **0.50**, confirming that each construct possesses sufficient convergent validity and accounts for more than half of the variance in its corresponding indicators.

3.3.4. Discriminant Validity of Reflective Models

Discriminant validity (DV) assesses whether a construct is empirically distinct from other constructs within the model. To evaluate this, the **Heterotrait-Monotrait (HTMT) ratio** was used. According to **Henseler et al. (2015)**, the HTMT value should not exceed **0.85**, while **Franke and Sarstedt (2019)** suggest a more lenient upper limit of **0.90**.

As presented in **Table 4.9**, the HTMT ratios for all constructs were below **0.85**, confirming that each construct is distinct from the others. Therefore, the discriminant validity of the reflective measurement model was satisfactorily established.

Table 5: Discriminant Validity: Heterotrait-Monotrait Ratio (HTMT)

Constructs	CM	DM	GS	MT	PFM	PS	TW
CM							
DM	0.71						
GS	0.79	0.60					
MT	0.72	0.76	0.83				
PFM	0.83	0.65	0.71	0.77			
PS	0.83	0.79	0.73	0.81	0.77		
TW	0.84	0.66	0.74	0.82	0.61	0.80	

Source: survey data analyzed using SMART PLS

Based on the established threshold values, the results presented in **Table 4.9** indicate that all constructs successfully met the **HTMT criterion**, confirming that each construct in the study is conceptually and empirically distinct. This finding affirms that **discriminant validity** has been achieved across all constructs, thereby validating the measurement model and confirming its suitability for further structural analysis.

As detailed in the **methodology section**, the study tested its hypotheses using **bootstrapping analysis**. Specifically, the **standard bootstrapping procedure** was applied, employing **5,000 bootstrap samples** for **383 cases** to evaluate the statistical significance of the **path coefficients** representing direct relationships between constructs (Hair et al., 2017).

The results of this analysis are illustrated in **Figure 2** and summarized in **Table 4**, which present the estimated path coefficients, their corresponding *t*-values, and *p*-values, thereby indicating the strength and significance of the hypothesized relationships within the model.

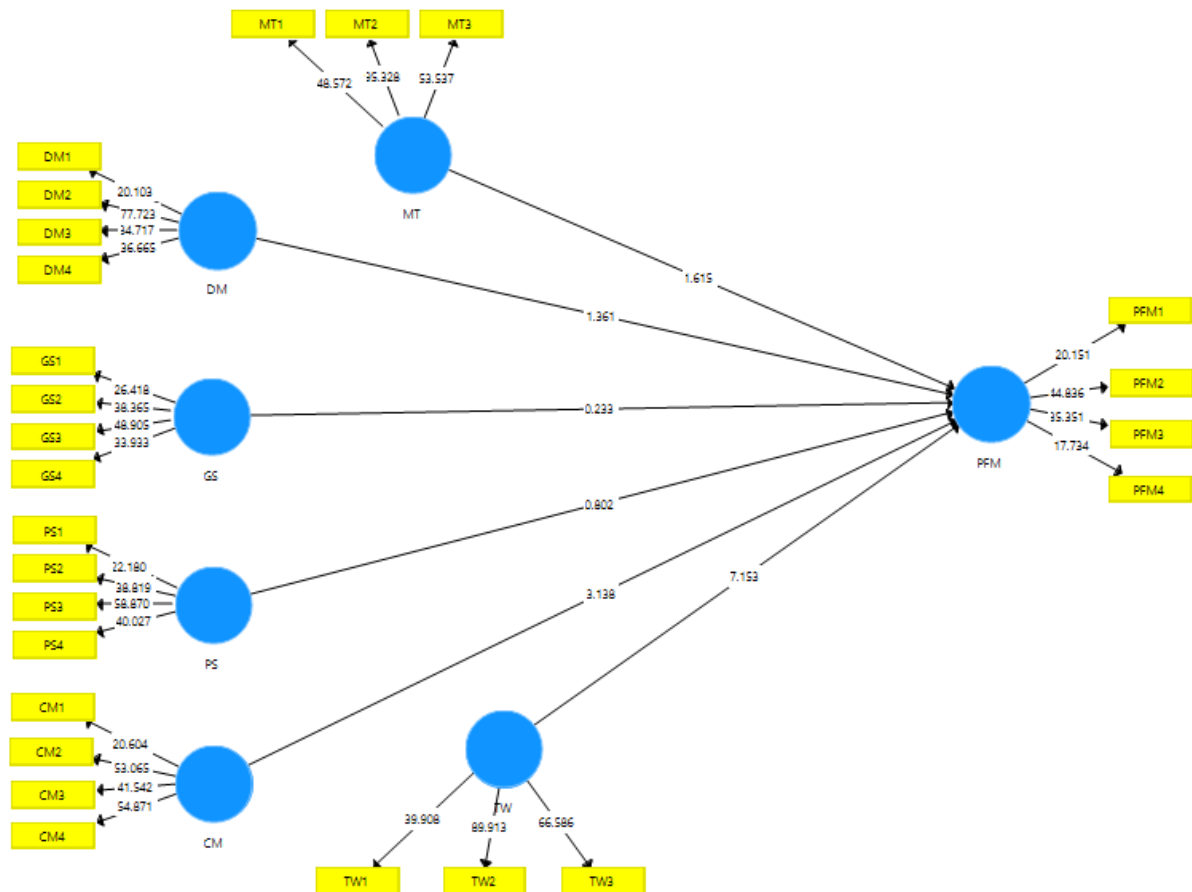


Figure 3 Bootstrapping

Source: Survey data analyzed using SMART PLS

The results presented in **Figure 3** and **Table 4** were interpreted based on the **path coefficients (Beta values)**, **standard errors (SE)**, and **t-values (T-statistics)**, along with the **confidence intervals** for both the lower and upper bounds. These statistical indicators were used to determine the strength, direction, and significance of the relationships among the constructs. Findings revealed that the results were **significant at the 5% level of significance**, indicating that the hypothesized relationships in the model are statistically supported.

Table 6: Size and Significance of the Path Coefficients of Direct Relationships

Relationship	Beta	Standard		
	Coefficient	Deviation	T Statistics	P Values
CM -> PFM	0.27	0.09	3.14	0.00
DM -> PFM	0.08	0.06	1.36	0.17
GS -> PFM	0.02	0.08	0.23	0.82
MT -> PFM	0.13	0.08	1.62	0.11

PS -> PFM	0.07	0.08	0.80	0.42
TW -> PFM	0.59	0.08	7.15	0.00

Source: Survey data analyzed using SMART PLS

The result for **H01** revealed that **decision-making** has a positive but statistically insignificant effect on employee performance ($\beta = 0.08$, $p > 0.05$). This indicates that while involving employees in decision-making may lead to some improvement in their performance, the effect is not statistically significant. This finding may be attributed to the fact that most organizations still limit employees' participation in key decision-making processes, as observed in previous studies. Therefore, for the selected manufacturing companies in Kaduna Metropolis, although decision-making shows a positive relationship with employee performance, it does not have a significant impact. Thus, **H01 is accepted**.

The result for **H02** showed that **goal setting** is positively but statistically insignificantly effect on employee performance ($\beta = 0.02$, $p > 0.05$). This suggests that setting goals can improve employee performance to some extent, but the effect is not significant. In essence, when employees are involved in goal setting, their performance tends to improve slightly, though not substantially. For the selected manufacturing companies in Kaduna Metropolis, goal setting has a positive but insignificant relationship with employee performance. Therefore, **H02 is accepted**.

The analysis for **H03** revealed that **problem solving** has a positive but statistically insignificant effect on employee performance ($\beta = 0.07$, $p > 0.05$). This means that while engaging employees in problem-solving activities tends to enhance their performance, the improvement is not significant. For the selected manufacturing companies in Kaduna Metropolis, problem solving is positively related to employee performance but does not exert a significant influence. Hence, **H03 is accepted**.

For **H04**, the result demonstrated that **communication** has a significant and positive effect on employee performance ($\beta = 0.27$, $p < 0.05$). This implies that effective communication enhances employee performance considerably. Good communication facilitates understanding, coordination, and collaboration among workers from diverse backgrounds, which in turn improves organizational outcomes. Therefore, for the selected manufacturing companies in Kaduna Metropolis, communication significantly enhances employee performance. Consequently, **H04 is rejected**.

The result for **H05** showed that **motivation** is positively but statistically insignificantly effect on employee performance ($\beta = 0.13$, $p > 0.05$). This indicates that although motivation tends to improve employee performance, the effect is not strong enough to be statistically significant.

This suggests that while motivated employees may perform better, other factors may also influence their productivity. Therefore, **H05 is accepted.**

Finally, the analysis for **H06** revealed that **teamwork** has a positive and significant relationship with employee performance ($\beta = 0.59, p < 0.05$). This implies that employees who work collaboratively tend to perform better. Teamwork fosters knowledge sharing, creativity, and mutual support, all of which enhance overall performance. For the selected manufacturing companies in Kaduna Metropolis, teamwork plays a crucial role in improving employee performance. Hence, **H06 is rejected.**

3.3.5. Coefficient of Determination (R^2)

As earlier explained, the **coefficient of determination (R^2)** was assessed to evaluate the proportion of variance in the **endogenous latent variable (employee performance)** that can be explained by the **exogenous latent variables (decision-making, goal setting, problem solving, communication, motivation, and teamwork)** (Hair et al., 2017). The R^2 value represents the model's explanatory power and indicates how well the independent variables collectively predict the dependent variable.

According to Hair et al. (2017), R^2 values of **0.75, 0.50, and 0.25** can be described as **substantial, moderate, and weak**, respectively. The R^2 value for this study, as shown in **Table 7**, demonstrates the degree to which participatory management (through its dimensions) explains the variance in employee performance among the selected manufacturing companies in Kaduna Metropolis. This result provides an overall measure of how well the model fits the data and the extent to which participatory management practices contribute to improving employee performance.

Table 7: Coefficient of Determination (R^2)

Variable	R Square	R Square Adjusted
PFM	0.68	0.67

Source: Survey data analyzed using SMART PLS

Table 7 reveals that **decision-making, goal setting, problem solving, communication, motivation, and teamwork** jointly explain **68 percent of the variance** in employee performance. According to Chin (1998), an **R^2 value of 0.68** indicates a **substantial level of explanatory power**, meaning that the independent variables in the model strongly predict the

dependent variable. Similarly, **Hair et al. (2017)** support this interpretation, noting that R^2 values of **0.75, 0.50, and 0.25** can be described as **substantial, moderate, and weak**, respectively. Therefore, the R^2 result of **0.68** in this study signifies that participatory management practices—through the identified dimensions—have a strong and meaningful influence on employee performance in the selected manufacturing companies within Kaduna Metropolis.

3.3.6. Assessment of the Effect Size (f^2)

The Effect Size (f^2) analysis evaluates the extent to which each independent (predictor) variable contributes to explaining the dependent (endogenous) variable when included in the model. Specifically, it measures the change in the R^2 value when a particular predictor is removed, indicating whether that variable has a substantive effect on the dependent construct (Hair et al., 2017).

According to Cohen (1988), the benchmark values for interpreting effect size are as follows:

0.02 = small effect,

0.15 = medium effect, and

0.35 = large effect.

Based on these guidelines, the results presented in Table 8 demonstrate the individual contribution of each participatory management dimension—decision-making, goal setting, problem solving, communication, motivation, and teamwork—to employee performance. These findings indicate the relative strength of each predictor variable's impact, helping to determine which aspects of participatory management most effectively enhance employee performance in the selected manufacturing companies.

Table 8 Assessment of Effect size (f^2)

Constructs	PFM	Effect Size
CM	0.06	Small
DM	0.01	None
GS	0.00	None
MT	0.01	None
PS	0.00	None
TW	0.34	Medium

Source: survey data analyzed using SMART PLS

Based on Cohen's (1988) guideline, the results in Table 8 reveal that teamwork has the highest and a medium effect on employee performance, followed by communication with a small effect, while decision-making, goal setting, problem solving, and motivation show no effect. For predictive accuracy (Q^2_{predict}), scholars such as Hair et al. (2017) emphasize that PLS-SEM focuses on both theory testing and prediction. To validate model results, Shmueli et al. (2016) introduced the PLS Predict procedure, which integrates both in-sample and out-of-sample prediction to assess the predictive power and reliability of the model.

Table 9: Predictive Relevance Model

Constructs	PLS Model	Linear Model	Q^2_{predict}
	MAE	MAE	
PFM4	0.85	0.85	0.24
PFM1	0.49	0.50	0.48
PFM3	0.68	0.70	0.35
PFM2	0.50	0.49	0.56

Source: Survey data analyzed using SMART PLS

Table 9 shows that most of the indicators have positive Q^2 values above zero, indicating predictive relevance. Moreover, out of the four indicators measuring employee performance, all have lower values in the PLS model compared to the linear model. Following **Shmueli et al. (2016)**, this suggests that the model possesses **medium predictive power**.

4.0. Discussion of Findings

This study contributes to existing literature by empirically analyzing the **effect of participatory management on employee performance**, using six indicators—**decision-making, goal setting, problem solving, communication, motivation, and teamwork**—within selected manufacturing firms in Kaduna Metropolis.

H01: Decision-making – The findings revealed that decision-making has a **positive but statistically insignificant** effect on employee performance ($\beta = 0.08$, $p > 0.05$). This aligns with **Ikiugu (2019)**, who emphasized that while participatory management enhances performance, its outcomes depend on contextual factors. Similarly, **Agwu and Olele (2014)** argued that without proper work redesign, employee involvement initiatives may yield minimal or even negative results.

H02: Goal setting – The relationship between goal setting and employee performance was also **positive but statistically insignificant** ($\beta = 0.02$, $p > 0.05$), consistent with **Mildred and**

Mercy (2015) and **Sven et al. (2015)**, who found that goal setting did not significantly influence employee performance.

H03: Problem solving – The results showed a **positive but statistically insignificant** relationship between problem solving and employee performance ($\beta = 0.07$, $p > 0.05$). This is supported by **Ikiugu (2019)**, who noted that while participatory management promotes engagement, other contextual factors can limit its impact on performance outcomes.

H04: Communication – Communication was found to have a **positive and significant** effect on employee performance ($\beta = 0.27$, $p < 0.05$). This agrees with **Asamu (2014)** and **Heru and Heru (2018)**, who established that effective communication enhances employee output. However, **Marchalina and Ahmad (2017)** reported a negative correlation, emphasizing that the nature of communication determines its impact.

H05: Motivation – Motivation exhibited a **positive but statistically insignificant** effect on employee performance ($\beta = 0.13$, $p > 0.05$). This finding also supports **Ikiugu (2019)** and **Agwu and Olele (2014)**, who observed that without appropriate organizational structures, participatory motivation may not yield significant performance gains.

H06: Teamwork – Teamwork demonstrated a **positive and significant** impact on employee performance ($\beta = 0.59$, $p < 0.05$), corroborating the works of **Heru and Heru (2018)**, **Onyekwelu et al. (2018)**, **Agwu (2015)**, **Sanyal and Mohammed (2018)**, and **Ahmad and Manzoor (2017)**. These studies affirm that teamwork fosters collaboration and productivity. However, **Flores-Fillol et al. (2017)** highlighted that teamwork effectiveness depends on organizational processes and implemented activities.

Overall, the results suggest that while participatory management has a generally **positive influence** on employee performance, its **effectiveness depends on implementation strategies**. The limited impact of certain indicators (decision-making, goal setting, problem solving, and motivation) may stem from poor managerial inclusion or limited employee autonomy as well as the geographical location.

5.0. Conclusion and Recommendations

The study concludes that participatory management enhances employee performance, though its effectiveness varies across indicators. Specifically, **communication** and **teamwork** significantly improve performance, while **decision-making**, **goal setting**, **problem solving**, and **motivation** show positive but insignificant effects.

To optimize employee performance in manufacturing firms within Kaduna Metropolis:

- i. **Strengthen participatory decision-making** at all organizational levels, ensuring employees are genuinely involved in strategic discussions.

- ii. **Enhance goal-setting participation** by encouraging employees to contribute to defining and aligning organizational goals.
- iii. **Promote participatory problem-solving**, enabling employees to propose innovative solutions to operational challenges.
- iv. **Foster teamwork and open communication** to build trust, collaboration, and shared understanding among employees.
- v. **Redesign work processes** to integrate participatory management principles into daily operations, ensuring sustainability of improved performance outcomes.

Through these strategies, manufacturing organizations can leverage participatory management as a vital tool to achieve higher productivity, job satisfaction, and organizational effectiveness.

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WORKFORCE PLANNING AND EMPLOYEE PERFORMANCE: A CATALYST
FOR SUSTAINABLE DEVELOPMENT IN FEDERAL MEDICAL CENTER (FMC),
JABI ABUJA, NIGERIA

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Abstract

Despite the critical role of workforce planning in healthcare systems, many public medical institutions continue to experience inefficiencies that hinder sustainable development. This study examined the relationship between workforce planning and sustainable development, with employee performance serving as a mediating variable among medical doctors in the Federal Medical Center (FMC), Jabi Abuja, Nigeria. A cross-sectional survey design was adopted and primary data were collected from a population of 389 medical doctors using a structured questionnaire measured on a five-point Likert scale. Data were analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM) through SmartPLS version 4.1.1.7. The findings reveal that workforce planning has a significant positive influence on both employee performance and sustainable development. Specifically, workforce planning strongly improves employee performance and moderately influences sustainable development. Furthermore, employee performance significantly contributes to sustainable development and mediates the relationship between workforce planning and sustainable development. These findings indicate that effective workforce planning enhances organizational sustainability primarily through improved employee performance. The study recommends that healthcare institutions develop comprehensive workforce planning strategies that align staffing, skills development, and succession planning with long-term sustainability objectives. In addition, performance management systems and targeted professional development programmes should be implemented to ensure that workforce planning effectively translates into improved employee outcomes and institutional sustainability.

Keywords: Workforce Planning, Employee Performance, Sustainable Development and Resource- Based View theory

Introduction

Workforce planning constitutes a foundational pillar in the management of modern organizations, as it ensures the alignment of human capital with long-term institutional objectives. Employees are the central drivers of organizational growth and service delivery, particularly in critical public institutions such as healthcare facilities (Eze, 2024). The extent to which an organization anticipates its workforce needs, manages talent flow, and builds staff capabilities determines its operational efficiency and sustainability (Ogbodo *et al.*, 2023). Thus, the effective implementation of workforce planning serves as a strategic mechanism for enhancing employee performance, promoting institutional stability, and driving sustainable development (Onwuka & Nwachukwu, 2024).

In Nigeria's healthcare sector, workforce planning remains an urgent concern. Despite increased government investment, public health institutions such as the Federal Medical Center (FMC), Jabi-Abuja, continue to grapple with issues of workforce shortages, skill mismatches, high turnover, and uneven staff distribution (NPHCDA, 2023). According to the World Health Organization (2024), Nigeria's doctor-to-patient ratio stands at approximately 1:4,000 far below the recommended 1:600 standard practice, while attrition among nurses and medical specialists continues to escalate due to migration, burnout, and poor succession management. These systemic inefficiencies have significantly undermined healthcare service quality, patient outcomes, and institutional resilience (Okonjo *et al.*, 2024).

Workforce planning, therefore, becomes indispensable in addressing these challenges. Key dimensions such as forecasting and demand analysis, succession and replacement planning, retention strategies, and workforce utilization are central to ensuring that the right people occupy the right roles at the right time (Olaleye & Odu, 2023). Through strategic forecasting, healthcare institutions can anticipate future skill needs; through succession planning, they can prepare competent successors; through effective retention and utilization policies, they can reduce turnover and optimize productivity (Mbah & Eze, 2024). When these elements are harmonized, they collectively enhance employee motivation, service efficiency, and institutional sustainability (Ikechukwu *et al.*, 2025).

However, empirical evidence suggests that most public health institutions in Nigeria, including FMC Jabi, lack structured and data-driven workforce planning frameworks. This has resulted in reactive staffing, poor human resource utilization, and declining service delivery indicators (National Bureau of Statistics, 2024). The absence of proactive human resource forecasting has also contributed to the frequent shortage of specialized professionals, delays in healthcare

delivery, and increased dependence on contract staff (Edeh *et al.*, 2024). If these trends persist, Nigeria risks worsening its healthcare deficit, increasing mortality rates, and further eroding public trust in the health system.

Hence, this study explores Workforce Planning and Employee Performance as a Catalyst for Sustainable Development in Federal Medical Center (FMC), Jabi-Abuja. It seeks to examine how effective workforce planning practices influence service quality, patient outcomes, and staff retention and development capacity. By identifying the nexus between workforce management strategies and sustainable healthcare performance, this study provides actionable insights for policymakers and hospital administrators to strengthen institutional capacity and ensure the long-term sustainability of Nigeria's healthcare system.

RELATED LITERATURE REVIEW

This section reviews relevant literature on workforce planning, employee performance, sustainable development, the empirical review, and the theoretical framework that underpin this study.

Conceptual Review

Workforce Planning

Workforce planning is a strategic human resource management process that ensures organizations possess the right number of employees with the appropriate competencies to achieve organizational objectives both in the present and in the future. Armstrong and Taylor (2020) describe workforce planning as a systematic process of analyzing current human resource capacity, forecasting future workforce requirements, and developing strategies to close potential gaps between workforce supply and organizational demand. Effective workforce planning enables organizations to anticipate changes in labor needs, align human capital with strategic priorities, and maintain operational efficiency.

In modern organizations, particularly within the healthcare sector, workforce planning plays a critical role in ensuring the availability of skilled personnel required to deliver quality services. Collings, Wood, and Szamosi (2019) argue that strategic workforce planning supports organizational sustainability by enabling institutions to manage talent shortages, reduce employee turnover, and enhance workforce stability. In healthcare institutions, inadequate workforce planning often leads to staff shortages, workload imbalances, and declining service quality.

Globally, healthcare systems face increasing pressure to manage human resources efficiently due to rising patient demands, workforce migration, and budget constraints. According to the World Health Organization (2024), many developing countries continue to experience

significant shortages of medical professionals, which affects the sustainability of healthcare service delivery. Nigeria, for instance, faces persistent workforce challenges characterized by inadequate staffing levels, uneven distribution of medical personnel, and high migration of healthcare professionals to developed countries.

Strategic workforce planning therefore becomes essential in ensuring that healthcare institutions maintain an adequate supply of skilled personnel capable of meeting growing healthcare demands. When effectively implemented, workforce planning enhances organizational efficiency, strengthens employee capacity, and contributes to long-term institutional sustainability.

Employee Performance

Employee performance refers to the degree to which employees successfully carry out their assigned duties and contribute to the achievement of organizational goals. Performance encompasses both behavioral and outcome dimensions, including productivity, efficiency, service quality, and commitment to organizational objectives. According to Noe, Hollenbeck, Gerhart, and Wright (2020), employee performance is influenced by several human resource practices such as recruitment, training, performance appraisal, and workforce planning.

In service-oriented sectors such as healthcare, employee performance plays a crucial role in determining the quality of service delivery and patient outcomes. High-performing healthcare professionals contribute significantly to improved patient care, reduced operational inefficiencies, and enhanced organizational effectiveness. Guest (2017) emphasizes that effective human resource management practices can significantly improve employee motivation and productivity, thereby enhancing overall organizational performance.

Strategic workforce planning also contributes to improved employee performance by ensuring that employees are appropriately deployed according to their competencies and professional expertise. When workforce planning aligns employee capabilities with job requirements, employees are better positioned to perform their roles efficiently. Conversely, poor workforce planning may result in workload imbalance, staff burnout, and declining employee morale, which ultimately affects performance and service quality.

Thus, employee performance represents an important mechanism through which strategic human resource practices influence organizational outcomes.

Sustainable Development

Sustainable development within organizational contexts refers to the ability of institutions to maintain long-term operational efficiency while ensuring social, economic, and human resource stability. Although the concept of sustainability originally emerged within

environmental discourse, it has increasingly been applied to organizational and institutional management.

Within healthcare systems, sustainable development involves maintaining a stable and competent workforce capable of delivering consistent and high-quality healthcare services. According to the World Health Organization (2023), sustainable healthcare systems require adequate workforce planning, equitable distribution of medical personnel, and continuous professional development.

Human resource management practices play a crucial role in ensuring sustainable organizational outcomes. Becker and Huselid (1998) argue that organizations that invest in effective human resource systems are more likely to achieve sustainable competitive advantage. In healthcare institutions, sustainability is closely linked to workforce stability, employee productivity, and institutional capacity to meet evolving healthcare demands.

In developing countries, healthcare sustainability is often threatened by inadequate workforce planning, high employee turnover, and limited investment in professional development. These challenges can negatively affect service delivery, patient satisfaction, and institutional resilience. Consequently, strategic workforce planning has become increasingly important in ensuring that healthcare institutions maintain a stable and competent workforce capable of supporting long-term development goals.

Theoretical Framework

This study is grounded in the Resource-Based View (RBV) theory, which posits that organizations achieve sustained competitive advantage through the effective utilization of valuable, rare, inimitable, and non-substitutable internal resources (Barney, 1991). Within organizational contexts, human resources represent one of the most critical strategic assets capable of generating long-term performance advantages.

Workforce planning enables organizations to strategically manage and deploy human resources by forecasting staffing requirements, identifying skill gaps, and implementing succession planning strategies. Through effective workforce planning, organizations ensure that the right employees with appropriate competencies occupy key roles at the right time.

From the RBV perspective, employee performance represents the productive utilization of human capital resources. When workforce planning effectively aligns human resources with organizational goals, employees are better positioned to perform efficiently and contribute to organizational outcomes.

Sustainable development within organizations can therefore be achieved when strategic human resource capabilities are effectively deployed. Workforce planning enhances employee

performance, and improved employee performance subsequently contributes to long-term institutional sustainability. Thus, RBV provides a theoretical explanation for the proposed relationships among workforce planning, employee performance, and sustainable development.

Empirical Review

Workforce Planning and Sustainable Development

Scholars widely affirm that workforce planning plays a critical role in achieving sustainable development through enhanced institutional stability and service quality (Eliza *et al.*, 2025; Lashari *et al.*, 2025). Sustainable development within healthcare institutions extends beyond environmental preservation to include long-term workforce stability, service excellence, and institutional resilience (WHO, 2024).

Mabaso and Dlamini (2024) demonstrated that consistent workforce planning ensures equitable staff distribution and long-term capacity building, both of which sustain service delivery quality. In Nigeria, the chronic shortage of healthcare workers and poor succession planning has led to recurring service disruptions, contributing to declining health indicators and public dissatisfaction (Aliyu & Salihu, 2025). These systemic weaknesses underscore the need for strategic human resource forecasting, especially in Federal Medical Centers where patient volumes are increasing amid limited personnel capacity.

When workforce planning is effectively implemented, it strengthens institutional adaptability, enhances employee retention, and builds the human capital foundation for long-term development (Khan & Oladipo, 2025). Conversely, its absence perpetuates inefficiency, overreliance on ad-hoc staffing, and the eventual erosion of institutional sustainability. Based on this synthesis, this study hypothesizes that:

H01: Workforce planning has no significant impact on sustainable development in the Federal Medical Center, Jabi Abuja.

Workforce Planning and Employee Performance

Empirical evidence supports the link between workforce planning and employee performance as a driver of sustainable organizational outcomes. Eze (2024) found that effective manpower forecasting and replacement planning significantly improved productivity and reduced attrition in Nigerian public hospitals. Similarly, Mabaso and Dlamini (2024) reported that structured workforce planning enhanced staff motivation and operational efficiency in South African healthcare institutions.

Well-structured workforce planning enhances employees' clarity of roles, reduces work overload, and increases motivation all of which culminate in improved service quality and institutional sustainability (Eze, 2024; Mabaso & Dlamini, 2024).

In Nigeria, Okwurume and Igwe (2025) established a strong relationship between workforce utilization and employees' task performance in tertiary healthcare institutions. They emphasized that aligning employee capacity with organizational goals increases efficiency and patient satisfaction. However, Taufiq and Indiyati (2025) warned that inadequate succession planning leads to service disruption and performance decline.

Aliyu and Salihu (2025) further revealed that institutions lacking robust forecasting and replacement planning experience high turnover and limited innovation, directly impeding sustainable healthcare delivery. Collectively, these findings confirm that workforce planning not only enhances employee performance but also strengthens institutional resilience and sustainability.

H02: Workforce Planning does not significantly impact on employee performance in the Federal Medical Center, Jabi Abuja.

Employee Performance and Sustainable Development

Employee performance is a critical determinant of organizational sustainability, particularly in service-oriented institutions such as healthcare organizations. High levels of employee performance enhance service quality, operational efficiency, and institutional resilience, thereby contributing to sustainable development outcomes.

Otoo (2024) investigated the relationship between human resource management practices and organizational effectiveness among police officers in Ghana. Using structural equation modelling, the study found that employee performance plays a significant role in translating human resource practices into improved organizational outcomes. Specifically, the findings indicated that career planning positively influenced employee performance, which in turn enhanced organizational effectiveness. The study further established that employee performance acts as a critical mechanism through which HRM practices contribute to long-term institutional success.

These findings suggest that improving employee performance is essential for achieving sustainable organizational outcomes. In healthcare institutions, improved staff performance leads to enhanced patient care, increased operational efficiency, and stronger institutional sustainability.

H03: Employee performance does not significantly impact on sustainable development in the Federal Medical Center, Jabi Abuja.

Mediating role of Employee Performance.

Aliyu and Salihu (2023) confirmed that the influence of workforce planning on healthcare sustainability is largely indirect, operating through employee engagement, satisfaction, and productivity. In contexts where forecasting, deployment, and succession planning are coherent, employee performance serves as the channel through which workforce planning translates into long-term institutional growth. Conversely, when planning is fragmented or politically influenced, employee morale declines, weakening the sustainability of healthcare service delivery. Thus, this study hypothesizes that:

H04: Employee performance does not significantly mediate the relationship between workforce planning and sustainable development in the Federal Medical Center, Jabi Abuja.

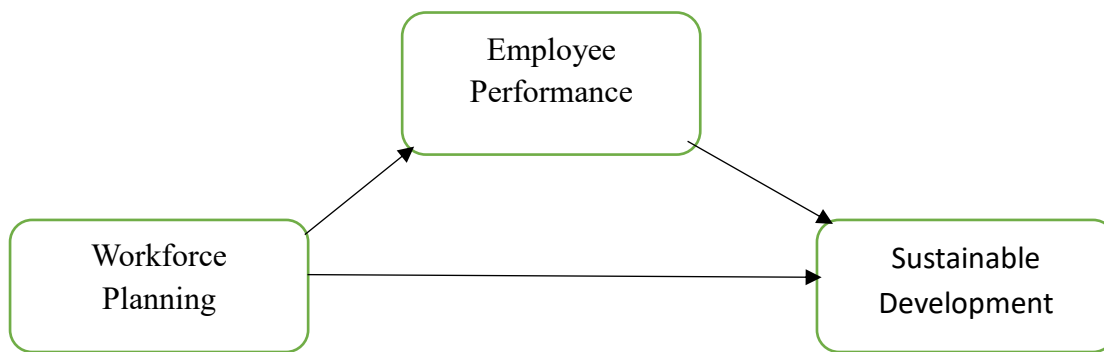


Figure 1: Research Framework

METHODOLOGY

This study adopted a cross-sectional research design. Data were collected from medical doctors working at the Federal Medical Center (FMC), Jabi Abuja using a structured questionnaire. According to official personnel records obtained from the hospital's administrative department, the total number of medical doctors employed at FMC Jabi at the time of data collection was 389. Given that the population size was relatively small and accessible, the study adopted a census approach by administering the questionnaire to all 389 medical doctors in the institution. The census approach was considered appropriate because it eliminates sampling error and provides a comprehensive representation of the study population.

The questionnaire was distributed electronically to ensure ease of participation and broader coverage across departments within the hospital. The collected data were analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM) through SmartPLS version 4.1.1.7. Following the recommendation of Hair et al. (2017), the analysis involved assessment of the measurement model for reliability and validity, followed by evaluation of the structural model to test the hypothesized relationships.

Measurement Model (Outer Model)

To assess the measurement model used in this paper, the researchers examined the reliability and validity of the constructs that make up the model workforce planning, employee performance, and sustainable development. The evaluation focused on indicator reliability, internal consistency reliability (composite reliability), convergent validity (Average Variance Extracted (AVE)) and factor loadings, and discriminant validity.

Structural Model (Inner Model)

To assess the structural model used in this paper, the researchers examined path coefficient for direct and indirect relationship, coefficient of determination (R^2), collinearity statistics model fit and predictive relevance (Q^2).

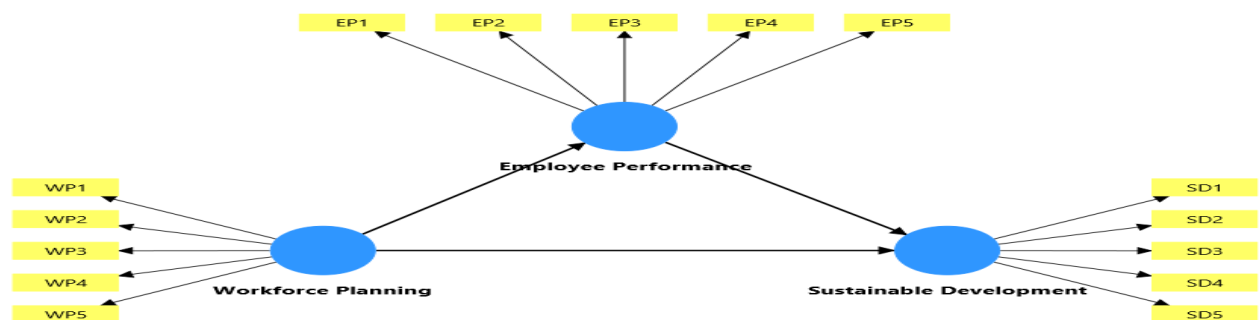


Figure 2: Model Specification

Source: SmartPLS version (v) 4.1.1.7 Output (2024)

This is a **well-specified mediation model** that examines **employee performance as the mechanism** through which **workforce planning influences sustainable development** in Federal Medical Centers. The model in Figure 2 allows for testing both direct effects and the indirect (mediated) pathway, providing comprehensive understanding of how strategic human resource planning translates into organizational sustainability outcomes. The use of multiple indicators per construct ensures robust measurement and reliable results.

Data Analysis

Table 1: Descriptive

Items	Mean	Median	Number of				Standard deviation	Excess kurtosis	Skewness	Missing Values
			Observed min	Observed max	observations used					
EP1	2.987	3	1	5	389		0.831	-0.311	0.105	0
EP2	2.853	3	1	5	389		0.763	0.538	0.185	0
EP3	2.861	3	1	5	389		0.834	0.077	-0.055	0
EP4	2.949	3	1	5	389		0.803	-0.112	0.034	0

EP5	3.131	3	1	5	389	0.818	-0.131	-0.048	0
SD1	2.817	3	1	5	389	0.824	0.12	0.129	0
SD2	2.905	3	1	5	389	0.723	0.431	-0.018	0
SD3	2.946	3	1	5	389	0.759	0.355	0.126	0
SD4	2.779	3	1	5	389	0.79	0.03	0.164	0
SD5	2.841	3	1	5	389	0.745	0.527	0.118	0
WP1	2.979	3	1	5	389	0.801	0.155	0.127	0
WP2	3.033	3	1	5	389	0.76	0.221	0.015	0
WP3	3.008	3	1	5	389	0.806	-0.211	0.015	0
WP4	2.853	3	1	5	389	0.773	0.447	0.36	0
WP5	3.149	3	1	5	389	0.747	-0.028	-0.065	0

Source: SmartPLS version (v) 4.1.1.7 Output (2024)

The descriptive results in table 1 show that the mean values of all items (EP, SD, and WP) range from 2.78 to 3.15, with median values consistently at 3, indicating that respondents generally reported a moderate level of agreement on the five-point Likert scale. The observed minimum and maximum values (1 and 5) confirm full utilization of the response scale across all items. The standard deviations, which range from 0.72 to 0.83, indicate a moderate dispersion of responses, suggesting reasonable variability among respondents. The skewness and excess kurtosis values for all items fall within acceptable limits, indicating that the data are approximately normally distributed. In addition, all items recorded zero missing values, confirming the completeness and suitability of the dataset for further multivariate analysis.

Table 2: Internal Consistency and Reliability

Variables	Items	Factor Loadings	Composite reliability (rho_c)	Average variance extracted (AVE)
Employee Performance	EP1	0.846	0.921	0.7
	EP2	0.84		
	EP3	0.821		
	EP4	0.853		
	EP5	0.823		
Sustainable Development	SD1	0.878	0.936	0.745
	SD2	0.844		

	SD3	0.868		
	SD4	0.856		
	SD5	0.87		
Workforce Planning	WP1	0.838	0.917	0.689
	WP2	0.847		
	WP3	0.837		
	WP4	0.819		
	WP5	0.808		

Source: SmartPLS v. 4.1.1.7 Output (2024)

Table 2 presents the assessment of indicator reliability, internal consistency, and convergent validity for the study constructs using factor loadings, composite reliability (ρ_c), and average variance extracted (AVE). The factor loadings for all items range from 0.808 to 0.878, exceeding the recommended threshold of 0.70, which indicates that all items adequately represent their respective constructs. The composite reliability values for employee performance ($\rho_c = 0.921$), sustainable development ($\rho_c = 0.936$), and workforce planning ($\rho_c = 0.917$) are all above the minimum acceptable value of 0.70, confirming strong internal consistency reliability. In addition, the AVE values for employee performance (0.700), sustainable development (0.745), and workforce planning (0.689) exceed the recommended threshold of 0.50, indicating that each construct explains more than half of the variance in its indicators. This confirms adequate convergent validity.

Table 3: Fornell and Larcker Criterion

Variables	1	2	3
1. Employee Performance	0.837		
2. Sustainable Development	0.422	0.863	
3. Workforce Planning	0.708	0.389	0.830

Source: SmartPLS v. 4.1.1.7 Output (2024)

Table 3 presents the Fornell and Larcker criterion used to assess discriminant validity among the study constructs. Discriminant validity is established when the square root of the Average Variance Extracted (AVE), shown on the diagonal, is greater than the correlations with other constructs. The results indicate that Employee Performance (0.837), Sustainable Development (0.863), and Workforce Planning (0.830) all have diagonal values that exceed their respective inter-construct correlations. Although Workforce Planning shows a relatively high correlation

with Employee Performance (0.708), it remains lower than the square root of AVE for both constructs, confirming adequate discriminant validity.

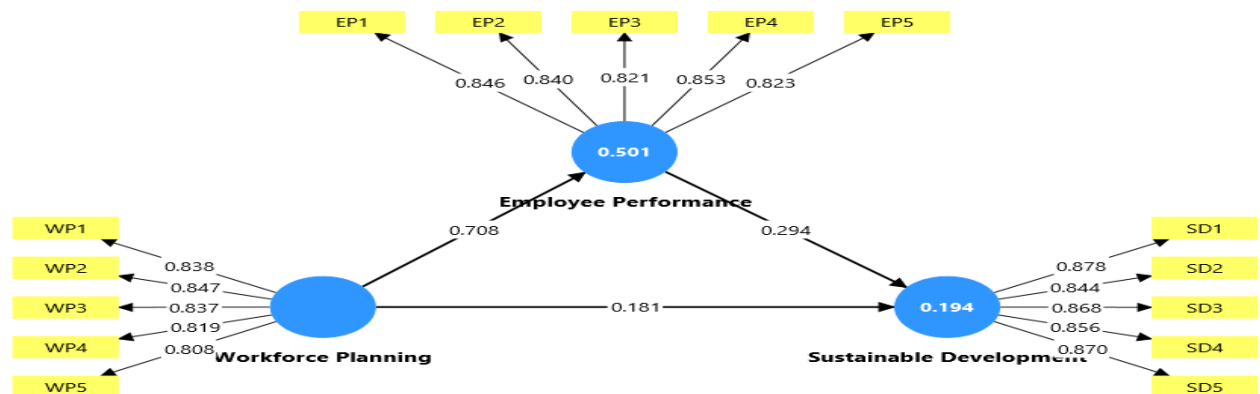


Figure 3: Structural Model

Source: SmartPLS v. 4.1.1.7 Output (2024)

This model demonstrates that **effective workforce planning significantly enhances employee performance** (explaining 50% of variance), which in turn **contributes to sustainable development goals**. However, workforce planning also has a **direct effect** on sustainability, suggesting it works through multiple pathways. Organizations should prioritize workforce planning as a strategic tool for improving both employee performance and achieving sustainable development objectives. **The model supports a mediation hypothesis with strong workforce planning and performance link and moderate performance and sustainability link.**

Table 4: Path Coefficient for Direct Relationship

Path Relationship	B	Sample mean (M)	Standard deviation (STDEV)	T statistics ((O/STDEV))	P-values	Decision
Workforce Planning -> Sustainable Development	0.181	0.183	0.057	3.164	0.002	Reject the null hyp.
Workforce Planning -> Employee Performance	0.708	0.709	0.03	23.788	0.000	Reject the null hyp.
Employee Performance -> Sustainable Development	0.294	0.296	0.059	5.003	0.000	Reject the null hyp.

Source: SmartPLS v. 4.1.1.7 Output (2024)

Table 4 presents the results of the structural model assessing the direct relationships among workforce planning, employee performance, and sustainable development. The findings show that workforce planning has a positive and statistically significant effect on sustainable development ($\beta = 0.181$, $T = 3.164$, $p < 0.05$), indicating that effective workforce planning contributes directly to sustainable development outcomes. This paper aligned with the study of Eze (2024) who found that effective manpower forecasting and replacement planning significantly improved productivity and reduced attrition in Nigerian public hospitals.

In addition, workforce planning exerts a strong and significant influence on employee performance ($\beta = 0.708$, $T = 23.788$, $p < 0.05$), suggesting that improvements in workforce planning substantially enhance employee performance. This study is consistent with the study conducted by Okwurume and Igwe (2025) who established a strong relationship between workforce utilization and employees' task performance in tertiary healthcare institutions. They emphasized that aligning employee capacity with organizational goals increases efficiency and patient satisfaction.

Furthermore, employee performance has a positive and significant effect on sustainable development ($\beta = 0.294$, $T = 5.003$, $p < 0.05$), implying that higher levels of employee performance promote sustainable development. This suggests that workforce planning enhances sustainable development by improving employee performance. This study agrees with the study conducted by Otoo (2024). Employee performance significantly influenced organizational effectiveness

Table 5: Path Coefficient for Indirect Relationship

Path Relationship	B	Sample	Standard	T statistics (O/STDEV)	P- values	Decision
		mean (M)	deviation (STDEV)			
Workforce Planning -> Employee Performance -> Sustainable Development	0.208	0.21	0.042	4.904	0.000	Reject the null hyp.

Source: SmartPLS v. 4.1.1.7 Output (2024)

Table 5 presents the result of the mediation analysis examining the indirect effect of workforce planning on sustainable development through employee performance. The findings indicate that the indirect path is positive and statistically significant ($\beta = 0.208$, $T = 4.904$, $p < 0.05$). This paper is consistent with the study of Otoo (2024). The results further indicate that

employee performance mediates the relationship between HRM practices and organizational effectiveness.

Table 6: Coefficient of Determination (R²)

Dependent Variables	R-square	R-square adjusted
Employee Performance	0.501	0.50
Sustainable Development	0.194	0.19

Source: SmartPLS v. 4.1.1.7 Output (2024)

Table 6 presents the R-square values for the dependent variables, which indicate the proportion of variance explained by the predictors in the model. **Employee performance** has an R² of **0.501** (adjusted R² = 0.500), meaning that **50.1% of the variance in employee performance** is explained by workforce planning. This reflects a **moderate level of explanatory power**. **Sustainable development** has an R² of **0.194** (adjusted R² = 0.190), indicating that **19.4% of the variance in sustainable development** is explained by workforce planning and employee performance. this represents a **weak to moderate explanatory power**, suggesting that other factors may also influence sustainable development.

Table 7: Collinearity Statistics

Variables	Variance Inflation Factor (VIF)
Employee Performance	2.006
Workforce Planning	2.006

Source: SmartPLS v. 4.1.1.7 Output (2024)

Table 7 presents the **Variance Inflation Factor (VIF)** values for the predictor variables to assess **multicollinearity**. **Employee performance** and **workforce planning** both have a VIF of **2.006**, which is well below the commonly used threshold of 5 (or 10 in some references). This indicates that **multicollinearity is not a concern**, and the predictor variables are not highly correlated with each other.

Table 8: Model Fit

Fit Indices	Saturated model	Estimated model
SRMR	0.046	0.046
d_ ULS	0.249	0.249
d_ G	0.104	0.104
Chi-square	235.564	235.564
NFI	0.937	0.937

Source: SmartPLS v. 4.1.1.7 Output (2024)

Table 8 presents the **goodness-of-fit indices** for the PLS-SEM model. The results indicate that the model fits the data well: The **Standardized Root Mean Square Residual (SRMR)** is **0.046**, which is below the recommended threshold of 0.08, indicating a good model fit. The **d_ULS (0.249)** and **d_G (0.104)** values are low, suggesting minimal discrepancy between the observed and estimated covariance matrices. The **Chi-square value** is 235.564, which supports the overall model fit in combination with other indices. The **Normed Fit Index (NFI)** is **0.937**, exceeding the 0.90 threshold, indicating an excellent fit between the proposed model and the data.

Table 9: Predictive Relevance (Q^2)

Dependent Variables	Q^2_{predict}	RMSE	MAE
Employee Performance	0.498	0.713	0.57
Sustainable Development	0.14	0.934	0.691

Source: SmartPLS v. 4.1.1.7 Output (2024)

Table 9 presents the **predictive relevance (Q^2)** and **prediction errors (RMSE and MAE)** for the dependent variables assessed using the PLS-SEM blindfolding procedure: **Employee performance** has a **Q^2_{predict} of 0.498**, which is well above 0, indicating **moderate predictive relevance** of the model for this variable. The **RMSE (0.713)** and **MAE (0.57)** values suggest reasonably small prediction errors. **Sustainable Development** has a **Q^2_{predict} of 0.14**, which is positive but lower, indicating **weak to moderate predictive relevance** for this construct. The RMSE (0.934) and MAE (0.691) values suggest slightly higher prediction errors compared to employee performance.

Knowledge Implication

Theoretical implication: This study extends the Resource-Based View theory by **empirically demonstrating that workforce planning functions as a strategic human resource capability** that creates sustained competitive advantage in healthcare settings. The findings confirm that **human resources, when strategically planned and deployed, constitute rare, valuable, and inimitable organizational resources** that drive both performance and sustainable development.

Practical Implication: **Prioritize workforce planning systems** including systematic recruitment, strategic deployment, skills inventory management, and succession planning to maximize the performance improvement potential identified.

Policy Implication: Mandate strategic workforce planning as a requirement for Federal Medical Center accreditation and annual performance evaluations, ensuring all FMCs develops comprehensive workforce plans aligned with national health sustainability goals.

Conclusion and Recommendation

The study findings reveal that workforce planning significantly influences both employee performance and sustainable development. Specifically, workforce planning has a strong direct effect on employee performance, a moderate direct effect on sustainable development, and indirectly promotes sustainable development through improved employee performance. Additionally, employee performance itself significantly enhances sustainable development. These results highlight that effective workforce planning is a key driver for improving employee outcomes and advancing sustainable development in organizations, with employee performance serving as an important mediating mechanism.

Recommendations

The following recommendations were made:

1. Organizations should develop comprehensive workforce planning strategies that align staffing, skills development, and succession planning with long-term sustainable development goals to enhance employee performance and overall organizational outcomes.
2. Implement performance management systems that regularly assess, monitor, and reward employee performance, as high-performing employees directly contribute to achieving sustainable development objectives.
3. Provide targeted training programs and professional development opportunities to improve employee skills and competencies, ensuring that workforce planning translates effectively into performance improvements.
4. Incorporate sustainable development objectives into workforce planning, job design, and performance appraisal systems, so that both workforce planning and employee performance actively drive organizational sustainability.

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WORKPLACE BULLYING AND EMPLOYEE PERFORMANCE IN TERTIARY
HEALTHCARE INSTITUTIONS IN NIGERIA: MEDIATING ROLE OF JOB
ALIENATION

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Abstract

This study investigates the effect of workplace bullying on employee performance in tertiary healthcare institutions in Nigeria, with a specific focus on the mediating role of job alienation. The study is theoretically anchored on the Conservation of Resources Theory, which posits that individuals strive to acquire, protect, and retain valued resources, and that stressors such as workplace bullying deplete these resources, resulting in negative work attitudes and reduced performance. This theoretical perspective is particularly relevant to the Nigerian tertiary healthcare context, where intense job demands, resource constraints, and hierarchical work structures may heighten exposure to bullying behaviours and feelings of alienation among health workers. A quantitative research design was adopted in particular survey and cross-sectional research designs, and data were collected from tertiary healthcare workers in Zamfara State and Kaduna State through an online questionnaire shared electronically. Judgmental and snowball sampling techniques were employed to reach respondents across different professional categories, and out of the questionnaires distributed, 239 were correctly filled and returned, forming the basis for analysis. The structured instrument measured workplace bullying, job alienation, and employee performance using validated scales adapted to the healthcare setting. The hypothesised relationships were analysed using SmartPLS 4, given its suitability for mediation analysis and complex structural models. The results revealed that workplace bullying had a negative and significant effect on employee performance, indicating that sustained exposure to negative acts undermines healthcare workers' effectiveness. Additionally, job alienation negatively affected employee performance. Furthermore, job alienation partially mediated the relationship between workplace bullying and employee performance, suggesting that bullying fosters psychological detachment, estrangement, powerlessness, and loss of work meaning, which subsequently impair performance. The study recommended that management should enforce the employee discrimination act to punish erring employees to serve as deterrent to others and ensure a workplace free of bullying.

Keywords: Workplace Bullying, Employee Performance, Job Alienation, Conservation of Resources Theory.

1.0 INTRODUCTION

The healthcare sector, particularly tertiary healthcare institutions, represents a critical pillar of Nigeria's socio-economic development, as it is central to human capital development, disease management, and overall national productivity. Tertiary healthcare institutions provide specialized medical services, advanced diagnostics, research, and training of healthcare professionals, thereby strengthening the entire health system (Ogunleye et al., 2022). Through effective service delivery, these institutions contribute to improved population health outcomes, reduced mortality, and enhanced quality of life, which are essential for sustainable economic growth (Cerf, 2023). However, the effectiveness and efficiency of tertiary healthcare institutions are largely dependent on the performance, commitment, and psychological well-being of their employees, including doctors, nurses, pharmacists, and allied health professionals (Aluko, 2023). Healthcare employees are responsible for direct patient care, clinical decision-making, and administrative coordination, making their performance indispensable to patient safety and service quality (Ogunleye et al., 2022).

Despite the strategic importance of healthcare workers, evidence suggests that many employees in Nigeria's healthcare sector operate under adverse psychosocial work conditions. One of the most pervasive of these conditions is workplace bullying, which involves repeated exposure to negative acts such as intimidation, verbal abuse, humiliation, social exclusion, and misuse of power (Okikiola and Ruth, 2022). In hierarchical and high-pressure environments such as tertiary hospitals, bullying behaviours may be normalized or overlooked, thereby increasing employees' vulnerability (Cerf, 2023). Studies have shown that workplace bullying is associated with reduced job satisfaction, emotional exhaustion, psychological distress, and declining job performance among healthcare workers (Alam et al., 2025; Olanipekun & Ikechukwu, 2022; Pradhan & Joshi, 2019.). In Nigeria, where healthcare systems are already strained by inadequate funding, staff shortages, and high patient loads, the presence of bullying further undermines employee effectiveness and organizational outcomes (Onwuakagba, et al., 2025; Afolaranmi, et al., 2022).

Employee performance in healthcare settings is particularly sensitive to psychosocial stressors because healthcare work demands sustained attention, emotional labour, teamwork, and ethical responsibility. When healthcare workers are subjected to bullying, their ability to concentrate, collaborate, and deliver quality care may be significantly impaired (Afolaranmi, et al., 2022). Beyond its direct effect on performance, workplace bullying may also trigger deeper psychological reactions that weaken employees' connection to their work. One such reaction

is job alienation, characterized by feelings of powerlessness, meaninglessness, isolation, and self-estrangement from one's job role (Erdem, 2021; Ojeleye, Bakare, Umar, & Ojeleye, 2021). In tertiary healthcare institutions, persistent exposure to bullying can erode employees' sense of professional identity and purpose, leading them to emotionally withdraw from their work and organization.

Empirical evidence showed independently that workplace bullying is linked to job alienation (Hazratian, Mohajeran & Ghalavandi, 2021) and job alienation to poor employee performance (Al-Khazrajy, 2025; Aslan, 2025 & Nodehi, 2020). Alienated healthcare workers may comply minimally with job requirements, show reduced initiative, and disengage from patient-centred care, thereby compromising service quality and organizational effectiveness. However, despite growing global interest in workplace bullying and employee outcomes, limited empirical attention has been paid to the psychological mechanisms through which bullying affects performance in Nigeria's tertiary healthcare sector. In particular, the mediating role of job alienation remains underexplored, especially within the Nigerian context where cultural norms, power distance, and institutional rigidities may intensify both bullying experiences and alienation responses.

Based on this identified gap, the present study examines the effect of workplace bullying on employee performance in tertiary healthcare institutions in Nigeria, with specific emphasis on the mediating role of job alienation. By integrating these constructs, the study seeks to provide a more nuanced understanding of how bullying translates into performance deficits, thereby offering evidence-based insights for healthcare administrators, policymakers, and stakeholders committed to improving employee well-being and performance in Nigeria's tertiary healthcare system.

2.0 REVIEW OF RELATED LITERATURE AND THEORETICAL FAREMWORK

This section reviews related literature on concepts employee performance, workplace bullying, job alienation, empirical review and theoretical framework.

Concept of Employee Performance

Employee performance has been widely conceptualized in management and organizational behaviour literature as the extent to which an employee successfully carries out job-related tasks and responsibilities in line with organizational goals. Gravina, Nastasi and Austin (2021), defined it as observable behaviours that are relevant to organizational objectives and can be measured in terms of proficiency, efficiency, and effectiveness in task execution. Similarly, Çalışkan and Köroğlu (2022), viewed employee performance as a multidimensional construct comprising task performance and contextual performance, emphasizing not only core job

duties but also behaviours that support the social and psychological work environment. According to Hajiali et al. (2022), it reflects how well individuals apply their skills, knowledge, and competencies to achieve expected work outcomes within a specified period. Celik et al. (2023), described employee performance as a set of behaviours and actions under the control of the employee that contribute to organizational goals, highlighting the behavioural rather than outcome-based nature of performance. In a related perspective, Muchiri (2022), opined that it is the degree to which employees effectively manage work demands, adapt to changing job requirements, and sustain productivity over time. Saidin, Wan, Halim and Solihah (2024) conceptualized employee performance as the cumulative value of an employee's contributions to organizational effectiveness, incorporating quality of work, productivity, and interpersonal effectiveness. Aguilera, De Massis, Fini and Vismara (2019), explained it as the measurable results and behaviours associated with achieving work objectives, shaped by individual effort, motivation, and the work environment. Ultimately, these definitions portray employee performance as a dynamic and multidimensional construct encompassing task execution, behavioural contributions, adaptability, and the effective utilization of individual capabilities to support organizational success.

Concept of Workplace Bullying

Workplace bullying has been conceptualized by scholars as a persistent and systematic pattern of negative behaviours directed at an employee, which creates a hostile and harmful work environment. Misra and Sharma (2022), viewed workplace bullying as repeated exposure to negative acts such as harassment, social exclusion, or verbal abuse, where the target finds it difficult to defend themselves due to a power imbalance. Similarly, Popa (2025), described it as psychological terror involving frequent and long-term hostile behaviours aimed at humiliating, isolating, or undermining an individual at work. According to Vijayakumar and Rajagopal (2024), workplace bullying refers to a situation in which one or more individuals are subjected to abusive conduct that threatens their dignity, well-being, and professional competence. Parker (2022), viewed it as repeated, health-harming mistreatment manifested through verbal abuse, offensive conduct, and deliberate work sabotage. Okikiola and Ruth (2022) conceptualized it as a social process embedded within organizational structures, where power asymmetries and enabling conditions allow aggressive behaviours to persist over time. Okolie (2021), noted that workplace bullying as a form of interpersonal mistreatment characterized by persistence, escalation, and the victim's perceived inability to stop the negative acts. More recently, Gaur and Sinha. (2025), described it as a chronic workplace stressor involving systematic mistreatment that erodes employees' psychological health, work

attitudes, and performance. Collectively, these definitions emphasized that workplace bullying is not a single incident but a sustained pattern of hostile behaviours rooted in power imbalance, with serious consequences for employees and organizations.

Concept of Job Alienation

Job alienation also known as job estrangement has been described in scholarly literature as a psychological state in which employees experience a sense of disconnection, powerlessness, and loss of meaning in relation to their work. Ojobu (2024), conceptualized job alienation as a multidimensional construct encompassing powerlessness, meaninglessness, normlessness, isolation, and self-estrangement, reflecting an individual's separation from the work process and its outcomes. Ghaleb (2024) perceived it as a condition in which workers feel little control over their tasks and perceive their work as monotonous and lacking intrinsic value. It represents a cognitive state of psychological detachment from one's job, arising when work fails to satisfy important personal needs or expectations (Ojeleye et al., 2021). Mehta (2022), described it as an employee's perception of being emotionally and psychologically distanced from work roles, coworkers, and organizational goals. Aslan (2025), viewed job alienation as a negative work attitude characterized by disengagement, reduced involvement, and a weakened sense of purpose at work. Elshaer, Azazz, Mansour and Fayyad (2025), described job alienation as the extent to which employees feel disconnected from the content of their work and perceive limited autonomy, recognition, and significance in their roles. To Salloukh, Younis, Al-mousawi and Zeid (2025), it is a chronic psychological condition in which employees experience diminished identification with their work, leading to withdrawal behaviours and impaired performance. These definitions collectively, present job alienation as a complex psychological phenomenon marked by detachment, loss of control, and reduced work meaning, with significant implications for employee attitudes and performance.

REVIEW OF EMPIRICAL STUDIES

This section reviews empirical studies to establish the relationship between workplace bullying and employee performance, as well as job alienation and employee performance, and examines the mediating role of job alienation, which informed the formulation of the hypotheses presented below.

Workplace Bullying and Employee Performance

Empirical evidence across diverse sectors and national contexts consistently demonstrates that workplace bullying is a significant determinant of employee performance, with predominantly negative outcomes. Alam et al. (2025), using a robust SEM–ANN approach among garment industry workers in Bangladesh, found that workplace bullying significantly and negatively

affected job performance, underscoring bullying as a critical productivity-reducing factor in labour-intensive industries. Similarly, Naseer, Safdar, Sami and Javed (2025), reported a negative relationship between workplace bullying and employee productivity in Pakistan's banking sector, with person-related bullying exerting a particularly strong detrimental influence on performance. In the Nigerian context, Olanipekun and Ikechukwu (2022), established that workplace bullying and harassment had a negative and significant effect on academic staff performance, highlighting the pervasive impact of bullying across professional and educational settings. Likewise, Pradhan and Joshi (2019), found a negative association between workplace bullying and employee performance among hospital workers in Nepal, indicating that bullying undermines effectiveness in healthcare environments where performance is crucial. Although Singh et al. (2025), observed only a weak positive correlation between workplace bullying and job performance in Malaysia's public sector possibly reflecting contextual, cultural, or coping dynamics the overall body of evidence strongly supports the conclusion that workplace bullying generally diminishes employee performance. Collectively, these studies affirm workplace bullying as a harmful organizational stressor that disrupts employee functioning across industries, while also revealing contextual variations that justify further investigation into mediating and moderating mechanisms, particularly within underexplored settings such as Nigeria's tertiary healthcare sector. Hence, the study hypothesized that:

H1_a: Workplace bullying significantly predicts employee performance in tertiary healthcare institutions in Nigeria.

Job Alienation and Employee Performance

Plethora of studies have provided consistent evidence that job alienation exerts a negative and significant effect on employee performance. Al-khazrajy (2025), demonstrated among healthcare employees in Iraq that job alienation significantly reduced job performance, while also showing that ergonomic conditions could buffer this negative effect, underscoring the practical importance of work design. Similarly, Aslan (2025), found that work alienation significantly undermined nurses' job performance in Türkiye, highlighting the vulnerability of healthcare professionals to alienation-related performance decline. In the education sector, Nodehi, (2020), reported that job alienation significantly reduced the performance of high school teachers in Iran, confirming that alienation impairs effectiveness even in non-clinical professional roles. From a financial and governance perspective, Salloukh et al. (2025), revealed that job alienation negatively and significantly affected the financial performance of Lebanese banking institutions, extending the implications of alienation beyond individual

outcomes to organizational performance indicators. Earlier evidence from Abdel-Qader (2017), in Jordan's industrial sector further confirmed a statistically significant negative relationship between work alienation and job performance, particularly through reduced autonomy, task variety, and managerial support. Collectively, these studies strongly affirm job alienation as a pervasive organizational problem that consistently diminishes employee and organizational performance across healthcare, education, banking, and industrial settings, thereby justifying its examination as a critical explanatory mechanism in performance-related research. Thus, the study hypothesized that:

H1_b: Job alienation significantly predicts employee performance in tertiary healthcare institutions in Nigeria.

Job Alienation as a Mediator

A plethora of empirical studies have demonstrated the relevance of job alienation as an important mediating mechanism through which different organizational factors influence employee attitudes and behaviours in the workplace. For instance, Erdem (2021), established that alienation from work mediated the relationship between leadership styles and counterproductive work behaviour, showing that democratic leadership reduced counterproductive behaviour partly by lowering employees' feelings of alienation, whereas autocratic leadership intensified alienation and negative behavioural outcomes. Similarly, Ojeleye, Bakare, Umar and Ojeleye (2021), found that job alienation significantly and partially mediated the relationship between fear of COVID-19 and employees' turnover intentions among state-owned hospital workers in Zamfara State, Nigeria, indicating that heightened fear translated into withdrawal intentions largely through employees' psychological detachment from their jobs. Earlier evidence by Sulu, Ceylan and Kaynak (2010), further confirmed the mediating role of work alienation in the relationship between organizational injustice and organizational commitment, as perceptions of injustice fostered alienation, which in turn weakened commitment. In a related study, Ceylan and Sulu (2010), reported that work alienation partially mediated the relationship between procedural injustice and job stress, demonstrating that unfair procedures heightened stress levels through employees' sense of powerlessness and detachment. Collectively, these studies underscore job alienation as a robust psychological mechanism that translates adverse leadership practices, injustice, and environmental stressors into negative employee outcomes, thereby justifying its use as a mediator in organizational research. Therefore, the study hypothesized that:

H2: Job alienation mediates the relationship between workplace bullying and employee performance in tertiary healthcare institutions in Nigeria.

Conservation of Resources Theory

Conservation of Resources (COR) Theory was proposed by Stevan E. Hobfoll in 1989 and later expanded in his subsequent works (Hobfoll, 2001; Hobfoll, Halbesleben, Neveu, & Westman, 2018) to explain how individuals respond to stress and strain in demanding environments. The central assumption of the theory is that people are motivated to acquire, protect, and retain valuable resources, which may include tangible resources (such as time, money, and physical energy), personal characteristics (such as self-esteem and resilience), social resources (such as support and respect), and condition resources (such as job security and status). According to Hobfoll, stress occurs when these resources are threatened, lost, or when individuals invest resources without adequate returns. Later proponents and contributors to the theory further emphasized the idea of resource loss spirals, where initial resource depletion makes individuals increasingly vulnerable to further losses, and resource gain cycles, where access to supportive environments helps individuals recover and build resilience. COR Theory has been widely applied in organizational and occupational research to explain burnout, disengagement, reduced performance, and withdrawal behaviours in high-pressure work settings.

Within the context of this study on workplace bullying and employee performance in Nigeria's tertiary healthcare sector, Conservation of Resources Theory provides a compelling explanatory framework. Workplace bullying represents a persistent threat to healthcare workers' key resources, including emotional energy, professional dignity, social support, and perceived control over work activities. Continuous exposure to bullying behaviours gradually depletes these resources, creating psychological strain and undermining employees' ability to remain engaged and productive. As resources are lost, healthcare workers may experience job alienation, manifesting as emotional withdrawal, powerlessness, and reduced identification with their work, which in turn negatively affects performance. In resource-constrained tertiary healthcare institutions already characterized by staff shortages, heavy workloads, and limited infrastructural support the effects of bullying are likely to be intensified, accelerating resource loss spirals. Thus, COR Theory helps to explain how workplace bullying indirectly reduces employee performance through job alienation, offering a nuanced understanding of stress processes and reinforcing the need for organizational practices that protect employees' resources and promote supportive work environments in healthcare settings.

METHODOLOGY

The study adopted a quantitative research design comprising survey and cross-sectional research designs, and data were collected from tertiary healthcare workers in Zamfara State and Kaduna State, Nigeria, using an online questionnaire distributed through shared electronic

links. Judgmental and snowball sampling techniques were employed to reach respondents across different professional categories within tertiary healthcare institutions, and a total of 239 correctly completed questionnaires were returned and used for analysis. The structured instrument measured workplace bullying, job alienation, and employee performance using validated scales adapted to the healthcare context. Preliminary diagnostic analyses were conducted, including checks for outliers, multicollinearity, normality, and non-response bias, while common method bias was addressed through both procedural and statistical remedies to enhance data credibility. Harman's one factor was used statistically to test common method bias. The results indicated that the first factor explained 10% of the total variance, which is below the 50% threshold, suggesting that common method bias is not a serious concern in this study. Additionally, several procedural remedies were implemented to minimize the possibility of common method bias. These included assuring respondents of the confidentiality and anonymity of their responses, rephrasing complex statements for clarity, and eliminating double-barreled items from the questionnaire. These measures were adopted to reduce potential response bias and improve the accuracy of the collected data. The hypothesised relationships, including the mediating effect of job alienation, were analysed using SmartPLS 4, which is suitable for mediation analysis and complex structural models.

Measures

Validated scale from previous studies were adapted and used in the study; measured on 4-point Likert scale ranging from 4-strongly agree to 1-strongly disagreed. Workplace bullying was measured employing 4item workplace bullying scale employed by Javed et al. (2023) with reported Cronbach's alpha of 0.853. Sample of item is "I have been ignored or excluded from group activities at work". Job alienation was assessed using 10-item work alienation measures of Hirschfeld and Feild, (2000). with a reported Cronbach alpha coefficient of 0.80 suggesting high internal consistency of the scale. A sample of the item is; "I don't enjoy work; I just put in my time to get paid". Lastly, employee performance was conducted using the 10-item short version of the work performance scale developed by Azevedo, Queiroga and Valentin (2021). An example of the item used is "I take initiatives to enhance my performance at work." The Cronbach's alpha for the scale is stated to be 0.91.

DATA ANALYSIS AND PRESENTATION

Data were analysed using structural equation model specifically smart-pls 4 comprising of measurement and structural models.

Assessment of Measurement Model

The measurement model was carried out to assess the outer loadings, reliability and validity of the exogenous and endogenous variable. Hair et al. (2022), recommended the retention of outer loading of ≥ 0.7 and elimination of loading below. However, owing to the practicability of attaining loading < 0.7 , Hair et al. (2022), suggested the retention of loadings $0.4 \geq 0.6$ dependent on the influence of the loading benchmark on the convergent validity and construct reliability. Meanwhile, Hulland (1999), recommended the retention of outer loadings ≥ 0.5 . Hence, based on the recommendation of Hulland (1999), the study retained outer loadings of ≥ 0.5 . In accordance with the recommendation, the outer loadings EP3, EP7, EP10, JA2, JA7, and WB3 were discarded owing to their loadings being below the 0.5 threshold. The convergent validity was assessed using Average Variance Extracted. Fornell and Larcker (1981), argued that an AVE score of 0.5 or above indicates the convergent validity of a study's construct. In Table 1 below, the values of AVE for the constructs are all > 0.5 threshold. Hence, the convergent validity is confirmed. Meanwhile, the reliability of the constructs were considered using Cronbach's alpha and convergent validity. Sekaran and Bougie (2016), posited that for a construct to be considered reliable, the Cronbach's alpha should be > 0.7 . Similar threshold is also employed for convergent validity. In Table 1 below, the Cronbach's alpha and convergent validity are all > 0.7 benchmark. Thus, the study's constructs are consistent. In additionally, the coefficient of determination (R^2) which explains the variance in the endogenous variable that is explained by the endogenous variables is 0.25 or 25%. According to Hair et al. (2022), the coefficient of determination is small.

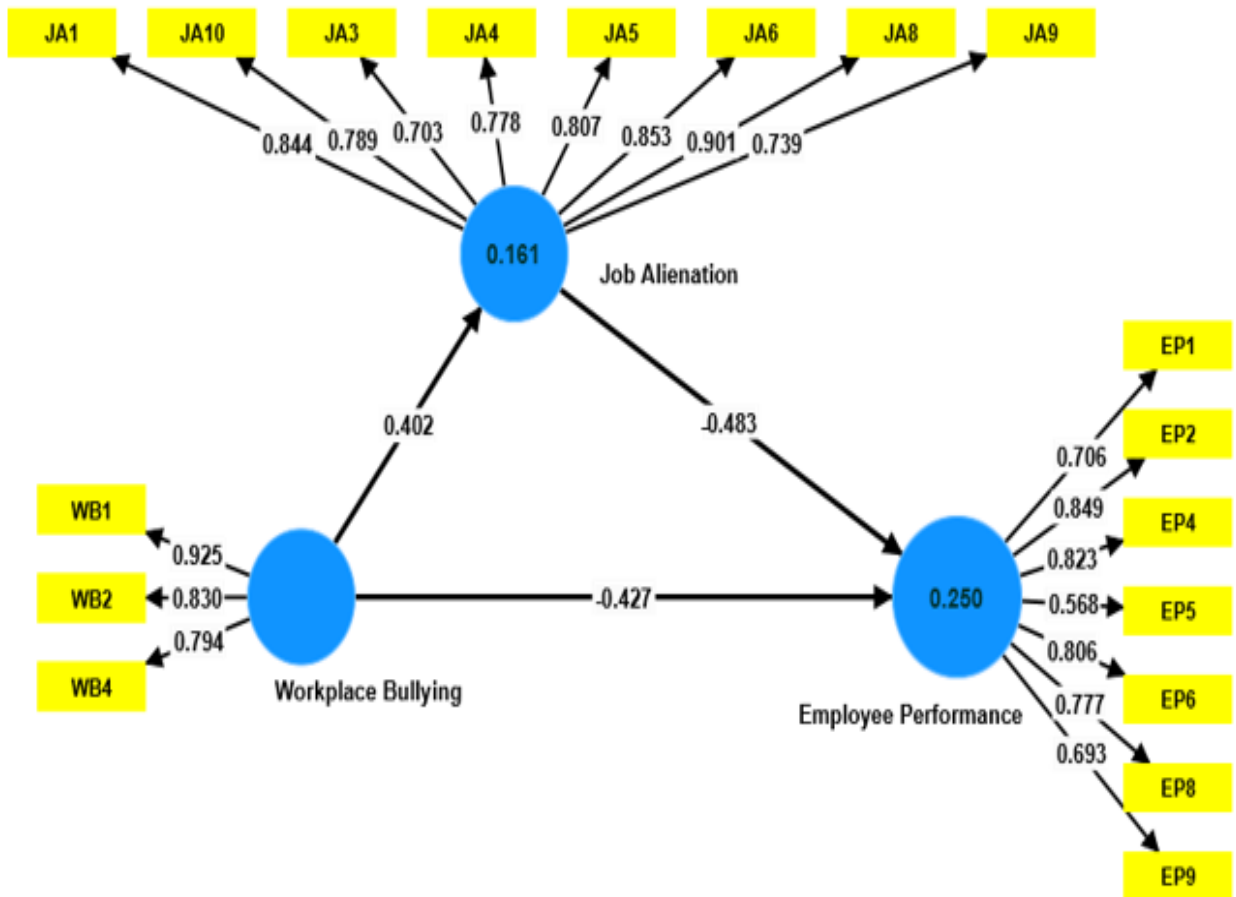


Figure 1: Smart-PLS Algorithm

Table 1: Outer Loadings, Reliability and Convergent Validity

Constructs	Items	Loadings	Cronbach's	Composite	AVE	Decision
			Alpha	Reliability		
Employee						
Performance	EP1	0.706	0.871	0.900	0.565	Accepted
	EP2	0.849				
	EP4	0.823				
	EP5	0.568				
	EP6	0.806				
	EP8	0.777				
	EP9	0.693				
Job Alienation	JA1	0.844	0.923	0.936	0.646	Accepted
	JA10	0.789				
	JA3	0.703				

	JA4	0.778				
	JA5	0.807				
	JA6	0.853				
	JA8	0.901				
	JA9	0.739				
Workplace Bullying	WB1	0.925	0.827	0.887	0.725	Accepted
	WB2	0.830				
	WB4	0.794				

Source: Systemization of Smart-PLS output, 2026

The Heterotrait-Monotrait (HTMT) correlation ratio was used to assess the discriminant validity of the components. Henseler et al. (2015), endorsed the HTMT ratio since the Fornell and Larcker Criterion and cross-loading fail to identify a deficiency in discriminant validity among conceptions with loadings between 0.65 and 0.85. Concurrently, researchers have proposed two standards (Kline, 2011; Henseler et al., 2021). Kline (2011), offered a stringent criterion of <0.85 for conceptually unique constructs, whereas Henseler et al. (2015) recommended a more lenient threshold of <0.90 for conceptually equivalent constructs. Consequently, given that the research constructs namely employee performance, workplace bullying and job alienation are conceptually unique, a threshold of less than 0.85 was used. Consequently, since the correlations across constructs are below 0.85, divergent validity is thus affirmed (See: Table 2 below).

Table 2: *Heterotrait-Monotrait (HTMT) Ratio of Correlations Discriminant Validity*

Constructs	Employee Performance	Job Alienation	Workplace Bullying
Employee Performance			
Job Alienation	0.376		
Workplace Bullying	0.313	0.410	

Source: Systemization of Smart-PLS output, 2026

Assessment of Structural Model

The structural model was conducted to analyse the direct and the hypothesised relationship between job alienation, workplace bullying and employee performance.

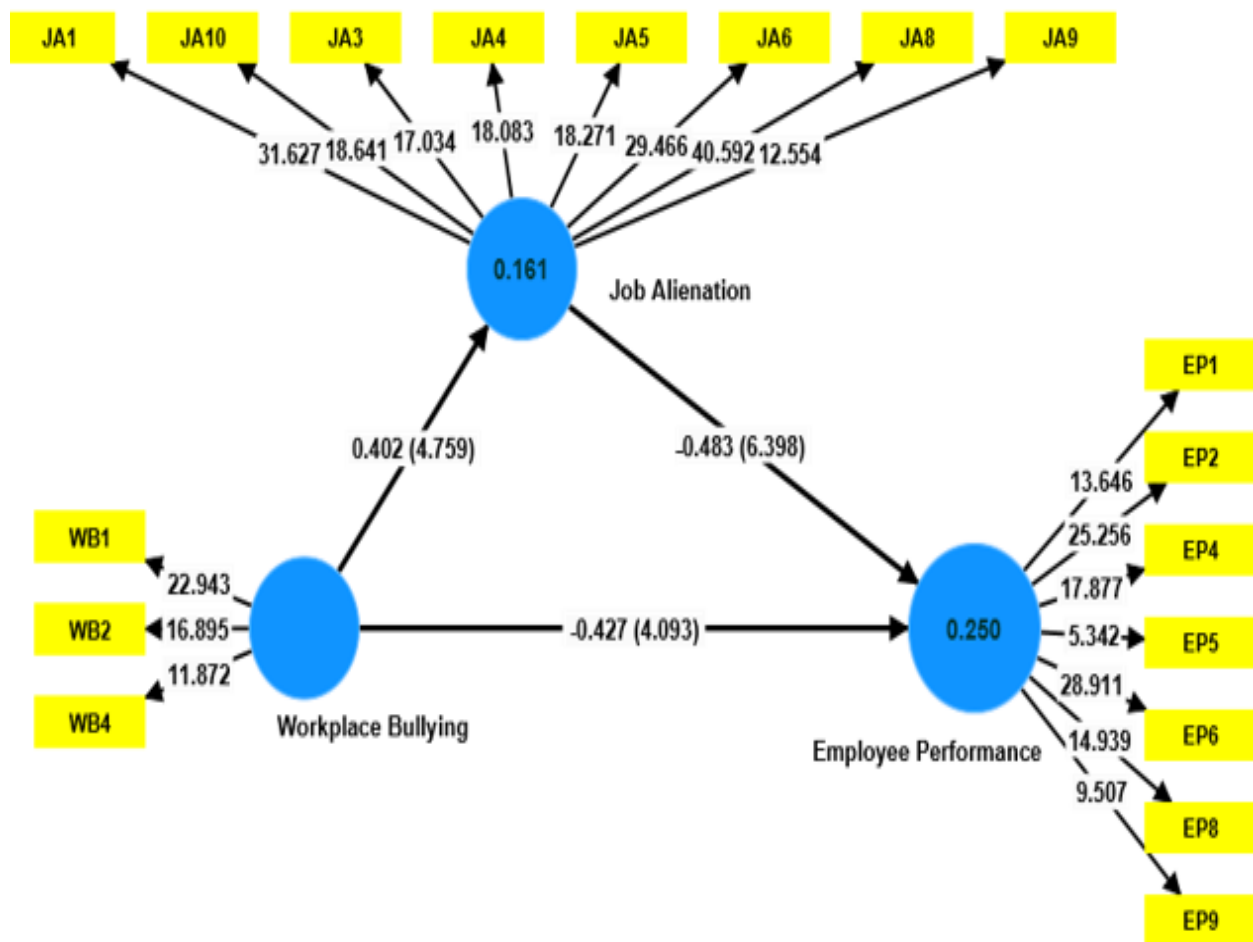


Figure 2: Bootstrapping

Table 4: Hypothesised Relationship

Hypotheses	Relationship	Beta	Standard Deviation (STDEV)	T Statistics	P Values	Confidence Interval		Decision
						2.50%	97.50%	
H1_a	Workplace Bullying -> Employee Performance	- 0.427	0.104	4.093	0.000			Supported
H1_b	Job Alienation -> Employee Performance	- 0.483	0.076	6.398	0.000			Supported
H2	Workplace Bullying -> Job Alienation -> Employee Performance	- 0.194	0.053	3.631	0.000	-0.083	-0.382	Supported

$$Q^2 = 0.127$$

The results of the structural model in Table 4 revealed that workplace bullying has a significant and negative effect on employee performance ($\beta = -0.427$, $T = 4.093$, $p < 0.000$), indicating that healthcare workers who experience bullying are less likely to perform effectively in their roles. Thus, H1a is there by supported. Similarly, job alienation was found to have a significant and negative effect on employee performance ($\beta = -0.483$, $T = 6.398$, $p < 0.000$), suggesting that employees who feel psychologically detached, powerless, or disconnected from their work exhibit reduced performance levels. Hence, H1b is also supported. These findings imply that both workplace bullying and job alienation independently undermine employee performance in tertiary healthcare institutions.

The mediation analysis (H2) further demonstrated that job alienation significantly mediates the relationship between workplace bullying and employee performance ($\beta = -0.194$, $T = 3.631$, $p < 0.000$, 95% CI $[-0.382, -0.083]$). This indicates that workplace bullying indirectly reduces employee performance by increasing employees' feelings of alienation from their jobs. However, because the direct effect of workplace bullying on employee performance (H1a) remains significant alongside the indirect effect, job alienation serves as a partial mediator rather than a full mediator in this relationship.

In addition, the Q^2 value of 0.127 indicates the model's predictive relevance. Based on Cohen's (1988) benchmarks, Q^2 values of 0.02, 0.15, and 0.35 represent small, medium, and large predictive relevance, respectively. The obtained Q^2 value falls slightly below the medium threshold, suggesting that the model demonstrates a small predictive capacity in explaining variations in employee performance among tertiary healthcare workers in Nigeria. This supports the adequacy and practical usefulness of the proposed model in explaining performance outcomes within the study context.

Discussions

Workplace bullying has consistently shown to exert a negative and significant effect on employee performance by undermining employees' psychological, emotional, and cognitive resources needed for effective work functioning. This is consistent with previous studies of Alam et al., 2025; Naseer et al., 2025; Olanipekun & Ikechukwu, 2022; Pradhan & Joshi, 2019. Persistent exposure to bullying behaviours such as intimidation, verbal abuse, humiliation, and social exclusion creates a hostile work environment that elevates stress levels and distracts employees from core job tasks, thereby reducing efficiency and accuracy (Olanipekun &

Ikechukwu, 2022). As employees expend considerable energy coping with fear, anxiety, and emotional distress, their ability to concentrate, make sound decisions, and maintain productivity diminishes, leading to observable declines in performance (Pradhan & Joshi, 2019). Empirical studies further indicate that bullied employees are more likely to display withdrawal behaviours, reduced commitment, and minimal role compliance, all of which negatively affect individual and organizational outcomes (Alam et al., 2025). In high-demand sectors such as healthcare, where teamwork, attention to detail, and emotional labour are essential, the performance consequences of bullying are even more pronounced, as strained interpersonal relationships and loss of trust disrupt collaboration and service quality. Moreover, workplace bullying weakens employees' motivation and sense of professional identity, increasing the likelihood of errors, absenteeism, and reduced service delivery (Naseer et al., 2025). Ultimately, the significant negative relationship between workplace bullying and employee performance highlights bullying as a critical organizational stressor that erodes employees' functional capacity and underscores the need for proactive managerial interventions to safeguard performance and workplace well-being.

Job alienation was found to have a negative and significant effect on employee performance by weakening employees' psychological attachment, motivation, and sense of purpose at work. This is in tandem with previous studies of Al-khazrajy, 2025; Aslan, 2025; Nodehi, 2020; Salloukh et al., 2025. When employees experience feelings of powerlessness, meaninglessness, isolation, and self-estrangement, they become emotionally detached from their job roles, which reduces their willingness to invest effort and initiative in work tasks (Al-khazrajy, 2025). Alienated employees are more likely to engage in surface-level compliance rather than genuine commitment, resulting in lower productivity, reduced work quality, and diminished problem-solving capacity (Nodehi, 2020). Empirical evidence suggests that job alienation impairs concentration and intrinsic motivation, making it difficult for employees to sustain performance, especially in complex and demanding work environments (Aslan, 2025; Nodehi, 2020;). In sectors such as healthcare, where performance relies heavily on emotional engagement, collaboration, and professional responsibility, alienation can translate into poorer service delivery, increased errors, and weakened teamwork. Moreover, job alienation often encourages withdrawal behaviours such as absenteeism, lateness, and reduced discretionary effort, all of which further undermine performance outcomes (Salloukh et al., 2025). Overall, the significant negative relationship between job alienation and employee performance underscores alienation as a critical psychological condition that erodes employees' capacity to

perform effectively and highlights the importance of fostering meaningful, inclusive, and empowering work environments.

The finding showed that job alienation partially mediated the relationship between workplace bullying and employee performance indicates that bullying affects performance both directly and indirectly through employees' job estrangement. This result suggests that while workplace bullying independently undermines performance by creating stress, fear, and disruption, it also triggers feelings of powerlessness, meaninglessness, and emotional withdrawal that further weaken employees' capacity to perform effectively. Exposure to repeated bullying behaviours gradually erodes employees' sense of belonging and professional identity, leading them to become estranged from their roles, which in turn reduces motivation, commitment, and discretionary effort. In high-pressure work environments like healthcare, this mediating process is particularly salient, as estranged employees may disengage emotionally while still remaining physically present, resulting in minimal compliance rather than optimal performance.

Implications

Theoretically, the findings reinforce the explanatory strength of Conservation of Resources (COR) Theory by demonstrating how workplace bullying operates as a chronic stressor that depletes employees' valuable psychological and social resources, ultimately impairing performance. The partial mediating role of job alienation aligns with COR's resource loss spiral, showing that sustained bullying erodes employees' sense of control, meaning, and professional identity, which accelerates withdrawal and performance decline. By empirically linking workplace bullying, job alienation, and employee performance within a tertiary healthcare context, the study extends the application of COR Theory to understudied environments and highlights job alienation as a critical mechanism through which resource loss translates into negative work outcomes.

Practically, the findings underscore the need for healthcare administrators and managers to proactively address workplace bullying as a performance-related issue rather than merely an interpersonal problem. Management should implement clear anti-bullying frameworks, promote supportive leadership behaviours, and strengthen reporting and grievance mechanisms to protect employees' psychological resources. Additionally, interventions such as counselling services, peer support systems, and job redesign initiatives can help reduce feelings of alienation by restoring employees' sense of purpose, autonomy, and belonging, thereby enhancing performance and service quality in tertiary healthcare institutions.

From a policy standpoint, the study highlights the importance of institutional and sector-wide regulations that safeguard healthcare workers from psychosocial hazards. Policymakers and regulatory bodies should enforce workplace policies that explicitly prohibit bullying, mandate employee well-being programs, and integrate psychosocial risk management into healthcare accreditation standards. At a broader level, government investment in workforce development, staffing adequacy, and supportive work environments can help reduce systemic stressors that enable bullying and alienation, ultimately strengthening employee performance and the overall effectiveness of Nigeria's tertiary healthcare system.

Conclusion and Recommendations

Workplace bullying is a critical psychosocial challenge that significantly undermines employee performance in Nigeria's tertiary healthcare institutions, both directly and indirectly through job alienation. The findings demonstrate that persistent exposure to bullying behaviours erodes healthcare workers' psychological resources, fosters feelings of powerlessness and detachment, and weakens their connection to their work, which ultimately impairs performance. The partial mediating role of job alienation highlights that while bullying independently diminishes performance, its detrimental impact is further intensified when employees become psychologically disengaged from their roles. Grounded in Conservation of Resources Theory, the study underscores how sustained resource loss within hostile work environments translates into reduced effectiveness among healthcare professionals. Overall, the study emphasizes the urgent need for healthcare administrators and policymakers to address workplace bullying and job alienation through supportive leadership, protective policies, and employee-centered interventions to enhance performance and ensure the delivery of quality healthcare services in Nigeria.

Based on the findings, the study made the following recommendations:

Based on the findings of the study, the following recommendations are proposed:

1. Management of tertiary healthcare institutions should establish and strictly enforce comprehensive anti-bullying policies, including clear definitions of unacceptable behaviours, confidential reporting channels, and prompt disciplinary procedures. This will help reduce the prevalence of workplace bullying and protect employees' psychological resources, thereby improving performance.
2. Healthcare administrators should introduce employee-support initiatives such as counselling services, mentoring programs, participatory decision-making, and job enrichment practices to restore employees' sense of meaning, autonomy, and

belonging. Reducing job alienation will weaken the negative pathway through which bullying affects performance.

3. Hospital leaders and supervisors should receive regular training on ethical leadership, conflict management, and supportive supervision, while regulatory bodies should monitor compliance with workplace well-being standards. Strengthening leadership capacity will help create a supportive work climate that discourages bullying, minimizes alienation, and enhances employee performance.

Limitations and Suggestions for Further Study

This study has some limitations that should be considered when interpreting the findings. First, the use of judgmental and snowball sampling techniques limits the generalizability of the results, as the respondents were selected based on accessibility and referral rather than random selection, which may introduce selection bias. Second, data were collected through self-report questionnaires, which may be susceptible to common method bias, social desirability bias, and respondents' subjective perceptions, despite the procedural and statistical remedies applied. Third, the scope of the study was geographically limited to tertiary healthcare workers in Zamfara and Kaduna States, which may not fully capture the experiences of healthcare employees in other regions of Nigeria with different institutional structures, cultural dynamics, or security conditions. Lastly, the study examined only job alienation as a mediating variable, thereby providing a focused but limited explanation of the psychological mechanisms through which workplace bullying influences employee performance.

Future research should address these limitations to deepen understanding of workplace bullying and employee outcomes in healthcare settings. Scholars are encouraged to adopt probability sampling techniques and expand the study to other states or conduct nationwide or cross-sectoral studies to enhance generalizability. Longitudinal or mixed-method approaches could also be employed to reduce the limitations associated with cross-sectional self-report data and to capture changes in employee experiences over time. Furthermore, future studies should explore additional mediating variables such as emotional exhaustion, depersonalization, work disengagement, and insomnia to provide a more comprehensive explanation of the pathways linking workplace bullying and employee performance. Examining multiple mediators simultaneously or testing moderated mediation models would offer richer theoretical and practical insights into managing psychosocial risks in healthcare organizations.

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EFFECT OF ALTRUISM AND WORKPLACE SPIRITUALITY ON LECTURERS'
PERFORMANCE IN HIGHER EDUCATION INSTITUTIONS: ROLE OF
EMPLOYEE DEDICATION

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Abstract

Higher education institutions (HEIs) in Nigeria operate under severe structural constraints, including chronic underfunding, high workloads, insecurity, and limited institutional support, which undermine lecturers' performance. In such resource constrained environments, reliance on extrinsic incentives alone is insufficient, necessitating greater attention to intrinsic and non-financial drivers of performance. Drawing on Social Exchange Theory and Engagement Theory, this conceptual paper develops an integrated framework to explain how altruism and workplace spirituality influence lecturers' performance, with employee dedication proposed as a critical moderating mechanism. Altruism, conceptualized as discretionary prosocial behavior, and workplace spirituality, defined by meaningful work, connectedness, and value alignment are theorised as key relational and meaning based resources that enhance Lecturing effectiveness, research productivity, and community service delivery. However, their performance effects are argued to be contingent upon lecturers' level of dedication, characterized by enthusiasm, pride, and psychological commitment to work. The paper advances four theoretically grounded propositions that articulate the direct effects of altruism and workplace spirituality on lecturer performance, as well as the moderating role of employee dedication in strengthening these relationships. By integrating these constructs within a single conceptual model, the study addresses an important gap in the higher education and human resource management literature, where altruism and workplace spirituality have largely been examined in isolation. The paper contributes theoretically by extending Social Exchange and Engagement perspectives to the context of Nigerian HEIs and offers practical insights for administrators and policymakers seeking low cost, sustainable strategies to enhance academic staff performance in challenging institutional contexts. The model provides a foundation for future empirical testing and theory development in emerging economies.

Keywords: Altruism; Workplace Spirituality; Employee Dedication; Lecturer Performance.

Introduction

Employee job performance has remained a major challenge in organizational administration. Consequently, adopting effective strategies to motivate employees in order to enhance job

performance and strengthen organizational competitiveness continues to be a central objective of organizations. Employee motivation encompasses deliberate efforts to encourage workers to exert greater effort and deliver higher levels of performance (Mahfouz, Halim, Ayu, & Alias, 2022). Therefore, employees are more motivated when they perceive that their jobs provide outcomes they value. Employees constitute a fundamental source of organizational benefit and competitive advantage; thus, the effectiveness and efficiency of an organization largely depend on the productivity and viability of its workforce. Moreover, employee performance contributes significantly to organizational development and productivity (Mahfouz et al., 2022).

Tertiary Institutions are foundational to socio economic development through its contributions to knowledge production, human capital formation, and community service (Peiró et al., 2020). Accordingly, lecturers' performance in teaching, research, and community engagement directly influences student learning outcomes, institutional reputation, and national development.

In Nigeria, higher education institutions (HEIs) are mandated to drive national development through teaching, research, innovation, and community service. However, the operational realities confronting these institutions, particularly in the northern region, present significant barriers to sustained academic performance. HEIs in Yobe State, for instance, grapple with chronic underfunding, insecurity associated with Boko Haram insurgency, inadequate infrastructure, limited research support, academic staff shortages, and persistent job-related stressors that undermine lecturers' capacity to perform optimally (Haruna, 2025). These challenges often manifest in reduced teaching quality, diminished research productivity, low staff morale, and weakened institutional competitiveness.

Globally, research indicates that approximately 62% of employees are not committed and remain disengaged from their work (Gallup, 2024). In Nigeria, the proportion of disengaged employees rises to 63%, exceeding the global average (Gallup, 2024), and this figure includes employees in tertiary institutions. This trend signals a serious commitment crisis within Nigerian organizations, characterized by absenteeism, corruption, lackadaisical attitudes, bullying, ostracism, and insolence (Abimbola, Adeyemi, & Olatunji, 2020). These issues are particularly pronounced in government owned institutions, including public tertiary institutions.

Under such structural constraints, employee performance enhancing mechanisms that rely heavily on financial incentives are often unsustainable. As a result, growing scholarly attention has shifted toward non-financial, intrinsic drivers of employee performance that can operate

effectively within resource constrained environments. Despite this shift, many Nigerian HEIs continue to experience systemic challenges such as strike action, chronic underfunding, infrastructural deficits, high student staff ratios, frequent industrial actions, and outward migration of academic staff, all of which undermine lecturers' performance (Haruna, 2025).

Against this backdrop, this study focuses on two underexplored Variables; **altruism and workplace spirituality** as predictors of lecturers' performance. Altruism, commonly conceptualized as a dimension of organizational citizenship behavior, refers to discretionary, other oriented actions such as mentoring colleagues, assisting students, or voluntarily undertaking additional responsibilities beyond formal job requirements (Podsakoff et al., 1990; Olowookere et al., 2021). In academic contexts, altruistic behaviors promote knowledge sharing, reduce instructional bottlenecks, and strengthen collegial support, thereby enhancing teaching quality and research collaboration (Amponsah-Tawiah et al., 2021; Olowookere et al., 2021).

Workplace spirituality, distinct from religiosity, refers to employees' experience of meaningful work, connectedness with others, and alignment between personal and Institutional values (Ashmos & Duchon, 2000; Milliman et al., 2003). For lecturers, workplace spirituality may manifest as a sense of calling to educate, commitment to a shared departmental mission, and the integration of personal values with scholarly activities. Empirical evidence suggests that workplace spirituality enhances employee well-being, commitment, and discretionary effort factors that sustain teaching quality and scholarly productivity even in resource limited Institutions (Akinlade & Shadare, 2022; Okpara & Agu, 2021).

However, the presence of altruism and workplace spirituality does not automatically translate into uniformly high performance. Altruistic behaviors such as mentoring junior colleagues, supporting students beyond formal classroom interactions, and engaging in community service are relatively common among Nigerian academics. For instance, Olowookere et al. (2021) found that altruism among Lecturers in Nigerian HEIs was strongly associated with organizational citizenship behavior and student centered teaching practices. Similarly, Akinlade and Shadare (2022) reported that workplace spirituality enhanced employees' sense of meaning and belonging, which subsequently improved job commitment. These findings suggest that altruism and workplace spirituality function as intrinsic motivators capable of sustaining performance despite systemic challenges. Nevertheless, variations in performance outcomes among lecturers with similar prosocial and spiritual orientations indicate the presence of important boundary conditions which is lecturers dedication.

Drawing on Social Exchange Theory (SET) and Engagement Theory, this paper develops a conceptual model in which altruism and workplace spirituality serve as relational and meaning-based resources that foster lecturers' performance, while employee dedication is proposed as a moderating variable that conditions these effects. SET posits that supportive actions and meaningful social interactions generate reciprocal obligations and positive work behaviors (Blau, 1964; Cropanzano & Mitchell, 2005). Engagement Theory further explains how personal engagement particularly dedication characterized by enthusiasm, pride, and a strong sense of purpose enables employees to mobilize motivational resources necessary for performance enhancement (Kahn, 1990).

Although altruism and workplace spirituality are increasingly recognized as positive organizational forces, their effects on performance are not uniform across individuals. Some lecturers who exhibit strong altruistic tendencies or experience deep meaning at work still struggle to sustain consistent performance. This observation raises a critical question: under what motivational conditions do altruism and workplace spirituality exert the strongest influence on lecturer performance? Therefore, engagement Theory suggests that employee dedication may strengthen lecturers' capacity to translate prosocial orientation and spiritual meaning into improved job performance.

By combining altruism, workplace spirituality, and dedication within a single conceptual framework, this study addresses an important gap in the literature, as these constructs have largely been examined in isolation. For example, Rini, Isthofaina, and Febrianti (2024), in a study of government employees in Yogyakarta, Indonesia, found that workplace spirituality had a positive and significant effect on employee performance. However, limited attention has been given to how altruism and workplace spirituality jointly influence performance, particularly in higher education contexts characterized by severe resource constraints.

Therefore, a critical conceptual gap exists regarding how altruism and workplace spirituality interact to shape lecturers' performance and how employee dedication moderates these relationships in the context of HEIs. Addressing this gap is essential not only for advancing theoretical understanding but also for providing higher education administrators with practical, low cost strategies for enhancing lecturer performance in challenging institutional environments.

Literature Review

Altruism

Altruistic individuals are prone to share knowledge willingly, managers can respond by assigning specific roles to altruistic individuals in teams and giving them tasks in which they

would collaborate and engage in socialisation with others (Marsikova, 2023). Altruism is a stimulating factor in sharing behaviour and positively influences the quantity and quality of shared knowledge (Choi et al. 2020). Altruism is a prosocial behavior characterized by voluntary actions intended to help others without expectation of external rewards (Podsakoff et al., 1990). Within organizational settings, altruism forms a core dimension of Organizational Citizenship Behavior (OCB), promoting cooperation, mutual assistance, and supportive interpersonal interactions. In higher education institutions (HEIs), altruistic behaviors include helping colleagues manage academic tasks, mentoring junior staff, providing informal guidance to students, and voluntarily participating in departmental activities. These behaviors foster academic cohesion, reduce bottlenecks in instructional delivery, and improve the functioning of academic units (Olowookere et al., 2021).

Altruism enhances trust and collegial relationships, creating a supportive climate conducive to improved lecturer performance (Haruna, 2025). Such environments facilitate knowledge sharing, collaborative research, and constructive peer engagement activities central to academic productivity. In contexts where resources are limited, as in many Nigerian HEIs, altruistic interactions become even more significant because lecturers often rely on one another to compensate for systemic shortfalls such as high student staff ratios or inadequate administrative support. This aligns with Social Exchange Theory, which suggests that prosocial acts generate reciprocity, trust, and heightened commitment, ultimately stimulating improved performance (Cropanzano & Mitchell, 2005).

Workplace Spirituality

According to Adeji and Wolo (2024), in a typical Nigerian workplace today, spirituality is perceived as a key stimulant that can inspire workers (employees) to be in a positive state of mind to deliver on their daily tasks assigned to them. Workplace Spirituality has been defined as “those aspects of the workplace (individual, group, or organization) that promote individual feelings of satisfaction through transcendence” Mohammad, Juman, Hammed, Nhat, Norazuwa, and Ali (2023). Workplace spirituality emphasizes the value of meaningful work, which redefines performance Nimmi, Binoy, Joseph, & Suma (2022). Employees in the modern workplace are looking for jobs that fulfill their values and advance a larger goal, not just mundane tasks. Workplace spirituality reflects employees’ perception of meaningful work, inner life, interconnectedness with colleagues, and alignment between personal values and organizational purpose (Ashmos & Duchon, 2000; Milliman et al., 2003).

In HEIs, workplace spirituality manifests when lecturers view their academic roles as purposeful contributions to society, experience strong collegial relationships, and feel

emotionally connected to their departments and institutions. Workplace spirituality enhances employees' sense of belonging, reduces emotional exhaustion, and reinforces ethical commitment (Haruna, 2025). These attributes are critical in academic environments where lecturers juggle multiple responsibilities under challenging conditions.

Given the resource constraints and emotional demands characteristic of many Nigerian HEIs, workplace spirituality becomes a powerful, low-cost mechanism for fostering commitment, enthusiasm, and sustained performance. The absence of such meaning-based resources often leads to disengagement, burnout, and diminished academic productivity.

Employee Dedication

According to Ratih and Eny (2021) dedication describes as the enthusiasm of employees at work and proud of the work done and the company that they worked for and those inspirations and challenges that employee's feel. Employee dedication is a core component of work engagement, characterized by enthusiasm, vitality, pride, and a strong sense of purpose toward one's job (Schaufeli et al., 2002). Dedicated employees invest emotional and cognitive energy into their work, persist through challenges, and exhibit higher levels of commitment and performance. Dedication as a critical personal resource enabling lecturers to remain motivated despite environmental stressors such as workload and resource shortages (Haruna, 2025). Dedication shapes how individuals interpret and react to workplace conditions, those who feel deeply committed to academic work are more likely to transform prosocial interactions and meaningful environments into tangible performance gains.

Dedication functions as a motivational amplifier. According to Engagement Theory, dedicated employees immerse themselves fully in their tasks, maintain strong identification with their roles, and remain resilient during adversity (Kahn, 1990). In HEIs, dedicated lecturers demonstrate perseverance in teaching large classes, pursuing research despite limited funding, and contributing to institutional committees without direct rewards. Several studies support the performance enhancing role of dedication. Bakker and Demerouti (2017) found that work engagement predicts higher task performance and proactive behavior across diverse job settings. In academic environments, dedicated lecturers tend to exhibit higher research productivity, better classroom management, and stronger student mentorship (Ouweneel et al., 2013).

Lecturer Performance

Lecturer performance encompasses teaching effectiveness, research output, administrative responsibilities, student mentorship, and community engagement. According to Goga, Y., M., Idris, M., B., Isah, I., M., (2025), the performance of Lecturers is assessed through their

capacity to effectively discharge their responsibilities in the area of teaching, research, and community service. Ogunode et al, (2020) opined that Lecturers primary duties include teaching at different levels, conducting research, engaging with community service, supervising students, and contributing to curriculum development. According to Haruna, (2025) identifies teaching quality, research productivity, and service contributions as the central indicators of lecturer performance within HEIs. Existing literature shows those lecturers with strong intrinsic motivation and engagement exhibit higher-quality instruction, better student outcomes, and more consistent scholarly output (Ogunyemi & Mabekoje, 2021). Organizational psychologists also argue that intangible factors such as purpose, collegiality, and commitment foster discretionary effort essential for meeting academic expectations in under-resourced environments (Bakker & Demerouti, 2017). Given these dynamics, conceptualizing lecturer performance through the lens of altruism, workplace spirituality, and dedication offers a more holistic understanding of how non-financial resources can sustain academic excellence. This approach is particularly relevant for HEIs that cannot rely heavily on extrinsic incentives due to financial constraints.

Theoretical Foundations

This paper is underpinned by **Social Exchange Theory (SET)** and supported by **Engagement Theory** to explain how altruism and workplace spirituality influence lecturer performance, and how dedication strengthens these relationships. The Social Exchange Theory maintains that employees' actions are motivated by the belief that their employers will reciprocate through rewards, benefits, opportunities, and other positive outcomes (Aselage & Eisenberger, 2003). Therefore, the implication of this theory on this study is that where lecturers believe that their institution cares about their well-being and growth, they respond by trying to discharge their obligations to the organizations by becoming more committed. In other words, if lecturers believe that their contributions toward the organization' growth will generate an equivalent return from the institution, they tend to be more committed and their performance will intensify. Engagement theory explains moderation by arguing that Employee with dedication invests more emotional and cognitive resources, strengthening the translation of values and behaviours into performance. But low dedication reduces effort, persistence, and result in a deficiency of meaningful progress. Altruistic lecturers are inclining to help colleagues, mentor and contribute to the academic community and also create latent motivation not guaranteed performance. Workplace spirituality as a meaning resource, such meaningfulness is a psychological condition for engagement, but meaning alone is insufficient unless employees are emotionally invested, this is where dedication becomes critical.

Altruism and Lecturer Performance

According to study by Amponsah-Tawiah et al. (2021) found that prosocial helping behaviors among academic staff enhance collaborative research output. Also Oluwafemi (2020) reported that altruistic lecturers exhibit higher engagement and better teaching effectiveness. Ahri et, al. (2023) their study revealed that there was a significant positive effect of altruism on the performance of Kassi-Kassi Health Center staff. These findings collectively position altruism as a key non-financial resource for lecturer performance, especially where formal institutional supports are weak or inconsistent. Fauzianti & Natuna (2020) opined that there is a significant positive relationship between altruism on Performance. According to Hendrawan & Sucahyawati (2017) their study revealed that altruism has no positive effect on supervisor's performance

Altruism contributes to a collaborative academic culture where lecturers voluntarily assist one another, share pedagogical resources, supervise students collectively, and support departmental activities. These prosocial behaviors reduce workload pressures, increase knowledge exchange, and foster an environment conducive to academic excellence (Olowookere et al., 2021). In HEIs, where formal support systems may be inadequate or inconsistent, altruism becomes a critical relational resource that enhances task performance, research productivity, and student engagement.

Workplace Spirituality and Lecturer Performance

Research indicates that spiritually meaningful work environments promote intrinsic motivation, job satisfaction, and engagement factors strongly associated with teaching quality and research productivity (Akinlade & Shadare, 2022). According to Rini, Isthofaina & Febrianti (2024) conducted study with government staff respondents in Yogyakarta, Indonesia, their result reveal that workplace spirituality has a positive and significant effect on employee performance ($\beta=0.318$, $p<0.05$). Another study, explores the influence of spirituality in the workplace on employee performance through the examination of meaningful work, a sense of community, and organizational trust. Utilizing a quantitative approach with questionnaire distribution among academicians from business and management faculty at a local university in Selangor was conducted, Sharifah, Sabian, & Nawi, (2024).

However, workplace spirituality had a significant positive relationship with employee productivity in manufacturing firms in Anambra State, Njideka & Nnabugwu, (2024). Also this study is limited to manufacturing firms while current study will look at the education sector and combination of variables for effective performance. When lecturers perceive their work as meaningful, they demonstrate greater perseverance, creativity, and willingness to support

institutional goals. From a SET perspective, employees who experience meaning, respect, and interconnectedness in their work context reciprocate through enhanced performance. Therefore, workplace spirituality is theorized as a second positive predictor of lecturer performance.

Employee Dedication as a Moderator Variable

Engagement theory explains moderation by arguing that lecturer with high dedication invests more emotional and cognitive resources, strengthening the translation of values and behaviours into effective lecturer performance. Low dedication reduces effort, persistence, and meaning making. Altruistic lecturers are inclining to help colleagues, mentor and contribute to the academic community and also create latent motivation not guaranteed performance. Workplace spirituality as a meaning resource, such meaningfulness is a psychological condition for engagement, but meaning alone is insufficient unless lecturers are emotionally invested, this is where dedication becomes critical.

Conceptual Framework Development

This study adopts a conceptual research design aimed at developing a theoretically grounded framework that explains how altruism and workplace spirituality influence lecturer performance, with employee dedication as a moderating variable. Conceptual papers do not rely on primary data collection; rather, they synthesize existing theories and empirical studies to construct new theoretical relationships and propositions.

The framework presented in this study was developed through a systematic and focused review of relevant literature in the fields of organizational behavior, human resource management, and higher education management. Key scholarly databases including Google Scholar, Scopus-indexed journals, and major academic publishers were consulted to identify peer-reviewed studies related to altruism, workplace spirituality, employee dedication, and employee performance. Priority was given to studies published in reputable journals and those grounded in established theoretical perspectives.

The literature review process followed three analytical stages. First, conceptual identification, where key constructs relevant to lecturer performance were identified from prior studies. Second, theoretical integration, where Social Exchange Theory (Blau, 1964; Cropanzano & Mitchell, 2005) and Engagement Theory (Kahn, 1990) were synthesized to explain the relational and motivational mechanisms linking the constructs. Third, proposition formulation, where logical relationships between altruism, workplace spirituality, employee dedication, and lecturer performance were derived from existing empirical evidence and theoretical arguments.

Based on this process, a conceptual model was developed to illustrate the proposed relationships among the variables. Altruism and workplace spirituality are positioned as independent variables, lecturer performance as the dependent variable, and employee dedication as a moderating variable that strengthens the relationships between the predictors and performance outcomes.

The resulting framework provides a theoretically integrated foundation for future empirical investigation, particularly within higher education institutions operating in resource-constrained environments such as those found in Northern Nigeria. By systematically synthesizing existing knowledge, the study contributes to theory development while offering a structured basis for subsequent quantitative or mixed-method research.

Figure 1 Conceptual Frameworks for the study

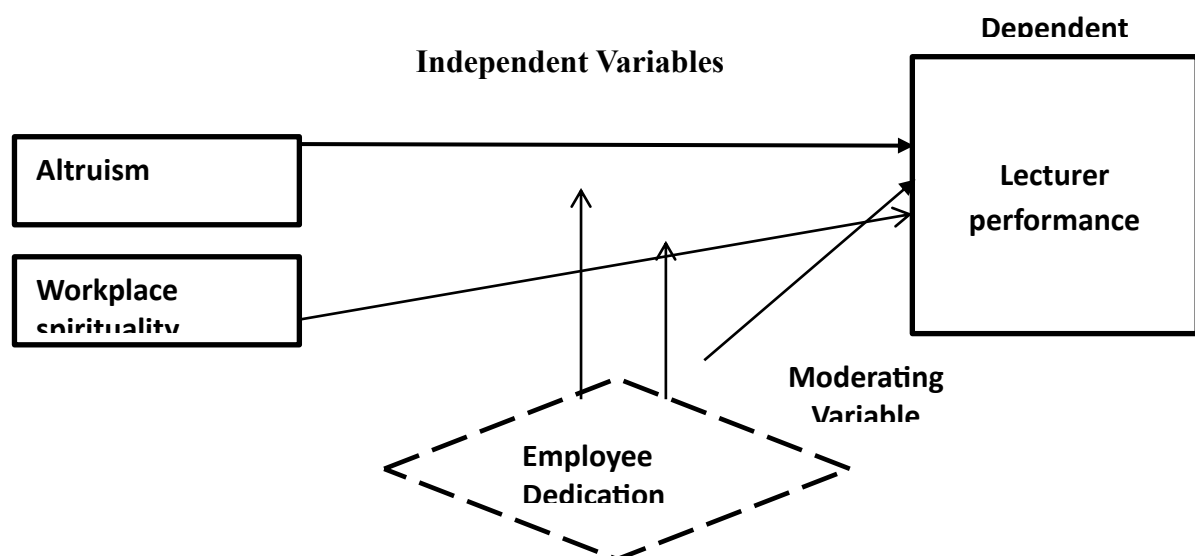


Figure 1 presents the conceptual framework of the study. Altruism and workplace spirituality are proposed as independent variables that directly influence lecturer performance. Employee dedication is introduced as a moderating variable that strengthens the relationships between altruism and lecturer performance as well as between workplace spirituality and lecturer performance. The model integrates insights from Social Exchange Theory and Engagement Theory to explain how relational and meaning-based resources translate into improved academic performance.

Propositions

The conceptual model developed in this paper integrates altruism, workplace spirituality, and employee dedication to predict lecturer performance within higher education institutions (HEIs). Based on the theoretical arguments anchored in Social Exchange Theory (SET) and

Engagement Theory, the following propositions articulate the expected relationships among the constructs. In line with the purpose of a conceptual paper, these are **propositions** intended to guide future empirical testing and stimulate theoretical advancement.

Proposition i: Altruism positively influences lecturer performance in higher education institutions.

This proposition follows from SET, which posits that prosocial helping behaviors generate reciprocity, trust, and collegiality leading to improved performance outcomes (Blau, 1964; Cropanzano & Mitchell, 2005). Altruistic lecturers voluntarily offer academic assistance, collaborate with colleagues, and support institutional activities, thereby enhancing teaching quality, research productivity, and administrative effectiveness (Olowookere et al., 2021). In resource-constrained HEIs, where formal support may be limited, altruism becomes a critical relational resource that sustains academic functions (Haruna, 2025).

Proposition ii: Workplace spirituality enhances lecturer performance by fostering meaning, connectedness, and intrinsic motivation.

According to Rini, Isthofaina & Febrianti (2024) conducted study with government staff respondents in Yogyakarta, Indonesia, their result reveal that workplace spirituality has a positive and significant effect on employee performance. Another study, explores the influence of spirituality in the workplace on employee performance through the examination of meaningful work, a sense of community, and organizational trust. Utilizing a quantitative approach with questionnaire distribution among academicians from business and management faculty at a local university in Selangor was conducted Sharifah, Sabian, & Nawi, (2024).

Proposition iii: Employee dedication moderates positive relationship between altruism and lecturer performance, such that the relationship is stronger when dedication is high.

Engagement Theory asserts that dedication characterized by enthusiasm, pride, and psychological commitment amplifies the effects of positive workplace resources on performance (Bakker & Demerouti, 2017). Lecturers who are both altruistic and dedicated are more likely to reciprocate supportive interactions with higher levels of teaching effectiveness, research activity, and service engagement.

Proposition iv: Employee dedication moderates the relationship between workplace spirituality and lecturer performance, such that the relationship is stronger when dedication is high.

Workplace spirituality provides meaning and emotional nourishment, but such resources translate into performance only when employees possess sufficient motivational energy. Dedication enhances lecturers' capacity to utilize spiritually meaningful experiences such as

alignment with institutional mission or feelings of community to overcome workload pressures and remain committed to their academic responsibilities.

Collectively, these propositions outline a theoretically integrated model in which: altruism and workplace spirituality serve as key psychological resources, dedication functions as a motivational amplifier, and lecturer performance emerges as the observable outcome of these interactions. These propositions provide a structured basis for future empirical testing and further theory development within the domain of human resource management in HEIs.

Theoretical Implications

The conceptual model developed in this paper provides several important theoretical contributions to the literature on lecturer performance, prosocial behavior, workplace spirituality, and employee dedication. By integrating altruism, workplace spirituality, and dedication within a unified framework, the model advances existing theories and opens new pathways for scholarly inquiry, especially within the context of higher education institutions (HEIs) in developing economies.

Practical Implications

The conceptual model developed in this paper not only advances theoretical understanding but also offers practical guidance for higher education institution (HEI) administrators and policymakers seeking to enhance lecturer performance in resource constrained environments. By highlighting the role of altruism, workplace spirituality, and employee dedication, the model provides low cost, sustainable strategies for improving teaching, research, and service delivery. Altruism can be nurtured within HEIs through policies and practices that encourage collaboration, peer support, and voluntary engagement in departmental and institutional activities. Practical measures include: **Mentorship programs:** Pairing experienced lecturers with junior staff to facilitate knowledge transfer, skill development, and professional guidance (Olowookere et al., 2021). Workplace spirituality enhances lecturers' intrinsic motivation, meaning, and sense of belonging, which in turn strengthens performance. HEI administrators can implement the following strategies: **Value alignment and mission clarity:** Clearly communicate institutional values and align them with lecturers' academic and professional goals. **Community-building activities:** Encourage team meetings, retreats, and collaborative research forums to foster a sense of connectedness. And **Meaning focused professional development:** Design training and workshops that emphasize purpose-driven teaching, ethical scholarship, and societal impact.

Employee dedication acts as a performance influencer, ensuring that altruism and workplace spirituality translate into tangible academic outcomes. Administrators can promote dedication

by **providing autonomy and role clarity**, Allow lecturers' flexibility in teaching methods, research topics, and service roles to enhance ownership and pride. Secondly **recognition and symbolic rewards**, Celebrate achievements and milestones such as research publications or community service, to strengthen psychological commitment. And **Supportive work environment**: Create forums for feedback, coaching, and personal development that reinforce lecturers' sense of purpose and significance.

Implications for Policymakers

Policymakers in higher education can adopt supportive frameworks to encourage the adoption of these strategies at institutional levels. **Policy frameworks** should contain guidelines emphasizing relational and meaning-oriented work practices. Secondly, keep on organizing **training and capacity building programs** that promote altruism, workplace spirituality, and dedication among academic staff. Lastly **performance evaluation metrics**, should Incorporate qualitative indicators such as collaboration, mentorship, and engagement in addition to quantitative outputs.

Future Research Directions

While this paper presents a theoretically grounded conceptual model linking altruism, workplace spirituality, employee dedication, and lecturer performance, it also identifies several avenues for future research. These directions offer a roadmap for future research on empirical testing, exploration of mediators, cross contextual comparisons, and longitudinal or multi-level analyses will enhance the explanatory power of the conceptual model while guiding HEI administrators and policymakers in implementing effective strategies for lecturer performance improvement and provide practical insights into higher education performance, particularly in resource-constrained contexts such as Yobe State HEIs.

In conclusion, this paper focused on the importance of non-financial, intrinsic resources in sustaining academic performance. It provides a parsimonious yet robust conceptual framework that bridges theory and practice, offering both scholars and practitioners a strategic lens to understand, leverage, and enhances lecturer performance in higher education institutions in particular Yobe Nigeria operating under challenging conditions. By foregrounding altruism, workplace spirituality, and dedication, the model illuminates pathways for cultivating resilient, engaged, and high-performing academic staff, ultimately contributing to the broader development goals of the Nigerian higher education sector.

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**PROCEEDINGS OF THE INTERNATIONAL CONFERENCE & DOCTORAL
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**EMPLOYEE INVOLVEMENT CULTURE, KNOWLEDGE INFRASTRUCTURE
CAPABILITY AND ORGANIZATIONAL PERFORMANCE: A MODERATING
ANALYSIS FOR PENSION FUND ADMINISTRATORS IN NIGERIA**

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Abstract

This study examined the moderating effect of employee involvement culture on the relationship between knowledge infrastructure capability (information technology infrastructure, organizational structure, human resource capability) and organizational performance of Pension Fund Administrators in Nigeria. The study employed cross sectional survey design where simple random sampling method was adopted to collect data from one hundred and twenty six (126) staff of the PFAs through questionnaire administered to employees of Pension Fund Administrators in Nigeria. The study used Partial Least Squares – Structural Equation Modelling (PLS-SEM) Smart PLS 4.0 software to analyse the data. The result shows that knowledge infrastructure capability proxies namely; information technology infrastructure and human resource capability significantly and positively influence organizational performance of Pension Fund Administrators in Nigeria, with the exception of organizational structure which does not influence organizational performance. The study discovered that employee involvement culture significantly and positively moderates the relationship between human resource capability and organizational performance, and between organizational structure and organizational performance. However, the study revealed that employee involvement culture negatively and significantly moderates the relationship between information technology infrastructure and organizational performance of PFAs in Nigeria. Finally, the study recommends, among others, that Pension Fund Administrators should prioritize continuous training, professional development, and skills enhancement of employees. PFAs should foster employee involvement in decision-making, problem-solving, and operational improvements, particularly in human resource and structural matters. Such participatory practices enhance employee commitment and maximize the performance benefits of human capital and organizational structure.

Keywords: *Knowledge infrastructure capability, employee involvement culture, organizational performance*

1.0 Introduction

In an increasing competitive and knowledge driven global economy, organizational performance has become a major concern for both scholars and practitioners. Organizations strive to enhance efficiency, sustain growth and deliver value to the stakeholders through efficient utilization of knowledge based resources such as knowledge infrastructure capability (Al-Dmour, Al-Fawaz, & Al-Dmour, 2020). Organizational performance is the effectiveness and efficiency of both public and private organizations (Fatafta, Obeidat, Mohammed & Kanaan, 2019). Janadari (2020) suggested that inefficient utilization of resources could lead to poor performance of organizations.

The performance of PFAs through contribution of pension assets to economic development, measured by Gross Domestic Product (GDP), varies across countries. For example, according to the Organization for Economic Corporation and Development Report (2024), the Global Pension Statistics (GPS) showed that the contribution of pension asset to GDP in most selected jurisdictions of the OECD is insignificant, with Nigeria contributing (8.1%) which is below the contributions of other countries such as Kenya (13.7%), Papua New Guinea (16.9%), Malawi (17.1%) and Botswana (58.0%) due to poor performance of PFAs (OECD, 2024). Domestically, report of the National Pension Commission (2025) indicate that 368,911 RSA holders have transferred N1.77 trillion from one PFA to another from the commencement of transfer window due to poor performance of PFAs.

The extent of poor performance of the PFAs has necessitated the Head of the Civil Service of the Federation and Permanent Secretaries to request for presidential fiat to exit the scheme (Umar, 2023). Also, bills signed by President Muhammadu Buhari in 2017 and 2023 have excluded the personnel of the Nigerian Intelligence Agency (NIA) and National Assembly (NASS) service from Contributory Pension Fund (CPF) due to poor performance of the PFAs (Olafusi, 2023). Pension contributors and retirees have agitated against poor performance of PFAs in Nigeria (Iwunze, 2023). Moreover, the Senate directed its committee on Anti-Corruption and Financial Crimes to investigate the activities of PFA due to lack of performance (Salau, 2023). But pension reforms, modern strategies, knowledge infrastructural capability, culture and technological improvement may enhance performance of PFAs (Achadinha, 2020).

Employee involvement culture refers to the extent to which employees are empowered to participate in meaningful decision making, problem solving and continuous improvement in the organization (Lawler, 1996). Ologbo and Sofian (2013) revealed that employee involvement culture has been associated with organizational performance. From theoretical perspective, employee involvement culture aligns with Knowledge-Based View of firm which states that valuable rare and inimitable human resources can contribute to a sustained competitive advantage (Barney 1991).

Knowledge infrastructure capability enable organizations to create, store, share, and apply knowledge effectively (Gold, Malhotra & Segars, 2001). Knowledge infrastructure capability includes information technology, structure and human resource that collectively facilitate knowledge flows and learning. Prior empirical studies suggest that organizations with strong knowledge infrastructure capabilities are better positioned to leverage employee expertise, enhance decision making quality, and enhance organizational performance (Lee & Choi, 2003; Mills & Smith, 2011). However, the effectiveness of such infrastructures often depends on the presence of complementary cultural attributes that encourage employee participation and knowledge sharing.

The emergence of knowledge-based economy in the mid 90s as driving force for efficient organizational performance has necessitated organizations to modify their practices and technology to enhance performance (OECD, 2024). Consequently, besides physical resources of organizations, other resources and capabilities such as knowledge infrastructure capability become significant in facilitating organizational performance (Liao, Chang, Hu, & Yueh, 2012). Also, employee involvement culture is considered as an intangible resources that organizations may utilize to moderate the extent to which knowledge infrastructure capability could enhance organizational performance (Onyango, Egessa & Ojera, 2022).

In view of the significance of knowledge infrastructure capability in influencing organizational performance, there is the need to investigate the extent to which employee involvement culture may moderate the relationship between constructs.

1.2 Statement of the Problem

The inability of organizations to adopt infrastructure capability (Information technology infrastructure, organizational structure and human resource capability) as some of the most

valuable strategic resources that should be managed in order to enhance performance has led to poor performance of organizations in recent times (Surchi, 2025).

There are studies conducted on the relationship between knowledge infrastructure capability (Information technology infrastructure, organizational structure and human resource capability) and organizational performance which revealed inconsistent results. Among the studies that reported positive association include; Saputri (2025); Enstroem; Kang and Bhawna (2025); AL-Tabtabae and Harbiun (2022); Tessema, Yang and Chen (2025).

Other studies that reported negative association between knowledge infrastructure capability (Information technology infrastructure, organizational structure and human resource capability) and organizational performance include; Surchi (2025); Mills and Smith (2020); Parayitam, Naina, Shea, Mohideen and Aruldoss (2025); and Aldilami and Al-Murhadi (2025). In order to address these contradictions, weak or inconsistencies a moderator can be introduced (Lowry & Gaskin, 2014; Baron & Kenny, 1986). Hence, this study introduced employee involvement culture as a moderator.

The review of literature on knowledge infrastructure capability (Information technology infrastructure, organizational structure and human resource capability) and organizational performance revealed examination of the variables using different qualitative and quantitative tools such as in-depth interview, focus group discussion, content analysis and mixed methods by Mills and Smith (2020); Parayitam, Naina, Shea, Mohideen and Aruldoss (2025); Saputri (2025); Enstroem; Kang and Bhawna (2025); AL-Tabtabae and Harbiun (2022); and Aldilami and Al-Murhadi (2025). Nevertheless, these tools may not make it possible to cover a great number of the population and thus, may not provide details of the phenomenon (Fujii, 2018). The foregoing techniques offer limited modelling capabilities, particularly in terms of causal or complex modelling (Lowry & Gaskin, 2014). Therefore, current study suggests adoption of Partial Least Squares Structural Equation Modelling (PLS-SEM) to investigate the interaction among knowledge infrastructure capability and organizational performance through moderating role of employee involvement culture.

Several studies on knowledge infrastructure capability and organizational performance were conducted in different contexts Saputri (2025); Enstroem; Kang and Bhawna (2025); AL-Tabtabae and Harbiun (2022); Surchi (2025); Mills and Smith (2020); Parayitam, Naina, Shea,

Mohideen and Aruldoss (2025); and Aldilami and Al-Murhadi (2025) with less focus on pension industry and in particular, PFAs in Nigeria. Hence, the findings cannot be generalized to Nigerian context due to cultural differences.

Arising from the foregoing, this study seeks to: (1) investigate the influence of knowledge infrastructure capability (Information technology infrastructure, organizational structure and human resource capability) on organizational performance; and (2) examine the moderating role of employee involvement culture on the relationship between knowledge infrastructure capability and organizational performance. The hypotheses of the study are as follow:

- i. H₀₁: there is no significant relationship between information technology infrastructure and organizational performance of PFAs in Nigeria.
- ii. H₀₂: there is no significant relationship between organizational structure and organizational performance of PFAs in Nigeria.
- iii. H₀₃: there is no significant relationship between human resource capability and organizational performance of PFAs in Nigeria.
- iv. H₀₄: there is no significant relationship between employee involvement culture and organizational performance of PFAs in Nigeria.
- v. H₀₅: there is no significant moderating effect of employee involvement culture on the relationship between information technology infrastructure and performance of PFAs in Nigeria.
- vi. H₀₆: there is no significant moderating effect of employee involvement culture on the relationship between human resource capability and performance of PFAs in Nigeria.
- vii. H₀₇: there is no significant moderating effect of employee involvement culture on the relationship between organizational structure and performance of PFAs in Nigeria.

2.0 Conceptual Review

2.1 Organizational Performance

Organizational performance is one of the most significant variables researched by scholars of management. It is a critical area of management which many scholars have paid attention to in recent time (Janadari, 2020). Organizational performance is multidimensional in nature and is the major target of both public and private organizations (Novak, 2017). According to Fatafta, Obeidat, Mohammed and Kanaan (2019) different factors influence organizational performance to ensure survival of organizations through satisfaction of stakeholders.

Financial performance is measured using financial indicators such as return on investment (ROI), return on equities (ROE), return on asset (ROA), costs, sales, and growth, while non-financial performance measures include product quality, customer satisfaction, delivery on time, efficiency, effectiveness, responsiveness, equity, productivity, market share, employee satisfaction, strategic goal attainment, workforce development and improvement (Kaplan & Norton 1996; Denison & Mishra 1995). For the purpose of this study, we adopt non-financial performance measures to determine performance of PFAs in Nigeria in relation to knowledge infrastructure capability through moderating role of employee involvement culture.

2.2.1 Information Technology Infrastructure

In today's knowledge-based economy, organizations utilize information technology infrastructure as cost efficient tool (Rasula, et al., 2012) to condense response time to customers (Zaied, 2012). Information technology is a significant knowledge management infrastructure that facilitates development and utilization of knowledge within and between units, sections and employees to enhance performance.

Again, information technology infrastructure is defined as electronic instruments that facilitate knowledge generation, storage, sharing, transmission and application within and outside organizations (Nonaka, 1994; Gold, et al., 2001 & Imran et al., 2018). Information technology refers to technical system within an organization which determines how knowledge is circulated, accessed and utilised (Chang & Chuang, 2011).

Moreover, information technology infrastructure is the extent to which an organization is knowledgeable about and effectively uses information technology to manage information within the organization (Gihtii, 2021). In the light of the foregoing, this study adopts the concept of information technology provided by (Gihtii, 2021) on the grounds that it facilitates knowledge acquisition, storage, communication and frequency of sharing knowledge among employees to enhance organizational performance.

2.2.2 Organizational Structure

The flow of knowledge in an organization does not only occurs through the conventional vertical or top-down approach, but also from bottom-up and horizontally with the aid of structural infrastructure. Mintzberg (1983) refers to structural infrastructure' of an organization

as a method in which organizational work is divided into separate tasks, delegated and coordinated towards achievement of organizational goal. It programmes the way duties are carried out by employees based on defined task and authority (Hunter, 2002). Gold, et al. (2001) conceptualize structure as formal allocation of organizational responsibilities, roles, tasks and authorities, including policies, procedures, hierarchical relationship and sectoral boundaries.

The rate at which an organization is structured may facilitates acquisition, storage, dissemination and use of knowledge as well as discharge of responsibilities by employees to enhance organizational performance. Previous studies' have concluded that changes in structural infrastructure of an organization, such as changing from hierarchical structure to flat network structure is significant for effective acquisition, storage, transfer and application of knowledge in the organization (Gold et al., 2001), and influences organizational performance (Fiol & Lyles, 1985).

2.2.3 Human Resource Capability

Every organization requires human resource for its successful operation. They are one of the major components of organizational memory responsible for discharging organizational activities toward achieving its objectives. Considering their significance within the framework of knowledge management infrastructure, organizations must strive to facilitate involvement of its employees in organizational activities (Gharakhani & Mousakhani, 2012).

Also, Schuler and Jackson (1987) and Otoo (2019) defined human resource as a system that attracts, develops, motivates and retains employees to facilitate adequate discharge of organizational activities. In current study, human resource is defined as key organizational resources responsible for acquiring, storing, sharing and applying organizational knowledge using their brains, actions, believes, values and assumptions. This is because human resource is the mind and will of organizations capable of acquiring, sharing and applying knowledge with the assistance of technology, culture and structure infrastructure. This indicates that organization with employees who possess high thinking skill, ability to acquire, store, share and utilize knowledge through information technology would enhance its performance (Rashdi, Akmal, Kamalrudin & Al Shami, 2022).

2.3 Employee Involvement Culture (EIC)

The concept of culture has been viewed in different ways by different scholars since its evolution in the mid-twentieth century. However, what all these scholars have in common is

that culture consists of values, beliefs and assumptions which are shared or communicated among members (Tierney & Schein, 1986). In today's knowledge-based economy, culture of an organization is one of the most complicated components of change management comprising the formal and informal components which are not static or uniform, but actually evolves as time changes (Al-Shibami, Alateibi, Nusari, Ameen, Khalifa, Bhaumik, 2019).

Following issues relating to the relationship between culture and organizational performance, Gordon and DiTomaso (1992); Kotter and Hasket (1992); Denison and Mishra (1995); and Sorenson (2002) develop a model that exposed the extent to which culture helps to explain differences in performance of organizations (Sparrow, 2001). The model identified employee involvement culture as one of the elements that is essential in enhancing organizations.

According to Kumari and Kumari (2014) employee involvement culture is empowerment and participation of employees in decision making on activities suitable to their ranks in the organization. It helps managers to confirm the commitment of workers towards implementation of any change in organization (Nwachukwu, 2006). Arisen from the foregoing definitions of employee involvement culture, current study conceptualizes employee involvement culture as deliberate management effort aimed at expanding responsibilities of employees or group of employees at different levels to discharge their responsibilities toward enhancing organizational performance.

2.4 Empirical Review

2.4.1 Information Technology Infrastructure and Organizational Performance

Saputri (2025) examined effect of IT infrastructure management on organizational performance using case study of organizations that have implemented IT infrastructure management strategies. The result showed that IT infrastructure management has significantly improves organizational performance through operational efficiency, system reliability, innovation and stakeholders satisfaction. The result of the study is judgemental on the ground that it used qualitative method which focuses on small sample which is not representative enough for drawing robust conclusion. Moreover, the study ignored the role employee involvement culture would have played as a moderator to influence the relationship between the constructs. This establishes a huge gap which current study seeks to address.

Similarly, Enstroem, Kang and Bhawna (2025) investigated impact of IT infrastructure on organizational performance using Harmonized Information Technology and Organizational Performance (HI-TOP) model. The result revealed that IT information enhanced organizational performance positively. The study excluded the moderating role of employee involvement culture which would have made more contributions. This indicate the need for further study to investigate the role employee involvement culture would play as a moderator on the relationship between strategic thinking and organizational performance.

AL-Tabtabae and Harbiun (2022) conducted a landmark study on the effect of knowledge infrastructure capability on sustainable organizational performance of civil hospitals in the Middle Euphrates region, Syria. In the study, information technology infrastructure was considered as one of the key components. The result indicates a statistically significant correlation between information technology infrastructure and sustainable performance. However, result of the study is not explicit considering the fact that it exclude the moderating role of employee involvement culture. More so, the sample size of sixty two used in the study is not sufficient for drawing robust conclusion. Thus, the result cannot be generalized. This reveals a huge gap which current study will fill.

Kaldeen, Nawaz and Hassan (2020) analysed the effect of IT infrastructure on organizational performance of Star rated Hotels in Sri Lanka. Finding shows that IT infrastructure indirectly influence organizational performance. However, their study was based on IT infrastructure as a predictor of organizational performance without considering other equally important variable such as the structure and human resource. Also, the multidimensional variables of the study would have made more contributions, especially where it is designed to include the moderating role of other equally important variable like employee involvement culture. Thus, finding of the study cannot be generalized. This indicates a gap which current study will fill.

However, Surchi (2025) conducted a landmark study which investigated the role of management information technology in enhancing organizational efficiency. The study employed mixed method, combining content analysis of 50 peer-reviewed articles with quantitative survey of 120 managers from healthcare, manufacturing and education sectors. The result showed insignificant relationship between IT infrastructure and organizational performance. The findings of the study is judgemental given that the study focuses on other sectors without considering pension subsector. Similarly, the study excluded other equally

important moderating variables such as employee involvement culture which would have made more contributions. Current study intends to fill this huge gap.

Likewise, Mills and Smith (2020) investigated the linkage between business strategy and knowledge management capabilities for organizational effectiveness using a sample of 189 managers. The result shows a negative relationship between information technology infrastructure and organizational performance. However, since the study did not separate data used for the analysis of organizational performance on the basis of subjective or objective measure, consequently, it is not clear whether subjective measure made significant contribution or not. More so, given that the study eliminate other variables such as employee involvement culture which would have made more impact, the result cannot be generalized. This reveals a huge gap in the literature which present study will address.

2.4.2 Organizational Structure and Performance

In a landmark study was conducted by AL-Tabtabae and Harbiun (2022) on the effect of knowledge infrastructure capability on sustainable organizational performance of civil hospitals in the Middle Euphrates region, Syria. The result shows that organizational structure significantly influence sustainable performance. The result of the study is judgemental on the ground that it ignored the contributions of other equally important variables such as employee involvement culture. Moreover, the sample size of sixty two is not sufficient enough for coming up with robust conclusion. Thus, current study will fill this gap using appropriate data for the analysis.

However, Kolotova (2018) did a study titled influence of knowledge management practices on organizational performance: empirical research at Russian SMEs. The study considered the effect of organizational structure as one of the major constructs of knowledge infrastructure capability on organizational performance. It used online survey to collect data from the respondents through questionnaire. The result show that organizational structure negatively influences organizational performance. However, given the fact that the population of the study is only forty-one (41), the finding cannot be generalized because the sample size is not representative enough for drawing a robust conclusion. Also, the study did not consider other equally important variables employee involvement culture which would have made more contributions. Thus, current study will address these gaps by considering the variables on a platform of appropriate theory with sufficient empirical data.

In another landmark study conducted by Aldilami and Al-Murhadi (2025) titled alignment between organizational structure and strategy and its impact on organization's performance in Yemen. The study employed SEM to analyse data obtained from (305) managers of (43) organizations. The result shows absence of alignment between organizational structure and organizational performance. Nonetheless, the result could be judgemental on the ground that ignored moderating role of other equally important variables such as employee involvement culture which would have made contribution. Thus, current study will fill these huge gap.

2.4.3 Human Resource Capability and Organizational Performance

AL-Tabtabae and Harbiun (2022) investigated the effect of knowledge infrastructure capability on sustainable organizational performance of civil hospitals in the Middle Euphrates region, Syria and discovered that human resource positively correlates with organizational performance. The result cannot be generalized given that it has eliminated the effect of employee involvement culture as a moderator which would have made more contribution. Thus, indicates a huge gap which current study will address.

Likewise, Rashdi, Akmal, Kamalrudin and Al Shami (2022) undertook a study which examine the effect of knowledge management process and infrastructure on organizational performance. Also, it explore the moderating role of organizational trust and support on the relationship between the variables. The result demonstrates that human resource fundamentally influences organizational performance. The Authors' propose that future research should consider other variables like employee involvement culture as a moderator to further examine the linkage between the constructs. Although since the study did not segregate data used for the analysis on the basis of public or private companies, it cannot be ascertained whether data collected from private companies made more contribution, thus, the result could be misleading. This gap will be addressed by the current study.

Tessema, Yang and Chen (2025) examined the effect of human resource analytics on organizational performance in Ethiopia. The study collect data from 269 respondents in 66 organizations across Addis Ababa. The result showed that human resource significantly influences organizational performance. The result cannot be generalized on the ground that the study ignored pension subsector which would have made more contribution. Similarly, the role of employee involvement culture was grossly ignored in the study which leaves more to be

desired. This study seeks to address these gaps using employee involvement culture as a moderator in pension subsector.

Empirically, Parayitam, Naina, Shea, Mohideen and Aruldoss (2025) investigated the relationship between human resource management practices, knowledge management practices, and performance in healthcare industry in India. The result revealed insignificant linear association between human resource practice and organizational performance. The major limitation of the study is that although the population sample was fairly balanced among the regions in India, nevertheless, a larger sample size may have yielded better generalizability of results. Also, the study focused on human resources, but did not incorporate other equally significant variables like employee involvement culture which may have contributed to organizational performance. This indicates existence of huge literature gap which current study will fill.

2.5 Employee Involvement Culture (EIC) as a Moderator

Every organization is unique and has different culture for its operations. Organizational culture is a system of values, beliefs, behaviours and idea instituted by organizations to guide employees on the operations of the organization. It drives the organization forward and establishes operational ecosystem in which every employee tries to achieve the goal set by the organization (Narayana, 2017). This indicates that understanding organizational culture is significant for the employees, stakeholders and organizations at large on the ground that it is needed to facilitate organizational efficiency, effectiveness, responsiveness and equity (Djangone et al 2021 & Norman, Paramansyah & Abdan, 2022).

However, given the fact that every organization focuses on enhancing its performance within a given cultural context, there is the need to understand the extent to which cultural affects organizational performance. Thus, current study introduced employee involvement cultural to demonstrate the extent to which it could moderating the relationship between knowledge infrastructure capability (IT infrastructure, organizational structure & human resource) and organizational performance. The justification for introducing employee involvement culture is predicated on the fact that it is a significant element that can be used to explain organizational performance (Saleem & Ilkhanizadeh, 2021; Baba & Audu, 2021; & Mananeka, Djati, Ingkadijaya & Desafitri, 2021). In addition, the moderating role of culture in previous studies have been validated (Irianto & Basbeth, 2021; & Maswadeh & Al Zumot, 2020).

Nevertheless, studies (Saputri, 2025; Enstroem; Kang & Bhawna, 2025) on knowledge infrastructure capability overlooked the moderating effect of employee involvement culture on how knowledge infrastructure capability may influence organizational performance. Saliani and Eslami (2016) explained that a culture of an organization may involve employees in knowledge related activities to be able to enhance organizational performance. This is because employee behaviour depends largely on specific cultural factor in an organization, which means adoption of employee involvement culture must be viewed within the context of organizational culture.

This study introduces employee involvement culture as a moderator on the relationship between knowledge infrastructural capability and organizational performance focusing on PFAs in Nigeria. This is predicated on the fact that employees of PFAs may be involved in knowledge infrastructure activities that may enhance performance of the PFAs in Nigeria. Consequently, current study suggests that employee involvement culture may moderate the interaction between knowledge infrastructure capability (IT infrastructure, organizational structure and human resource) and organizational performance. The study assumes that employee involvement culture may strengthen the influence of knowledge infrastructure capability on organizational performance under investigation in Nigeria.

2.6 Underpinning Theory: Knowledge-Based View (KBV)

Knowledge-Based View (KBV) posits that resource base of organizations consist of knowledge-based assets (Roos, Roos, Edvinsson & Dragonetti, 1997; Stewart, 1997; Sveiby, 2001; & Marr, 2004). The theory states that organizational performance could be enhanced effectively by acquiring, managing, sharing and utilizing knowledge resources through adequate infrastructure. Knowledge management is one of the most significant, unique and scarce strategic resources of organizations (Grant, 1996). Knowledge management capability is the ability to acquire knowledge, protect the knowledge and motivate staff to share the knowledge through appropriate infrastructure for optimal organizational performance (Liu, Chen & Tsai (2004). It improves efficiency, effectiveness and responsiveness of organization (Borho, Iarozinski, & Lima, 2012; Lee, Kim, & Kim, 2012). This means that only organizations that efficiently and effectively manage their knowledge would achieve superior performance (Zack, McKeen, & Singh, 2009). The global knowledge-based economy has made operations of pension sub-sector complicated due to increase in reliance on knowledge infrastructure capability which facilitates knowledge management for effective operations of PFAs. In this

regard, it becomes necessary to have in place effective and efficient knowledge infrastructure capability for successful operations (Ali, Bajwa, & Rehman, 2021).

Against the foregoing background, the model of present study suggests that KBV theory may explain the impact of knowledge infrastructure capabilities on organizational performance through the moderating role of employee involvement culture. The theory contends that transfer and transformation of knowledge in organization require interplay of knowledge infrastructure capability (information technology infrastructure, organizational structure and human resource).

Moreover, knowledge infrastructure capability is related to organizational performance on ground that information technology infrastructure, organizational structure and human resource of an organization support stock of knowledge that would be utilized to enhance organizational performance. This indicates that organizations can deploy knowledge resources to produce services and products that will contribute to superior organizational performance (Grant, 1996). Therefore, it is assumed that KBV would support knowledge infrastructural capability through employee involvement culture as a moderator to influence organizational performance.

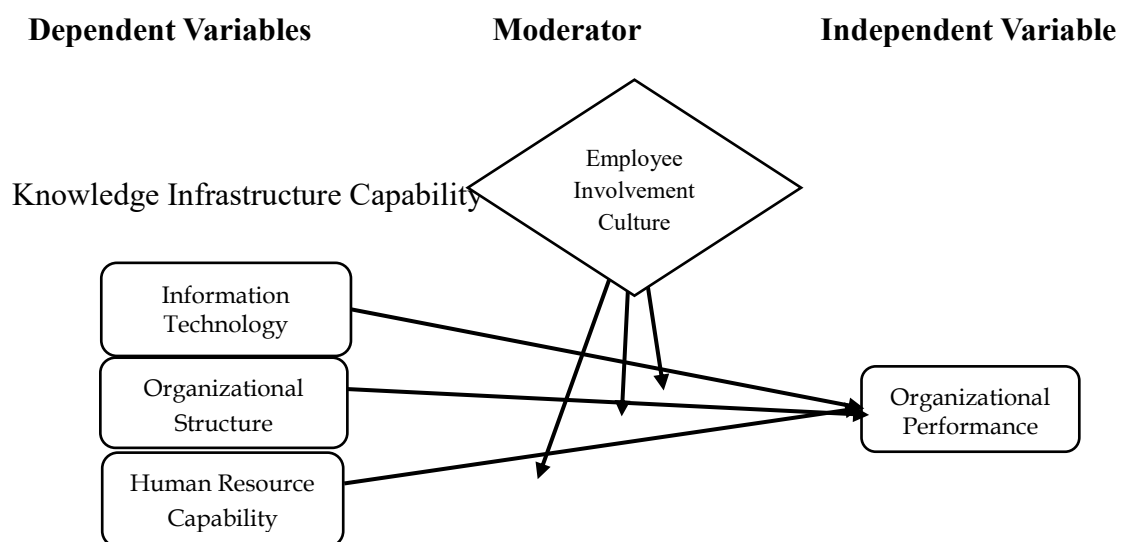


Figure 1.1: Conceptual model of the study

3.0 Methodology

This study employed cross sectional survey design. This study focuses on the nineteen (19) Pension Fund Administrators (PFAs) licensed by National Pension Commission in Nigeria. The study considered ten (10) out of the nineteen (19) licensed PFAs which were selected using

purposive sampling based on market share. This study used simple random sampling method to obtain the sample size proportionate to the population of each the PFAs. Krejcie and Morgan (1970) formula for determination of sample size was utilized to arrive at a sample of one hundred and eighty-eight (188) out of three hundred and sixty-eight (368) population of the study.

This study used questionnaire to collect data from respondents. It utilizes five (5) point Likert Scale with questions ranging from “1” for Strongly Agree to “5” for Strongly Disagree to measure the variables. Knowledge infrastructure capability is measured using eighteen (18) items adapted from Gold, et al. (2001) where information technology infrastructure has six (6) items, organizational structure five (5) items and human resource capability seven (7) items. Organizational performance is measured using eight (8) items adapted from Song (2016) while employee involvement culture six (6) items adapted from Denison (1990).

The questionnaire was administered electronically through e-mail addresses and social media (WhatsApp) handles of the staff of ten (10) licensed PFAs considered for this study using KoboToolbox. The e-mail addresses and phone numbers of the PFA staff across all states in Nigeria were retrieved from websites of the National Pension Commission and the ten (10) PFAs. A total of one hundred and eighty-eight (188) copies of the questionnaire was administered to the respondents out of which one hundred and twenty-six (126) was returned representing (67%) of the questionnaire administered.

This study utilizes SmartPLS 4.0 software to perform Partial Least Squares Structural Equation Modeling (PLS-SEM), focusing on the two core components: the measurement model and the structural model, following the guidelines provided by Cheah, et al. (2024). The choice of PLS-SEM was justified by several factors. Firstly, it offers flexibility with regard to data distribution and sample size requirements (Ringle, et al, 2020). Secondly, PLS-SEM enhances the accuracy and reliability of estimates by accounting for measurement errors that could otherwise weaken the relationships between variables. Moreover, it supports the development and validation of theoretical models, as emphasized by Abubakar et al. (2024) and Hair Jr. et al. (2021).

A pilot study is conducted to determine the reliability of the questionnaire using *Cronbach's Alpha* which measures internal consistency to establish the extent to which certain items within the scale measure the same construct based on recommendations of Saunders, Lewis and Thornhill (2009) who established a *Cronbach's Alpha* threshold of 0.7. The pilot study assesses

validity and reliability of data collected (Saunders, Lewis, & Thornhill, 2009). This study used one hundred (60) respondents as population of the pilot study given that Johanson and Brooks (2010) proposed minimum of thirty (30) sample size for a pilot study.

In order to ascertain adequacy of the questionnaire adapted for the study, face validity of the instruments were conducted by two (2) experts within and outside the Department of Business Management, Bayero University, Kano. Having subjected the questionnaire to content and face validity, the reversed and updated version of the questionnaire was administered for pilot test. The test of the reliability result for the pilot study indicate that all the items attain high reliability coefficient. The results range between 0.727 to 0.963 which are in conformity with the views of Sekaran and Bougie (2016) who recommended 0.60 as an average reliability and a coefficient of 0.70 and above as high reliability. This means that all the items of the variables used for the study are adequate for utilization in conducting the full study.

4.0 Results

4.1 Measurement Model Assessment

In evaluating the measurement model, the study examined several key indicators to ensure the reliability and validity of the constructs. This included assessing the reliability of individual measurement items, internal consistency reliability (using composite reliability, Cronbach's alpha, and rho-A), as well as convergent and discriminant validity, in line with the recommendations of Henseler et al. (2015). According to Hair et al. (2022), acceptable thresholds for scale development include outer loadings of at least 0.70, an Average Variance Extracted (AVE) of 0.50 or higher, and internal consistency values (Cronbach's alpha and composite reliability) of 0.70 or above. The results supporting the reliability and validity of the constructs are illustrated in Figure 2 and summarized in Table 1.

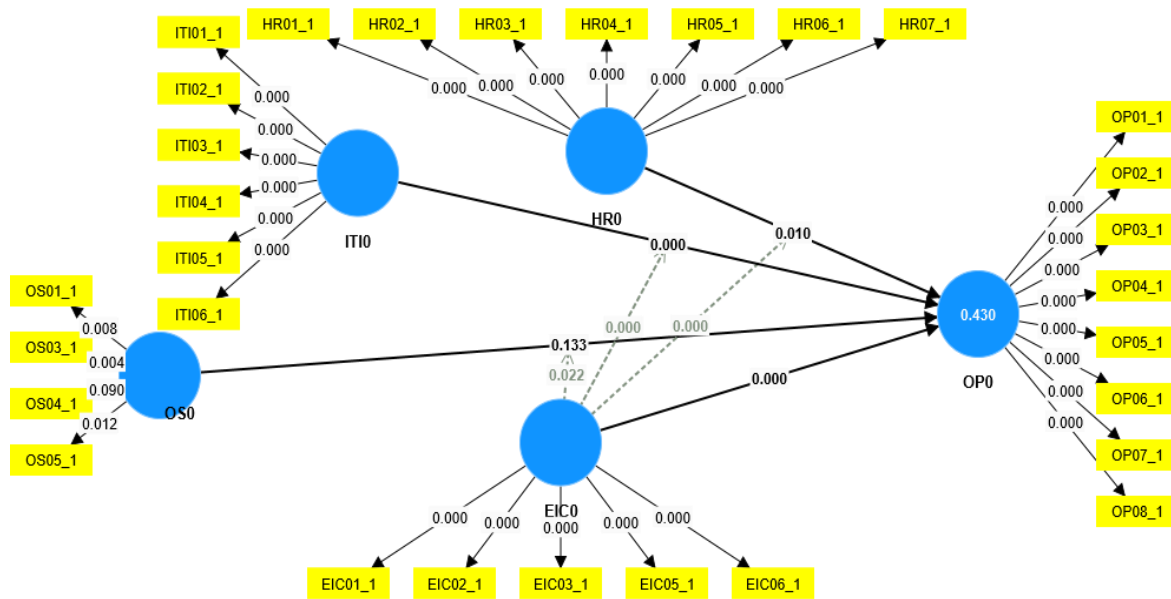


Figure 2: Measurement Mode

Table 1: *Results of measurement model and convergent validity*

VARIABLES	C/Alpha	Composite Reliability	AVE
Employee Involvement Culture	0.76	0.84	0.52
Human Resource	0.92	0.93	0.66
Information Technology Infrastructure	0.90	0.92	0.65
Organizational Performance	0.94	0.95	0.74
Organizational Structure	0.79	0.81	0.52

Cronbach's-Alpha; Composite Reliability; AVE: Average Variance Extracted

All constructs in the study demonstrated adequate reliability, as indicated by their respective factor loadings, Cronbach's alpha, and composite reliability values all of which exceeded the recommended threshold of 0.70. Furthermore, the constructs also showed sufficient convergent validity, as the AVE values for each construct were above 0.50.

In addition, discriminant validity was established, as the square roots of the AVEs for each construct were greater than the correlations with any other construct, confirming that each latent construct is conceptually distinct and not strongly correlated with others.

Accordingly, the measurement items reported in Table 1 met the criteria for both reliability and convergent validity. To further evaluate discriminant validity, the Heterotrait-Monotrait (HTMT) ratio of correlations was employed, with results presented in Table 2. The HTMT ratio compares correlations between constructs (heterotrait) with those within the same construct (monotrait), offering a more robust assessment of discriminant validity.

Afthanorhan, Awang, Aimran, and Arifin (2021) recommend a threshold of 0.85 for HTMT, while Usakli and Kucukergin (2018) suggest that values should not exceed 0.90. The HTMT results in Table 2 indicate that all values fall below 0.85, thereby confirming the discriminant validity of the constructs used in this study and supporting the robustness of the measurement model.

Table 2: *Heterotrait-Monotrait Ratio (HTMT)*

VARIABLES	<i>EICO</i>	<i>HR0</i>	<i>ITIO</i>	<i>OP0</i>	<i>OS0</i>
Employee Involvement Culture					
Human Resource	0.26				
Information Technology Infrastructure	0.20	0.63			
Organizational Performance	0.37	0.44	0.36		
Organizational Structure	0.36	0.18	0.14	0.10	

Sources: Field Survey 2025

4.2 Structural Model Assessment

Following the evaluation of the measurement model, the next step involves assessing the structural model. This stage begins with an analysis of the hypothesized theoretical relationships. A standard bootstrapping procedure was applied, using a sample of one hundred and twenty six (126) and 5,000 bootstrap resamples, to determine the statistical significance of the path coefficients, following the recommendations of Hair et al. (2022). According to Hair et al., structural model evaluation in PLS-SEM using SmartPLS 4 should focus on three key indicators: the significance of path coefficients, the coefficient of determination (R^2), and the effect size (f^2). The results of the hypothesis testing are summarized in Table 3.

Similarly, the Findings reveal that Organizational Structure has a positive and insignificant influence on Organizational Performance in the PFAs ($\beta = 0.09$, $SD = 0.06$, $t = 1.50$, $p=0.13 >0.05$). This implies that for every one-unit increase in Organizational Structure, the Organizational Performance will improve by approximately 09%. Consequently, Hypothesis H_{02} is accepted, affirming that Organizational Structure has a positive but insignificant influence on Organizational Performance in the PFAs in Nigeria.

In the same vein, Human Resource has a positive and significant influence on Organizational Performance in the PFAs ($\beta = 0.17$, $SD = 0.07$, $t = 2.57$, $p=0.01 < 0.05$). This implies that for every one-unit increase in Human Resource, the Organizational Performance will improve by approximately 17%. Consequently, Hypothesis H_{03} is rejected, affirming Human Resource has a positive and significant influence on Organizational Performance in the PFAs in Nigeria.

Likewise, the structural path results reveals that Employee Involvement Culture has a positive and significant influence on Organizational Performance of the PFAs ($\beta = 0.38$, $SD = 0.09$, $t = 7.16$, $p=0.00 < 0.05$). This implies that for every one-unit increase in Employee Involvement Culture, the Organizational Performance will improve by approximately 25%. Consequently, Hypothesis H_{04} is rejected, affirming that Employee Involvement Culture has a positive and significant influence on Organizational Performance in the PFAs in Nigeria.

Regarding Hypothesis H_{05} , which examined the moderating role of Employee Involvement Culture on the relationship between Information Technology Infrastructure and Organizational Performance in the PFAs, the result indicates a negative and significant moderation ($\beta = -0.27$, $SD = 0.06$, $t = 4.55$, $p=0.00 < 0.00$). This suggests that Employee Involvement Culture weakens the influence of the relationship by 27%. Therefore, H_{05} is rejected, supporting the presence of a significant positive moderating effect.

On the contrary, the Hypothesis H_{06} of this study that also examined the moderating role of Employee Involvement Culture on the relationship between Human Resource and Organizational Performance in the PFAs, indicates a positive and significant moderation ($\beta = 0.38$, $SD = 0.09$, $t = 4.33$, $p=0.00 < 0.00$). This suggests that Employee Involvement Culture improve the influence of Human Resource Capability on Organizational Performance in the PFAs by 38%. Therefore, H_{06} is also rejected, supporting the presence of a significant positive moderating effect

Finally, the last observed relationship in this study is Hypothesis H_{07} that also examined the moderating role of Employee Involvement Culture on the relationship between Organizational

Structure and Organizational Performance in the PFAs, the result indicates a positive and significant moderation ($\beta = 0.32$, $SD = 0.14$, $t = 2.28$, $p=0.00 < 0.00$). This suggests that Employee Involvement Culture improves the influence of Organizational Structure on Organizational Performance of the PFAs by 32%. Therefore, H_{07} is also rejected, supporting the presence of a significant positive moderating effect.

Having assess the significance of relationship using path coefficient, the next is assessment of the *Coefficient* of determinant (R^2)

Table 4: *Coefficient of determinant (R^2).*

Construct	R-square	R-square adjusted
SSB	0.43	0.42 substantial

Source: Field Survey 2025

Table 4 presents the amount of variance explained by the initial model (i.e., the measurement model). According to Cohen's (1988) guideline for interpreting R^2 values, the independent variables collectively accounted for 43% of the variance in Organizational Performance of the PFAs. This indicates that Information Technology Infrastructure, Human Resource, Organizational Structure and Employee Involvement Culture made a meaningful contribution to explaining variations in Organizational Performance of the PFAs.

Following the analysis of the significance of the path coefficients and the coefficient of determination (R^2), the next step involves evaluating the effect size (f^2) of the predictors, as outlined by Abubakar, et al. (2024). Cohen (1988) defines f^2 values of 0.02, 0.15, and 0.35 as benchmarks for small, medium, and large effect sizes, respectively. The results of the effect size analysis for each construct are presented in Table 5.

Table 5: *Effect size of exogenous variables*

Construct	f-square	Decision
EIC0 -> OP0	0.100	Medium
HR0 -> OP0	0.026	Small
ITI0 -> OP0	0.088	Small
OS0 -> OP0	0.011	Small
EIC0 x OS0 -> OP0	0.121	Medium
EIC0 x HR0 -> OP0	0.093	Small
EIC0 x ITI0 -> OP0	0.047	Small

Source: Field Survey 2025

Table 5 presents the effect sizes of the exogenous variables included in this study (Abubakar, 2024). The findings show that Employee Involvement Culture exerts a medium effect on organizational Performance, with an f^2 value of 0.100. Human Resource show a small effect, with an f^2 value of 0.026. Information Technology Infrastructure show a small effect, with an f^2 value of 0.088, Organizational Structure also show a small effect, with an f^2 value of 0.011. The interaction between Employee Involvement Culture and Organizational Structure demonstrates a medium effect, with an f^2 value of 0.121. Similarly, the interaction between Employee Involvement Culture and Human Resource has a small impact, reflected by an f^2 value of 0.093. Finally, the interaction between Employee Involvement Culture and Information Technology Infrastructure show a small effect, with an f^2 value of 0.047.

Based on these results, it can be concluded that both Information Technology Infrastructure, Human Resource, Organizational Structure and Employee Involvement Culture have effect on Organizational Performance of the PFAs in Nigeria.

Additionally, the Stone-Geisser Q^2 value was used to evaluate the predictive relevance of the model. According to Cohen (1988), a Q^2 value of 0.02 indicates a small predictive effect, 0.15 a medium effect, and 0.35 a large effect.

Table 6: *Construct cross-validated redundancy (Q^2)*

Construct	SSO	SSE	$Q^2 (=1-SSE/SSO)$
Organizational Performance	4968.00	3479.15	0.30

Source: Field Survey 2025

Table 6 indicates that the Q^2 value for Organizational Performance is greater than zero. Specifically, the Q^2 value is 0.30, suggesting that the independent variables in the model possess a moderate level of predictive relevance for Organizational Performance.

5.0 Discussion of Findings

This study investigated the relationships among employee involvement culture, knowledge infrastructure capabilities (information technology infrastructure, human resource capability, and organizational structure), and organizational performance of Pension Fund Administrators (PFAs) in Nigeria, using the Knowledge-Based View (KBV) as the guiding theoretical framework. The findings provide strong empirical support for the central KBV proposition that firm performance is largely driven by internally embedded resources and capabilities rather than external market conditions alone.

The results indicated that information technology infrastructure has a significant and positive influence on the performance of PFAs in Nigeria. This finding suggests that PFAs with robust IT systems are better positioned to enhance operational efficiency, ensure accurate record-keeping, improve service delivery, and meet regulatory compliance requirements under the Contributory Pension Scheme. From the KBV perspective, IT infrastructure constitutes a strategic organizational resource that enables the effective processing, storage, and dissemination of pension-related information, thereby supporting value creation and performance improvement. This finding supports the studies like (Ako-Nai, and Singh, 2019; Turulja, & Bajgoric, N. 2018) who stated that information technology infrastructure has a significant and positive influence on the performance in other sectors.

Similarly, the study finds that human resource capability significantly and positively influences PFA performance. This underscores the importance of skilled, knowledgeable, and experienced employees in managing pension funds, customer relations, and compliance obligations. KBV emphasizes human capital as a valuable, rare, and difficult-to-imitate resource, particularly in knowledge-intensive sectors such as financial services. The finding implies that PFAs that invest in employee training, professional competence, and expertise are more likely to achieve superior performance outcomes. This finding is in line with the findings of some existing studies that established similar relationships (e.g Katou, 2017; Wijaya, et al, 2022; Sutanto, et al, 2023).

In contrast, the results show that organizational structure does not have a significant direct influence on performance. This suggests that formal structural arrangements such as hierarchy, reporting lines, and departmentalization do not independently drive performance differences among PFAs. From KBV standpoint, organizational structure may function more as an enabling mechanism rather than a strategic resource capable of generating competitive advantage on its own. The uniform regulatory framework governing PFAs in Nigeria may further limit the extent to which structural variations translate into performance differentials.

The findings further demonstrate that employee involvement culture has a significant and positive effect on the performance of PFAs in Nigeria. This indicates that organizations that encourage employee participation in decision-making, problem-solving, and work processes tend to achieve higher performance (Baisamwoyo, 2019). Within the KBV framework, employee involvement culture represents an intangible and socially complex resource that enhances employee commitment, motivation, and discretionary effort. Such cultural attributes

are deeply embedded within organizations and are difficult for competitors to replicate, thereby contributing to sustained competitive advantage (Madu, 2012; Azeem, Ahmed, Haider & Sajjad, 2021).

Moreover, a major contribution of this study lies in examining the moderating role of employee involvement culture. The findings reveal that employee involvement culture significantly and positively moderates the relationship between human resource capability and performance. This implies that the performance benefits derived from skilled and competent employees are amplified when they operate within a participatory and inclusive organizational culture (Radu, 2023; Oladimeji, Abdulkareem & Ishola, 2023). From the KBV perspective, this reflects resource complementarity, where the interaction between human capital and cultural resources enhances value creation beyond their individual effects (Gerhart, & Feng, 2021; Chen, et al 2017).

Similarly, employee involvement culture positively moderates the relationship between organizational structure and performance, despite the insignificant direct effect of organizational structure. This suggests that even rigid or formal structures can contribute to performance when employees are empowered and involved in organizational processes (Rhee, Seog, Bozorov & Dedahanov, 2017; Al-Hammouri, Rababah & Ta'an, 2021). In KBV terms, employee involvement culture acts as a capability-enhancing mechanism that allows otherwise neutral or weak resources to become performance relevant.

However, the study reveals a negative but significant moderating effect of employee involvement culture on the relationship between information technology infrastructure and performance. This indicates that excessive employee involvement in IT-driven processes may weaken the positive impact of technological infrastructure on performance (Lavianti, Munir, Dirgantari, Rasim & bin Mahphoth, 2025; Karya, Kadir, Rusby, Noherman, Atri & Rosa, 2025). The possible explanation is that high levels of involvement may lead to coordination challenges, role ambiguity, or slower decision-making in highly technical systems that require specialized expertise. From KBV standpoint, these finding highlights that not all resource combinations generate positive synergies, and misalignment between cultural practices and technological systems can reduce the value derived from IT investments.

5.1 The Implications of the study

Overall, the findings strongly support the Knowledge-Based View by demonstrating that PFAs' performance in Nigeria is shaped by the possession and effective deployment of strategic internal resources, particularly human resources, IT infrastructure, and organizational structure. Employee involvement culture emerges as a critical intangible resource that not only directly enhances performance but also conditions how other resources influence organizational outcomes. The mixed moderating effects further extend KBV by illustrating that resource interactions can be both value-enhancing and value-diminishing, depending on the degree of alignment among organizational capabilities.

Similarly, in the context of Nigeria's pension industry, where efficiency, accountability, and trust are paramount, the findings suggest that PFAs should prioritize investments in human capital development and IT infrastructure while fostering a strong culture of employee involvement. However, managers must carefully manage the interface between participatory practices and technology-driven operations to avoid undermining efficiency. Aligning employee involvement culture with the strategic use of knowledge infrastructure capabilities is therefore essential for improving performance and sustaining competitive advantage in the Nigerian pension sector.

6.0 Conclusion

This study examined the relationships among employee involvement culture, knowledge infrastructure capabilities, and organizational performance of Pension Fund Administrators (PFAs) in Nigeria, drawing on the Knowledge-Based View (KBV) as its theoretical foundation. The findings provide strong empirical evidence that internal organizational resources and capabilities play a critical role in shaping performance outcomes within Nigeria's pension industry.

The results demonstrate that information technology infrastructure, human resource capability, and employee involvement culture have significant and positive effects on the performance of PFAs in Nigeria. These findings underscore the importance of technological readiness, skilled human capital, and participatory organizational culture as strategic resources that enhance efficiency, service quality, regulatory compliance, and overall organizational effectiveness. In line with KBV assumptions, these resources are valuable and, when effectively integrated, contribute to sustained performance advantages.

Conversely, the study reveals that organizational structure does not have a significant direct influence on performance. This suggests that formal structural arrangements alone are insufficient to drive performance improvements among PFAs, possibly due to regulatory standardization across the industry. However, organizational structure becomes performance-relevant when combined with supportive cultural practices.

Importantly, the study establishes the moderating role of employee involvement culture where it significantly and positively moderates the relationship between human resource capability and performance, as well as between organizational structure and performance. This indicates that participatory and inclusive work environments enhance the effectiveness of human capital and enable organizational structures to support performance outcomes. However, employee involvement culture negatively moderates the relationship between information technology infrastructure and performance, suggesting that excessive involvement in technologically driven processes may reduce efficiency or weaken the performance gains associated with IT investments.

Overall, the study concludes that PFAs' performance in Nigeria is best explained by the effective deployment and alignment of internal resources, particularly human capital, IT infrastructure, and employee involvement culture. The findings extend the Knowledge-Based View by highlighting that resource interactions can produce both complementary and substitutive effects, emphasizing the need for strategic alignment among organizational capabilities.

7.0 Recommendations

Based on the findings of this study, the following recommendations are proposed for policymakers, managers of Pension Fund Administrators, and future researchers:

Pension Fund Administrators should prioritize continuous training, professional development, and skills enhancement of employees. Given the positive influence of human resource capability on performance, investments in competence development will enhance service delivery, compliance, and operational efficiency.

PFAs should continue to invest in modern, secure, and integrated IT systems to support pension administration and customer service. However, management should ensure that IT-related

decision-making remains technically focused to avoid inefficiencies arising from excessive employee involvement in specialized technological processes.

Management should foster employee involvement in decision-making, problem-solving, and operational improvements, particularly in human resource and structural matters. Such participatory practices enhance employee commitment and maximize the performance benefits of human capital and organizational structure.

Although organizational structure does not directly influence performance, PFAs should design flexible structures that support employee involvement and collaboration. Empowerment mechanisms can transform structural arrangements into effective performance-enabling systems. Regulatory bodies such as the National Pension Commission (PenCom) should support industry-wide capacity-building initiatives focused on human capital development, digital competence, and participatory management practices to strengthen the overall performance of PFAs.

Future studies may examine the role of knowledge process capability; knowledge acquisition, storage, sharing and application on performance of PFAs in Nigeria through moderating role of employee involvement culture. Other studies may investigate leadership style, organizational learning, trust, and knowledge-sharing practices in shaping PFA performance within the KBV framework. Longitudinal studies could provide deeper insights into how resource interactions evolve over time, while comparative studies across financial subsectors or countries could enhance the generalizability of the findings.

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PERFORMANCE APPRAISAL AND EMPLOYEES JOB PERFORMANCE
THROUGH EMPLOYEE JOB COMMITMENTS IN THE NIGERIAN BANKING
SECTOR

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Abstract

Performance appraisal is extensively recognized as a dynamic human resource management tool in refining employee job performance, exclusively in service-oriented organizations like banks. While its significance is well documented, empirical studies are still scarce in exploring the precise way depicting how performance appraisal affects job performance in emergent economic like Nigeria. Standing along Social Exchange Philosophy, this study scrutinizes the extent to which affective, normative, and continuance commitment facilitate the connection among performance appraisal and employee career performance within Nigeria's financial sector. A cross-sectional approach was adopted, utilizing non-probability sampling to gather data from employees across all deposit money banks operating in Kano Metropolitan Area, Nigeria. Collected data was analyzed via Smart-PLS 4. The outcomes showed that performance appraisal showcased a constructive and momentous influence over employee job performance ($t = 7.65, p < 0.05$). while, affective as well as normative commitment found to significantly and absolutely facilitate the link among performance appraisal with job performance ($t = 3.16, p < 0.05$; $t = 6.00, p < 0.05$, correspondingly). These outcomes imply that employees who develop emotional ties and feel a sense of moral duty to stay are more probable to reciprocate fair and transparent appraisal processes with sensitive performance. In contrast, continuance commitment not meaningfully intercede this relationship ($t = 0.45, p > 0.05$), representing that commitment motivated by alleged costs of leaving does not automatically lead to better performance. This study enhances literature in the field of human and organizational behaviour by expounding the unique contributions of each commitment dimension to performance outcomes, and also upsurge the applicability of the Social Exchange Theory within a developing country setting. The results provide useful understandings for banking sector leadership and policy development.

Keywords: Employee job performance, Performance appraisal, Affective commitment, Normative commitment, Continuance commitment,

1.0 Introduction

In the competitive business landscape, employee performance remains a considerate factor of organizational success, largely within service-oriented industries such as banking. Among the greatest human resource management tools employed to enhance employee performance is performance appraisal (Ochidi et al., 2019; Stor, 2023) thus a systematic process through which employees' work contributions are assessed against predetermined standards. Globally, performance appraisal systems are intended not only to assess past performance but also to outline future employee behaviour and align individual goals with organizational objectives (Armstrong, 2020).

These identified factors are predominantly central in Nigeria's banking sector, which contributes over 2.5% to the Nigerian Gross Domestic Product and employs more than 103,000 persons as at 2023 (National Bureau of Statistics [NBS], 2023). For this regard, employee performance directly influences operational efficiency (Triansyah et al., 2023), customer satisfaction (Budur & Poturak, 2021), and profitability (Wanigasekara & Mendis, 2021). Additionally, studies indicates that despite the presence of structured performance appraisal systems, employee performance in the Nigerian banking sector remains unreliable due to challenges such as bias, lack of transparency, and inadequate feedback mechanisms (Onyishi & Okonkwo, 2019). Within banking industry, where employee productivity directly influences organizational outcomes (Matui, 2017; Aldoseri & Almaamari, 2020; Radha & Aithal, 2023; and Ng et al., 2024), active performance appraisal systems can significantly influence job performance (Baird et al., 2020; Dangol, 2021). Nevertheless, the extent to which performance appraisal enhances employee productivity may basically depend on intervening factors such as employee job commitment (Teka, 2023; Sharif et al., 2024; Muhammad et al., 2025).

Employee job commitment defined as the psychological attachment and dedication an employee demonstrates toward their job and organization (Ismael et al., 2021) plays an influential role in interpreting positive appraisal experiences into enhanced job performance (Cesário & Chambel, 2017). Thus, once employees discover the performance appraisal processes is transparent, fair, and developmental, they are more likely to exhibit stronger job commitment, at that time fosters motivation, engagement, and productivity (Opoku et al., 2024; Mwape, 2025). Correspondingly, poorly executed appraisal systems may demotivate employees, thereby weakening their commitment and overall performance (Opoku et al., 2024).

Existing researches has empirically established that employee job commitment act as a dynamic factor connecting performance appraisal to job performance (Shim et al., 2024). Job

commitment, identified as the degree of an employee's emotional attachment to their work environment, includes three distinct components: affective commitment (emotional attachment), continuance commitment (attachment based on perceived costs of leaving), and normative commitment (a sense of moral obligation to remain), as conceptualized by Meyer and Allen (1991). Consequently, once employees perceive performance appraisal processes is developmental, transparent, and equitable, they tend to demonstrate stronger commitment across these dimensions, which subsequently improves their job performance (Iqbal et al., 2021; Shawn, 2023).

Evidently, a study of Nigerian banking employees opens that only 52% of bank employees believe their performance appraisals are fair and unbiased, while over 61% express discontent with the feedback and reward systems associated to appraisals (KPMG Nigeria HR Survey, 2022). Thus, this discrepancy designates a misalignment between performance management practices and employee expectations, potentially exhausting job commitment and performance outcomes (Van Waeyenberg, et al., 2022). Therefore, attesting fairness in performance appraisal processes may foster all forms of commitment among employees and is essential for consolidating their willingness to perform and remain faithful to their organizations (Alqahtani, 2024; Sarwar et al., 2025).

Though, numerous studies in the literature have examined the relationship between various human resource management practices and employee performance outcomes (Iqbal et al., 2021; Shawn, 2023; Alqahtani, 2024; Sarwar et al., 2025), only a limited number have considered employee job commitment specifically affective, continuance, and normative commitment as mediating variables in the performance appraisal to job performance nexus, particularly in the Nigerian banking industry context.

Hence, the present study determined to examine the degree to which performance appraisal stimulates employee job performance within Nigerian financial sub-sector, with particular emphasis on the mediating effects of all three forms of commitment. Specifically, it investigates how different dimensions of job commitment outline the association of appraisal systems with job performance outcomes. The study pursues to deliver profounder understandings into how psychological attachment and commitment mechanisms can improve the efficiency of performance management practices in Nigeria's financial sector.

2.0 Literature Review, Hypotheses Development, and Theoretical Framework

This segment of the study reviews the appropriate literature that showcase the established relationships of the study, precisely the study examined prior research on job performance, performance appraisal, and job commitments.

2.1 Employee Job Performance

Job performance denotes to the amount to which an employee excellently performs allocated duties and tasks in alignment with organizational objectives. It includes observable behaviours that contribute to the achievement of organizational goals and general success (Gagné, 2018). Similarly, Meirinhos et al. (2023) explain employee job performance as the output generated through employees' work behaviours, which organizations may evaluate as either productive or counterproductive. Additionally, Rodriguez and Walters (2017) conceptualize job performance as the capacity of workers to effectively accomplish allocated tasks. Consequently, assessing job performance enables organizations to determine employee efficiency, effectiveness, and general contribution to organizational outcomes (Ugoani, 2020; Vuong & Nguyen, 2022).

According to Abdullah and Wan (2013), employee job performance is defined as "behaviours or actions that are relevant to the goals of the organization." However, other studies such as Okolie, and Orhero, (2020) conceptualize job performance as behaviour exhibited or actions taken by employees to augment overall organizational performance, measured based on operational outcomes, sales volume, revenue generated, return on shareholders' investment, and the quality and quantity of service offerings. Hence, job performance is not a single unified concept but rather a multidimensional construct encompassing several types of behavior (Podsakoff et al., 2016). For instance, the service industries produce intangible goods, and the value of services is primarily projected based on the immediate performance of service employees (Chen, & Chi, 2022). Hence, it can be concluded that job performance represents an output resulting from employees' efforts (Secchi et al., 2019).

Therefore, job performance is typically regarded as a multidimensional construct rather than a singular, unified concept, encompassing various forms of work-related behaviours (Bhat & Bashir, 2025). In service-oriented industries, where outputs are largely intangible, service quality heavily depends on employees' immediate performance (Chen & Chi, 2022). Ultimately, job performance can be understood as the outcome derived from employees' efforts, reflected in both behavioral contributions and measurable organizational results (Saidin et al., 2024).

2.2 Performance Appraisal

Performance appraisal is a predictable organizational communication process planned to evaluate past performance, identify areas for expansion, and establish future objectives. It is observed as a systematic practice used by management to measure and evaluate an employee's job performance, skills, strengths, and areas requiring enhancement (Opoku et al., 2024). This

process typically involves setting performance standards, assessing actual performance, providing feedback, and discussing future goals (Nothacker et al., 2015). Performance appraisals is commonly conducted using various approaches, including self-assessment, manager appraisals, peer appraisals, 360-degree feedback among others (Rafiq et al., 2023).

At its core, performance appraisal institutes an organized and periodic exercise of assessing an employee's performance and output in relation to pre-established goals, objectives, and overall job responsibilities (Birhanu, 2019; Attipoe et al., 2021; Ayirebi, 2022). The principal objectives of performance appraisal include identifying employee accomplishments, detecting development needs, enhancing individual and organizational performance, and supporting career growth (Opoku et al., 2024). It also assists employees in their development and facilitates organizational progress in terms of performance (Setiawati & Ariani, 2020). Numerous studies have designated that performance appraisal is significantly related to employee job commitment (Setiawati & Ariani, 2020) and eventually influences employee job performance (Ahuja et al., 2018; Opoku et al., 2024). Based on these considerations, the following hypothesis was formulated to guide the study:

H01: Performance appraisal significantly influences employee job performance in the Nigerian banking industry.

2.3 Employee Job Commitment

Employee job commitment refers to the psychological bond or emotional connection an employee has toward their job, organization, and the work they perform (Mahmood Aziz et al., 2021). It also reflects the degree to which employees identify with their work roles, are willing to exert effort on behalf of the organization, and continue with the employment over time (Ahmad, 2018). Commitment influences not only employees' intentions to stay but also their level of performance, engagement, and adaptability in the workplace (Gull et al., 2020).

Active employee job commitment often leads to amplified productivity, reduced turnover rates, enhance stronger teamwork, and improved organizational performance. Moreover, employees who are committed to an organization possess a strong desire to remain as members and are prepared to exert maximum effort to sustain the organization (Adirama & Esthi, 2025). Equally, low commitment can result in disengagement, absenteeism, and increased employee turnover (Masindi et al., 2023). Thus, employee job commitment extends beyond mere presence at work, it includes how deeply employees are invested in their roles, their willingness to exceed minimum expectations, and their intention to remain part of the organization's journey (Adirama & Esthi, 2025). Researchers often conceptualize job commitment through three core

dimensions: affective, continuance, and normative commitment based on original conceptualization of (Meyer & Allen, 1991), which are discussed as follows:

2.3.1 Affective Commitment

Affective commitment is defined as the emotional attachment of an employee toward their job and organization. Employees with robust affective commitment willingly remain with their organization; they derive personal satisfaction, meaning, and alignment of values from their work (Kaur & Mittal, 2020). Such employees are more likely to go beyond required efforts, engage in discretionary behaviours, and maintain high quality work (Akinyemi et al., 2022). They are also less likely to engaging in counterproductive work behavior. Performance appraisal enhances job performance partly because it strengthens emotional attachment to the organization (Osman, et al., 2024). However, without affective commitment, even a technically sound appraisal may not fully translate into sustained performance (Hirschi & Spurk, 2021). Likewise, emotionally committed employees tend to exhibit enhanced performance systems that can be assessed through increased output, additional sales units, higher profit margins, and improved employee retention rates (Kaur & Mittal, 2020). Hence, the study frames the following hypothesis:

H02: Affective commitment mediates the relationship between performance appraisal and employee job performance.

2.3.2 Continuance Commitment

Continuance commitment signifies the alleged costs related to leaving the job. Employees remain with their organization because they need to, often driven by economic contemplations, accumulated benefits, job security, or the absence of alternative employment opportunities (Meyer & Allen, 1991). High continuance commitment can influence job performance, though often indirectly, as employees may exercise effort to maintain employability, secure rewards, and avoid the negative costs of poor performance (Jaros, 2017). Studies suggest that components of human resource practices, including performance appraisal, can influence organizational commitment dimensions, including continuance commitment, to enhance job or organizational performance (Meyer & Allen, 1991; Imran et al., 2014; Azeem & Akhtar, 2014; AlZgool et al., 2019). Thus, once employees observe performance appraisal systems is fair, transparent, and beneficial, they may feel that leaving the organization would result in the loss of accumulated benefits or career progress (Lu et al., 2023; Opoku et al., 2024), in that way increasing continuance commitment and then enhancing job performance. Hence, the study established the following hypothesis:

H03: Continuance commitment mediates the relationship between performance appraisal and employee job performance.

2.3.3 Normative Commitment

Normative commitment denotes as the sagacity of outfitted compulsion to endure with your work. Employees remain not only because they wish to, but also because they feel motivated by allegiance, social norms, or a wisdom of duty. Normative commitment specifically denotes an employee's feeling of obligation to remain with and contribute to their work place (Meyer & Allen, 1991). When employees feel they "ought to" stay and perform due to perceived loyalty, reciprocity, or moral duty, this sense of obligation can influence how they respond to the work place practices such as performance appraisal (Bahadır, et al., 2024). Thus, fair, transparent, and developmental performance appraisal signals that the organization values its employees and devotes to their improvement (DeNisi & Murphy, 2017). Accordingly, this might generate a sagacity of ethical compulsion, prime individual to return with enhanced effort and improved performance not merely because they want to, but because of their impression "this is the right thing to do" (Wang et al., 2020).

In this way, normative commitment serves as the psychological bond between appraisal systems and real job performance. Likewise, positive feedback and recognition during appraisals foster feelings of indebtedness and loyalty (Meyer & Parfyonova, 2010). Equally, once employees feel indebted to their organizations tend to invest continuous effort, comply with policies, and maintain performance standards (Suliman & Al Kathairi, 2013). Furthermore, the study of Wang et al. (2020) confirmed that fair and supportive appraisal systems amplified employees' sense of obligation, which in turn enhanced task performance in Chinese manufacturing firms. Hence, the optimistic consequence of appraisal on performance can be clarified through amplified normative commitment. Consequently, the study theorizes this:

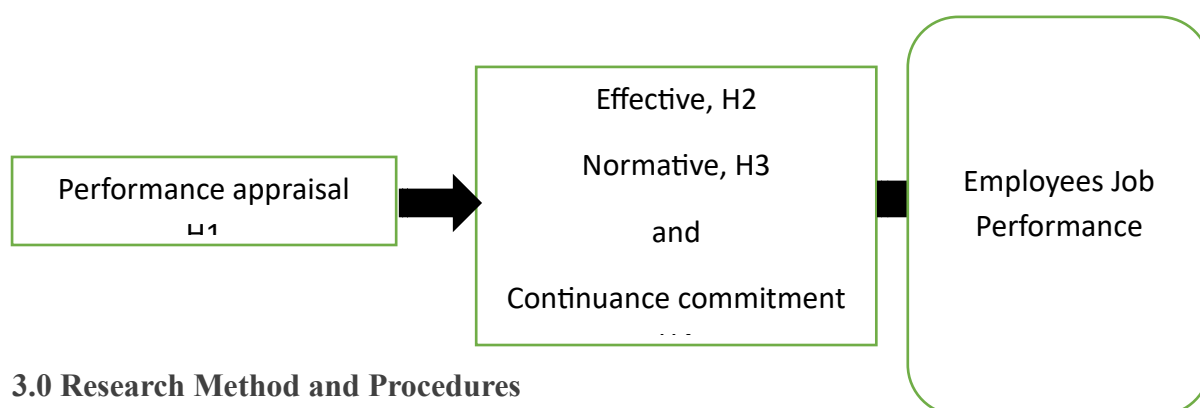
H04: Normative commitment mediates the relationship between performance appraisal and employee job performance.

2.4 Theoretical Framework of the Study

The present study is anchored on Social Exchange Theory (SET), the theory was advocated by Blau in (1964), the theory emphasizes on reciprocity in social relationships. It explains how performance appraisal, regarded as an organizational investment, that influences employee job performance through the facilitating role of employee commitment. SET advocate that when one party provides benefits, the other feels obligated to reciprocate (Törrönen, 2017). Hence,

fair and developmental performance appraisals deliver feedback, recognition, and growth prospects (Tate et al., 2021), thus employees may perceive as organizational support, motivating them to reciprocate with improved performance (Wang et al., 2022).

Furthermore, once employees perceive fairness and support, they develop affective, continuance, and normative commitment (Nazir et al., 2018; Fatema et al., 2025). These forms of commitment strengthen motivation, loyalty, and obligation, leading to enhanced job performance. Consistent with SET's principle that trust and obligation drive reciprocal behaviour, committed employees are more likely to surpass role expectations. Eventually, job performance replicates employees' reciprocation for perceived organizational support through appraisal systems, as committed employees tend to exert greater discretionary effort (Rubel et al., 2023). Accordingly, employee commitment serves as the key mediating mechanism linking performance appraisal to job performance.



3.0 Research Method and Procedures

Figure 1 Conceptual Diagram

The diagram presented above (Figure 1) portrays the established association flanked by performance appraisal with employee job performance in a direct way and though affective, normative, and continuance commitment.

3.0 Methodology

3.1 Data and Sample

This study adopted a cross-sectional survey study strategy and quantitative in nature, as it composed information about the study constructs at a particular time. Primary data was composed from respondents utilizing a self-administered form. The study population comprised employees of Deposit Money Banks operating within Kano Metropolitan, Nigeria. This study utilized a non-probability sampling technique, precisely using an online survey

technique, to obtain responses. Data were collected electronically using a Google Form, distributed through referral networks and online platforms.

This study actualized a total of 297 responses. However, 11 questionnaires contained more than 10% missing data, and one response was acknowledged as unengaged; these were excluded from the analysis. Consequently, 285 valid responses were retained for statistical analysis, according to the recommendations of Hair et al. (2022) regarding data screening procedures.

3.2 Measurement of Variables

Employee Job Performance (EJP), the dependent variable, was measured using a six-item scale developed by Otoo and Mishra (2018). Example of the questions cover: "I have the competencies required for my job" and "I work effectively and efficiently."

Likewise, Performance Appraisal (PFA), the independent variable, was assessed using a 12-item instrument developed by Bekele et al., (2014). Example of the items include: "I am satisfied with how the performance appraisal system evaluates and rates my performance" and "The current performance appraisal system is fair and unbiased."

Similarly, Affective Commitment (AFC) was measured with six-items scale from Meyer and Allen (1991), including statements such as: "I would be very happy to spend the rest of my career with this organization" and "I feel as though this organization's problems are my own". Additionally, Continuance Commitment (COC) was also assessed also using six-items from Meyer and Allen (1991). Sample items include: "It would be very difficult for me to leave this organization right now, even if I wanted to" and "Leaving this organization would disrupt my life considerably."

Finally, Normative Commitment (NOC) was assessed with six-items from Meyer and Allen (1991), with examples such as: "I feel an obligation to remain with my organization" and "Even if it were to my advantage, I would not feel it is right to leave". All these measurement scales were rated on a five-point Likert scale extending from "strongly disagree" to "strongly agree." Earlier than the main research exercise, the instrument was sent for vetting and validation by subject-matter specialists to attest clarity and content validity.

3.3 Data Analysis Technique

The data of this study was processed using SmartPLS Version 4, the PLS SEM facilitated the evaluation of both the measurement and structural models in line with Partial Least Squares Structural Equation Modeling (PLS-SEM) as advocated by Cheah et al. (2024). The PLS-SEM technique is selected for its methodological pliability, chiefly its lack of reliance on normally distributed data and its pertinence to complex theoretical models across varying sample sizes (Ringle et al., 2020). Similarly, this approach improves the precision and dependability of

parameter estimates by incorporating measurement error into the analytical procedure, consequently enhancing the credibility of theory testing and validation (Hair et al., 2021).

4.0 Results and Discussion

4.1 Assessment of Measurement Model

The suitability of the measurement model was determined by applying several reliability and validity metrics. These included individual item reliability (evaluated through outer loadings), internal consistency reliability (assessed via composite reliability and Cronbach's alpha), as well as convergent and discriminant validity, resulting the guidelines established by Henseler et al. (2018).

Moreover, Hair et al. (2022), acceptable benchmarks for scale validation include outer loadings of 0.70 or above, an Average Variance Extracted (AVE) of no less than 0.50, and internal consistency coefficients (both composite reliability and Cronbach's alpha) of 0.70 or higher. The findings confirming the reliability and validity of the constructs examined in this study are displayed in Figure 2 and Table 1 below.

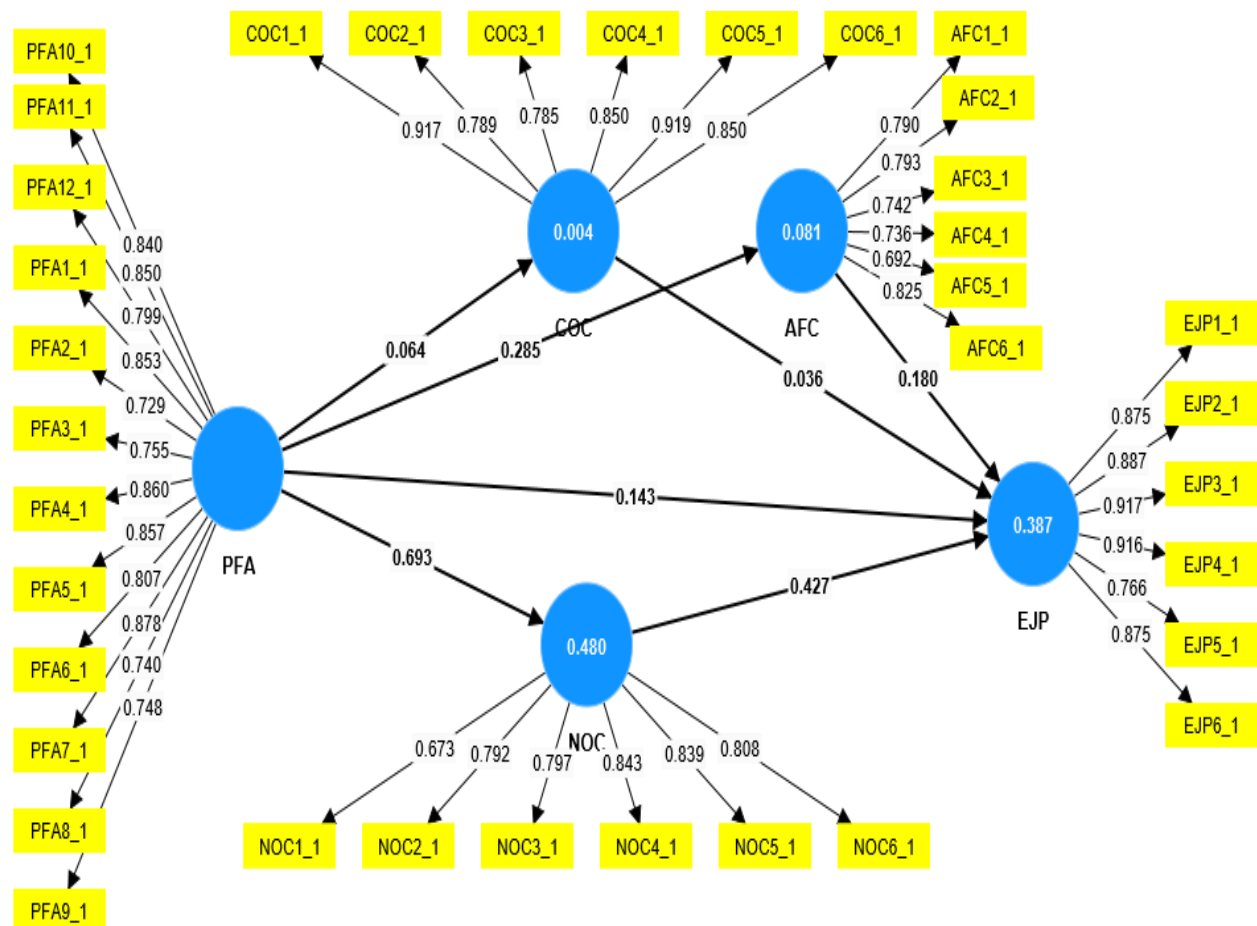


Figure 2 Measurement Model (PLS Algorithm)

Table 1. Results of measurement model and convergent validity

Constructs	Items	Loadings	C/alpha	C/R	AVE
Affective Commitment	AFC1_1	0.79	0.89	0.89	0.58
	AFC2_1	0.79			
	AFC3_1	0.74			
	AFC4_1	0.74			
	AFC5_1	0.69			
	AFC6_1	0.82			
Continuance Commitment	COC1_1	0.92	0.92	0.94	0.73
	COC2_1	0.79			
	COC3_1	0.78			
	COC4_1	0.85			
	COC5_1	0.92			
	COC6_1	0.85			
Employee job performance	EJP1_1	0.88	0.94	0.95	0.76
	EJP2_1	0.89			
	EJP3_1	0.92			
	EJP4_1	0.92			
	EJP5_1	0.77			
	EJP6_1	0.88			
Normative Commitment	NOC1_1	0.67	0.88	0.91	0.63
	NOC2_1	0.79			
	NOC3_1	0.80			
	NOC4_1	0.84			
	NOC5_1	0.84			
	NOC6_1	0.81			
Performance appraisal	PFA10_1	0.84	0.95	0.95	0.66
	PFA11_1	0.85			
	PFA12_1	0.80			
	PFA1_1	0.85			
	PFA2_1	0.73			
	PFA3_1	0.75			
	PFA4_1	0.86			

PFA5_1	0.86
PFA6_1	0.81
PFA7_1	0.88
PFA8_1	0.74
PFA9_1	0.75

All latent constructs in the study demonstrated adequate reliability, as indicated by their respective factor loadings, Cronbach's alpha values, and composite reliability values, all of which topped the indorsed limit of 0.70. with the exception of AFC5_1 and NOC1_1 that has 0.69 and 0.67 Respectively. Even though they have the loading lower than threshold they study retain them because they are close 0.70 and their deletion may not improve AVE, Besides, the items are still within the specification of Hair et al. (2013) who acknowledged that outer loading larger than 0.40 but less than 0.70 ought to be wisely scrutinized and ought to be removed only if it increases the value of CR and AVE. Furthermore, all the constructs exhibited satisfactory convergent validity, as the AVE values for each construct exceeded 0.50.

Discriminant validity was also established, as the square roots of the AVEs for each construct were greater than the correlations with any other construct, confirming that each latent construct is conceptually distinct and not strongly correlated with others. Consequently, all measurement items reported in Table 1 satisfied the criteria for both reliability and convergent validity.

Additionally, to evaluate discriminant validity, the Heterotrait-Monotrait (HTMT) ratio of correlations was employed, with results presented in Figure 3 and Table 2. Below. The HTMT ratio compares correlations between constructs (heterotrait) with those within the same construct (monotrait), offering a more robust assessment of discriminant validity.

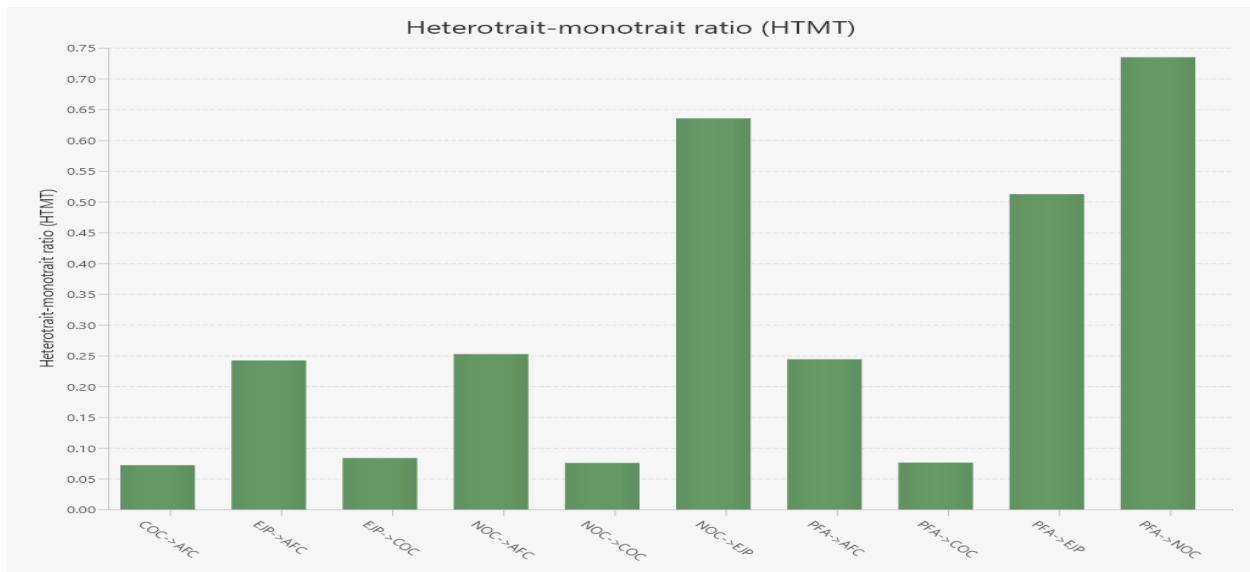


Figure 3 Heterotrait-Monotrait Ratio (HTMT)

Table 2: Heterotrait-Monotrait Ratio (HTMT)

Constructs	AFC	COC	EJP	NOC	PFA
Affective Commitment					
Continuance Commitment	0.07				
Employee job performance	0.24	0.08			
Normative Commitment	0.25	0.08	0.64		
Performance appraisal	0.24	0.08	0.51	0.74	

Consistent with Afthanorhan et al. (2021), a threshold of 0.85 is suggested for HTMT, while Usakli and Kucukergin (2018) Recommend that values should not exceed 0.90. thus, the HTMT results in Figure 3 and Table 2 above indicate that all values fall less than 0.85, thus confirming the discriminant validity of the constructs used in this study and supporting the robustness of the measurement mode

4.2 Structural Model Assessment

Succeeding the evaluation of the measurement model, the successive step involved assessing the structural model. This stage commenced with an analysis of the hypothesized theoretical relationships. A standard bootstrapping procedure was applied, utilizing a sample of 285 bank employees serving within Kano Metropolitan and 5,000 bootstrap resamples, to determine the statistical significance of the path coefficients, following the recommendations of Hair et al. (2022). According to Hair et al., structural model evaluation in PLS-SEM using SmartPLS 4 should focus on three key indicators: the significance of path coefficients, the coefficient of

determination (R^2), and the effect size (f^2). The results of the hypothesis testing are presented in Figure 4 and summarized in Table 3.

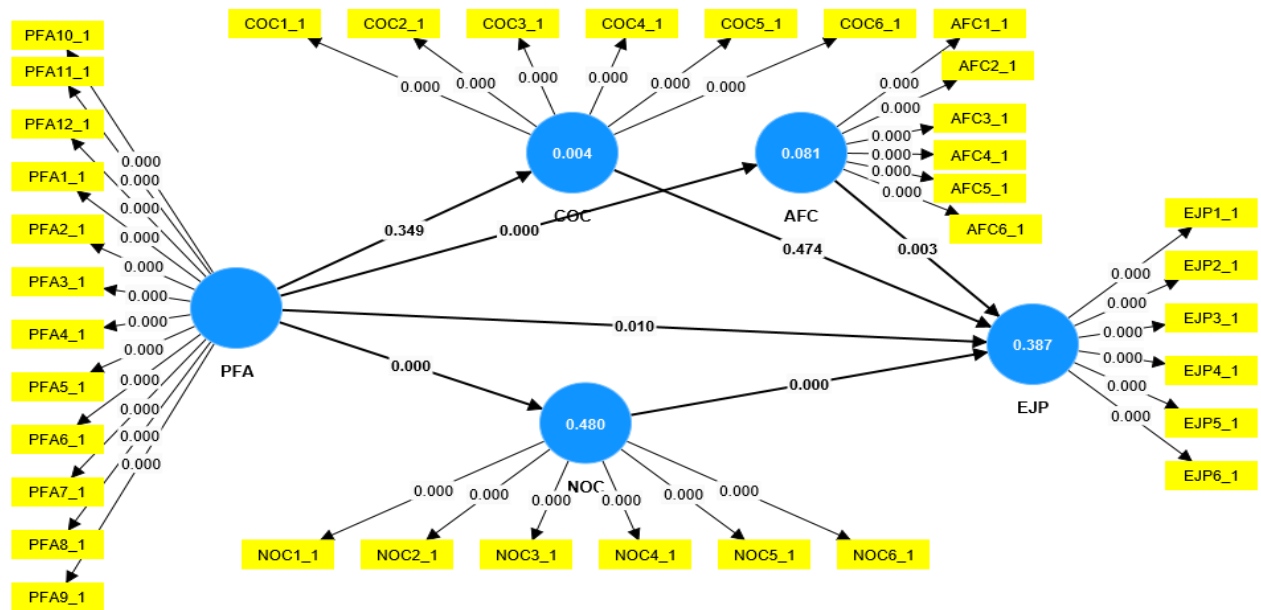


Figure 4 The structural model (PLS-SEM Bootstrapping)

TABLE 3: Hypotheses testing.

Relationship	Beta	STDEV	T statistics	P values	Decision
PFA -> EJP	0.35	0.05	7.65	0.00	Supported
PFA -> AFC -> EJP	0.05	0.02	3.16	0.00	Supported
PFA -> COC -> EJP	0.00	0.01	0.45	0.66	Fail to Support
PFA -> NOC -> EJP	0.30	0.05	6.00	0.00	Supported

The bootstrapping result in Table 3 shows that all the direct and indirect relationships were significant except. PFA -> COC -> EJP that indicated positive but insignificant mediating relationship $t = 0.45$, $p = 0.66 > 0.05$). Precisely, PFA -> EJP was significantly related ($t = 7.65$, $p < .05$). The Results shows mediating Relationship PFA as shown in Table 3 PFA -> AFC -> EJP ($t = 3.16$, $p < .05$), finally PFA -> NOC -> EJP ($t = 6.00$, $p < .05$). However, an insignificant but positive mediating relationship was found between PFA -> COC -> EJP ($t = 0.45$, $P = 0.66 > 0.05$) at 5% level of significance. Table 3 results are represented graphically in Figure3, where the T-values are expressed on the lines between the independent variables and dependent variable

Table 4: Bootstrapped confidence interval

Relationship	Beta Values	LL2.5%	UL97.5%	P. Values
PFA -> AFC -> EJP	0.051	0.025	0.089	0.00

PFA -> COC -> EJP	0.002	-0.007	0.015	0.66
PFA -> NOC -> EJP	0.296	0.203	0.396	0.00

A hypothesis is supported when zero is not contained within the lower and upper confidence interval limits. Concerning the mediating relationships, despite the significance observed in path coefficients (Beta), T-statistics, and corresponding p-values, the acceptance or rejection of hypotheses depends on the absence of zero within the confidence interval boundaries, determined through bootstrapping standard error as per Hair et al. (2017). Examining Table 4, it becomes evident that none of the confidence intervals for the significant relationships contain zero or negative sign, as indicated by positive lower limits and upper bounds, except for PFA → COC → EJP. Afterward, the observed evidence validated the hypothesized mediating roles of affective commitment and normative commitment in the relationship between performance appraisal and employee job performance, while rejecting the projected mediating effect of continuance commitment.

4.3 Discussion of Findings

This research is scientifically studied a structural model investigating the association among performance appraisal and employee job performance, with affective, continuance, and normative commitment serving as mediating variables. The study is notionally stuck on Social Exchange Theory (SET), formerly formulated by Blau (1964). The Information collected from bank employees in Nigeria were utilized to assess the hypotheses and structural model, thereby satisfying the study's research objectives. The findings are pondered in relation to each research objective and hypothesis.

For addressing the first objective, the connotation between performance appraisal and employee job performance within Nigeria's banking sector was examined. A hypothesis proposing a positive relationship between these constructs was evaluated using Smart-PLS4 software. The results revealed a statistically significant positive association between performance appraisal and job performance. Hence, the outcome validates the earlier research (e.g., Muhammad et al., 2018; Tiwari, 2020), which documented that performance appraisal positively affects employee performance. This result also corresponds with Khahan et al. (2020), who established that performance appraisal is significantly linked to organizational citizenship behavior, suggesting that employees who view appraisal processes as equitable demonstrate greater commitment and engage in positive voluntary behaviors. Furthermore, the result reinforces the conclusions of Ezenwaka and Okoro (2020), who determined that performance appraisal, alongside training and compensation, considerably effects employee productivity.

With relevance to the second connection, the results established that performance appraisal exerts a positive influence on affective commitment, which subsequently enhances employee job performance. The outcome directly addresses the study's second objective concerning the mediating function of affective commitment in the appraisal-performance relationship. The PLS analysis indicated that affective commitment serves as a partial mediator in this relationship. Even though research explicitly examining this mediating effect remains limited, the result aligns with Iqbal et al. (2015), who identified a positive connection between performance appraisal and affective commitment. Similarly, Pepple and Ambilichu (2024) exposed that performance appraisal positively influences employee commitment through the mediating mechanism of job satisfaction. Therefore, equitable appraisal schemes strengthen employees' emotional connection to their organization, which consequently improves their job performance.

About the third hypothesis, which postulated that continuance commitment mediates the performance appraisal-job performance relationship, the PLS results showed a positive yet statistically insignificant mediating effect. The finding is not surprising, as Ambilichu et al. (2024) similarly found no substantial relationship between performance appraisal outcomes and employee job commitment among UK academic staff. Nevertheless, this result diverges from earlier investigations (e.g., Malietso et al., 2023), which identified a significant positive association between continuance commitment and job performance. The inference is that within the Nigerian banking context, perceptions of appraisal fairness do not necessarily translate into performance enhancements through continuance commitment.

Lastly, with reverence to the fourth hypothesis, the results discovered that normative commitment plays a significant mediating role in the relationship between performance appraisal and employee job performance. The results indicate that effective performance appraisal positively reinforces employees' normative commitment, which in turn fosters elevated levels of job performance. This outcome is consistent with Rafiei et al. (2014), who's reported that all three commitment dimensions affective, continuance, and normative purposefully impact job performance. It also aligns with Na-Nan et al. (2020), who identified organizational commitment as a mediator between performance appraisal and organizational citizenship behavior. Consequently, when employees perceive appraisal practices as fair, translucent, and supportive, they are more motivated to experience a moral obligation to reciprocate through enhanced job performance.

5.0 Conclusion and Recommendations

5.1 Conclusion

The study examined how affective, normative, and continuance commitment mediate the relationship among performance appraisal and employee job performance within Nigeria's banking sector, utilizing Social Exchange Theory as its conceptual foundation. The results confirmed that performance appraisal significantly influences employee job performance, with this relationship being strengthened through affective and normative commitment. Accordingly, employees who perceive appraisal systems as equitable, transparent, and development-oriented are more prone to cultivate emotional attachment (affective commitment) and a sense of moral duty (normative commitment), which subsequently elevates their performance (Shawn, 2023; Vidè et al., 2023; Osman et al., 2024).

Nevertheless, the outcomes showed that continuance commitment did not significantly mediate the performance appraisal-job performance relationship. This suggests that within Nigerian banks, employee performance is not predominantly driven by considerations of leaving-related costs, such as job insecurity or limited employment alternatives (Adewale et al., 2020; Adekunle & Adegoroye, 2021). Relatively, performance improvement is more powerfully associated with emotional attachment and the moral imperative to reciprocate positive organizational practices (Sekerka et al., 2014; Wang et al., 2019).

Essentially, the outcomes support the propositions of Social Exchange Theory, which maintains that favorable organizational treatment prompts employees to reciprocate through positive work behaviors (Cropanzano et al., 2017; Yin, 2018). This research contributes to the existing literature by furnishing empirical evidence from a developing country context and by elucidating the distinctive roles of affective, normative, and continuance commitment in supporting the connection between performance appraisal and employee performance in the Nigerian banking sector.

5.2 Recommendations

Based on the findings, the following recommendations are proposed by the study:

- I. The Bank management ought to ensure that performance appraisal systems is translucent, objective, with focused on employee development rather than simple administrative evaluation. Thus, Fair appraisal practices will enhance employees' perceptions of organizational support, thereby fostering affective and normative commitment.
- II. Banks Management should also implement best human resource practices that build emotional attachment, such as recognition of employee achievements, productive feedback, professional development chances, as well as participative decision-making.

These practices will encourage employees to reciprocate with sophisticated echelons of job performance.

- III. The Banks Management should also emphasize on the ethical leadership, organizational ideologies, along with philosophy of common respect. Thus, When employees see that the organization capitalizes on their well-being and skilled development, they might feel a sagacity of duty to perform optimally.
- IV. Given that continuance commitment did not intermediate the appraisal and job performance, banks should evade relying on job insecurity or lack of alternatives as a strategy for retaining employees. Such approaches may keep employees physically present but do not translate into enhanced performance.
- V. Regulators and policymakers in the Nigerian banking sector should hearten appraisal frameworks that emphasize fairness, feedback, and employee development. Training programs for managers on effective appraisal delivery can further enhance the constructive exchange relationship flanked by employees organizations.

5.3 Limitations and Suggestions for Further studies

Notwithstanding the valuable contributions, a number of limitations are also accepted, that offer avenues for upcoming studies. These include the following

Firstly, the research utilized a cross-sectional study design, collected data at a single point in time. This technique limits the competence to produce causal associations amongst performance appraisal, employee commitment, and job performance. Though this study acknowledged substantial relations, this causality cannot be ultimately reliant on. Future studies should consider applying longitudinal plans to track variations over time and better understand the reversing nature of these relationships.

Secondly, the study focused completely on workers of deposit money banks operating within Kano Metropolitan, Nigeria. This geographical and sectoral concentration limits the generalizability of the findings to other regions within Nigeria or to other industries. Employee perceptions and experiences of performance appraisal may differ across geographic locations and organizational settings. Future researches should extend the scope to other states, regions, and sectors (such as insurance, telecommunications, or manufacturing) to improve the external validity of the findings.

Thirdly, the study employed a non-probability sampling technique (online survey method), which may introduce selection bias. Respondents who voluntarily participated might differ systematically from those who did not, potentially affecting the representativeness of the

sample. Future research should consider using probability sampling techniques to improve sample representativeness and enhance the generalizability of results.

Finally, the study heavily relied on self-reported measures for all variables, which might be subject to common method bias and social desirability bias. Employees might have over-reported their performance or commitment levels due to perceived expectations. Future studies should incorporate multi-source data collection methods, such as supervisor ratings, peer evaluations, or objective performance records,

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HARNESSING HONEY-BASED ANTIMICROBIALS FOR SUSTAINABLE HEALTH
AND RURAL ENTREPRENEURSHIP IN EMERGING ECONOMIES

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ABSTRACT

The global challenge of antimicrobial resistance (AMR) continues to threaten public health and economic stability, particularly in emerging economies where access to affordable healthcare and effective antibiotics remains limited. This paper explores the potential of honey-based antimicrobials as a dual catalyst for sustainable healthcare and rural entrepreneurship. Honey possesses significant antimicrobial, anti-inflammatory and wound-healing properties attributed to its hydrogen peroxide, methylglyoxal, bee defensin-1 and phenolic compounds. These bioactive agents make honey a viable natural alternative to synthetic antibiotics. In addition to its potential as a medicine, the apiculture sector offers an unrealized business opportunity that could empower rural communities, alleviate poverty and promote sustainable agricultural ecosystems. An integrated model that connects sustainable development, local entrepreneurship, and public health is proposed by this study, which combines economic data on honey production and trade with empirical research on the antimicrobial efficacy of honey. The findings support national policies that provide incentives for honey research, quality assurance, and commercialization, in order to improve rural livelihoods and healthcare resilience.

Keywords: Honey, antimicrobial resistance, sustainable health, rural entrepreneurship, emerging economies

1. INTRODUCTION

Antimicrobial resistance (AMR) has become one of the 21st century's most urgent worldwide health issues. According to the World Health Organization (WHO), AMR is one of the top ten global public health threats. If drug-resistant infections are not controlled, they could result in 10 million deaths every year by 2050 (O'Neill, 2016; WHO, 2021). Inadequate healthcare infrastructure, restricted access to high-quality medications, and widespread antibiotic abuse have all contributed to the emergence and spread of resistant bacteria, making this crisis especially severe in emerging nations (Laxminarayan et al., 2013; Okeke et al., 2005).

In this regard, the quest for alternative antimicrobial drugs has accelerated significantly (Álvarez-Martínez et al., 2020). Due to its well-established antibacterial qualities and its long history of usage as a natural medicine in many cultures, honey has attracted significant attention among the many natural products under research (Eteraf-Oskouei & Najafi, 2013; Zumla & Lulat, 1989). Honey has a complex multidimensional mode of action that renders the emergence of bacterial resistance difficult, in comparison to synthetic antibiotics (Blair et al., 2009; Cooper et al., 2010).

Natural antimicrobials are appealing substitutes due to rising antibiotic resistance and restricted access to contemporary medical care in developing nations. According to Bradbear (2009) and Pocol & Bolboacă (2013), apiculture offers a special chance for rural economic development in emerging economies, in addition to its potential for medical use. The beekeeping industry is environmentally sustainable, requires little initial investment, and can be combined with current farming methods. Honey is a strategic resource for sustainable development due to its dual potential as a healthcare solution and an economic driver (FAO, 2023; Hilmi et al., 2011). Infectious diseases and scarce healthcare resources are two issues that emerging nations must deal with (WHO, 2021). This problem has been made worse by the increase in antimicrobial-resistant diseases, which make many conventional drugs useless (Murray et al., 2022). In the meantime, rural communities in these areas frequently lack access to economic opportunities and basic healthcare services, which prolongs cycles of poverty and poor health outcomes (Woolhouse et al., 2015). Even though apiculture is profitable and honey has been shown to have antibacterial qualities, these resources are still substantially underutilized to address these interrelated issues (Bogdanov, 2016; Molan, 2006).

By combining biomedical research with thoughts on economic growth, this study fills a significant gap in the literature and offers practitioners and policymakers practical suggestions.

It investigates the relationship between public health, rural entrepreneurship, and honey-based antimicrobials in developing nations. The study aims to assess the economic possibilities of

apiculture for rural communities, offer a thorough study of the scientific data demonstrating honey's antimicrobial activity, and suggest an integrated approach that makes use of honey production for both economic and health results.

The objectives of this study are to:

1. Review the scientific data about honey's antibacterial qualities and how it works against harmful microbes.
2. Assess apiculture's potential as a viable source of income for rural people in developing nations.
3. Explore the market conditions and policy frameworks required to develop honey-based antimicrobial products.
4. Propose an integrated strategy for sustainable development that connects rural enterprise, healthcare, and honey production.

2. LITERATURE REVIEW

2.1 The Global Challenge of Antimicrobial Resistance

Antimicrobial resistance happens when bacteria, viruses, fungi, and parasites evolve mechanisms to withstand drugs designed to eliminate them (WHO, 2021). The overuse and abuse of antimicrobial drugs in agriculture, animal husbandry, and human medicine has significantly expedited this natural evolutionary process (Laxminarayan et al., 2013; Van Boeckel et al., 2014). The repercussions are dire, once-treatable infections are now difficult or impossible to cure, resulting in longer illnesses, more medical expenses, and higher death rates (Murray et al., 2022).

The AMR dilemma is made worse in emerging nations by a number of factors. These include a lack of qualified healthcare workers, poor sanitation and infection control procedures, insufficient regulation of antibiotic sales, and limited diagnostic capabilities (Okeke et al., 2005; Sosa et al., 2010).

Additionally, the high burden of infectious diseases in these regions creates greater demand for antimicrobial treatments, further driving resistance development. The economic impact is substantial, with AMR-related productivity losses disproportionately affecting low- and middle-income countries (O'Neill, 2016; World Bank, 2017).

The security of global health and the viability of contemporary medicine are particularly threatened by the rise of multidrug-resistant pathogens. Methicillin-resistant *Staphylococcus aureus* (MRSA), vancomycin-resistant *Enterococci* (VRE), extended-spectrum beta-lactamase (ESBL)-producing *Enterobacteriaceae*, and carbapenem-resistant organisms are among the

pathogens that have become more common in healthcare and community settings globally (Tacconelli et al., 2018). The search for alternative antimicrobial strategies is an urgent global priority that requires creative approaches because these resistant organisms complicate treatment decisions, increase healthcare costs through longer hospital stays and more expensive second-line treatments, and contribute to worse patient outcomes, including higher mortality rates.

2.2 Honey in Traditional Medicine

Ancient Egyptian, Greek, Roman, and Ayurvedic medical traditions have all used honey medicinally for thousands of years (Eteraf-Oskouei & Najafi, 2013; Zumla & Lulat, 1989). According to archeological evidence, early Neolithic farmers in Europe and the Near East used honey extensively (Roffet-Salque et al., 2015). Ancient Egyptian medical papyri, including the famous Edwin Smith Papyrus dating to approximately 1600 BCE and the Ebers Papyrus from approximately 1550 BCE, describe the use of honey in wound dressings and various medicinal preparations, while Hippocrates recommended honey for treating various ailments including wounds, ulcers, and skin conditions (Molan & Rhodes, 2015). Honey has been utilized to cure burns, wounds, gastrointestinal issues, and respiratory infections in numerous African and Asian civilizations (Bogdanov, 2016). This ancient knowledge serves as a basis for contemporary scientific research on the medicinal qualities of honey.

According to Samarghandian et al. (2017), the renewed interest in honey as a therapeutic agent is indicative of larger trends in natural and integrative medicine. Researchers and medical professionals have looked more closely at conventional treatments as worries about antibiotic resistance and the negative consequences of synthetic medications have grown (Molan, 2006). Honey is especially appealing for healthcare uses in situations with limited resources because to its broad availability, cultural acceptability, and safety profile (Carter et al., 2016).

2.3 Scientific Basis for Honey's Antimicrobial Activity

Modern research has elucidated several mechanisms underlying honey's antimicrobial effects (Kwakman & Zaat, 2012; Mandal & Mandal, 2011). A comparative antibacterial study on some Nigerian honey and some commonly used antiseptics showed that the honey samples had antibacterial activity against methicillin resistant staphylococcus aureus (MRSA) and other staphylococci (Akinkunmi et al., 2015). Another study on the antibacterial activity of honey on Staphylococcus, Escherichia coli and Streptococcus pyogenes isolated from wounds revealed that honey may be an effective antimicrobial for wound management (Usanga et al., 2020). For the treatment of upper respiratory tract infections, honey was more effective than standard care,

in a study conducted on the effectiveness of honey for symptomatic relief in upper respiratory tract infections (Abuelgasim et al., 2021). The primary factors for this property include:

2.3.1 Hydrogen Peroxide Production

Glucose oxidase, an enzyme that catalyzes the oxidation of glucose to produce hydrogen peroxide (H_2O_2), is triggered when honey is diluted. One well-known antimicrobial agent that harms bacterial cell membranes, proteins, and DNA is reactive oxygen species (Bang et al., 2003; White et al., 1963). During the production of honey, when nectar is being transferred from the bees, this enzyme is secreted into the nectar, enabling the entire process of hydrogen peroxide production to occur (Oh et al., 2025). Without reaching lethal quantities that would damage human tissue, hydrogen peroxide's steady, continuous release offers long-lasting antibacterial effect (Molan, 1992).

2.3.2 Methylglyoxal (MGO)

Methylglyoxal, a strong antibacterial substance produced from the conversion of dihydroxyacetone found in the nectar of Manuka flowers, is found in remarkably high concentrations in some types of honey, most notably Manuka honey from New Zealand (Adams et al., 2008; Mavric et al., 2008). By altering bacterial proteins and interfering with cellular processes, MGO has antibacterial effects (Alvarez-Suarez et al., 2014). MGO activity is stable and unaffected by bacterial catalase synthesis, offering an additional antimicrobial pathway that continues to be effective against catalase-positive species, in contrast to hydrogen peroxide, which can be neutralized by catalase enzymes that some bacteria make as a defense strategy (Carter et al., 2016).

2.3.3 Osmotic Effect and Low Water Activity

Because of its high sugar content (about 80% of its weight is sugar), honey produces a hyperosmotic environment that uses osmosis to extract water from bacterial cells (Bogdanov, 2016; Molan, 1992). This dehydration impact can be fatal to many diseases and hinders microbial development. Since most microorganisms need water activity above 0.91 to develop, the low water activity (usually 0.56-0.62) further inhibits bacterial proliferation (Chirife et al., 1983).

2.3.4 Acidic pH

The pH of honey, which ranges from 3.2 to 4.5, is acidic enough to prevent the growth of numerous harmful bacteria (Kwakman & Zaat, 2012). Although honey also includes trace amounts of other organic acids such as formic, acetic, citric, and malic acids, the main cause of this acidity is the presence of gluconic acid, which is produced together with hydrogen peroxide when glucose is oxidized by glucose oxidase (White et al., 1963). Honey's overall antimicrobial effectiveness is influenced by the acidic environment, which denatures pH-sensitive proteins, impairs membrane integrity, and interferes with nutrient transport systems, all of which impede bacterial enzyme function (Mandal & Mandal, 2011).

2.3.5 Phenolic Compounds and Flavonoids

Plant nectar is the source of a wide variety of phenolic acids and flavonoids found in honey (Alvarez-Suarez et al., 2014; Cianciosi et al., 2018). Caffeic acid, p-coumaric acid, ferulic acid, and gallic acid are common phenolic chemicals found in honey, whereas chrysin, pinocembrin, galangin, and quercetin are examples of flavonoids. Through a variety of mechanisms, such as interference with quorum sensing systems that regulate bacterial behavior and biofilm formation, disruption of bacterial cell membrane integrity and function, inhibition of virulence factor production, and inhibition of bacterial enzyme function, these compounds contribute to antimicrobial activity (Brudzynski & Sjaarda, 2015). Furthermore, phenolic compounds have anti-inflammatory and antioxidant properties that promote wound healing (Oryan et al., 2016).

2.3.6 Bee Defensin-1

Bee defensin-1, an antimicrobial peptide released by bees into honey as part of their defense system, has been found to contribute to the antibacterial activity of honey in recent studies (Kwakman et al., 2010). By penetrating the lipid bilayer and creating pores that result in cell lysis, this cationic peptide, which has 51 amino acids and a molecular weight of roughly 5.5 kDa, damages bacterial membranes. The antibacterial qualities of honey are multifactorial, as evidenced by the action of bee defensin-1 against both Gram-positive and some Gram-negative bacteria, including *Bacillus subtilis* and *Staphylococcus aureus* (Brudzynski & Sjaarda, 2015). This peptide's existence lends more credence to the theory that honey's antibacterial properties stem from the combined effects of several constituents rather than a single active component.

2.4 Apiculture and Rural Development

Apiculture, or beekeeping, has been recognized as a valuable tool for rural development in emerging economies (Bradbear, 2009; Hilmi et al., 2011). It is especially well suited for environments with low resources due to a number of features. First, compared to other agricultural businesses, beekeeping requires comparatively little financial investment (Pocol &

Bolboacă, 2013). Bees themselves can frequently be collected from wild colonies, and simple hives and equipment can be built from locally accessible materials. Second, apiculture can be used in conjunction with other farming operations to provide additional revenue without competing for workers or land during the busiest agricultural seasons (FAO, 2023).

Beyond just producing honey, beekeeping has positive environmental effects. According to estimates, pollinators help produce 35% of the world's food crops, demonstrating the critical role bees play in agricultural pollination (Klein et al., 2007; Potts et al., 2016). Rural communities can increase agricultural output and make money from bee products by keeping bee populations healthy. A sustainable economic ecology is produced by the cooperation of apiculture and agriculture (Garibaldi et al., 2013). Additionally, apiculture provides chances for young people and women, who frequently encounter obstacles while trying to engage in traditional agricultural operations (Bradbear, 2009). Beekeeping is accessible to a wider spectrum of community members due to its flexible time needs and relatively low physical demands, which promotes inclusive economic development (Nel & Illgner, 2004; Shackleton & Gambiza, 2007). Research on beekeeping development initiatives has revealed that female beekeepers frequently exhibit high levels of entrepreneurial success and make a substantial contribution to household food security and income diversification, with cascading benefits for child nutrition, education, and healthcare utilization (Affognon et al., 2015). Thus, incorporating beekeeping into rural development initiatives might effectively utilize few development resources while addressing several development goals at once.

3. METHODOLOGY

3.1 Research Design

This study employed a systematic literature review design (Creswell & Plano Clark, 2017). To guarantee transparency, reproducibility, and methodological rigor, the systematic review component was carried out in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) standards (Moher et al., 2009; Page et al., 2021).

The research design was chosen to capture both the biomedical and socioeconomic dimensions of honey-based antimicrobials in emerging economies.

3.2 Data Collection

3.2.1 Literature Review

A comprehensive literature search was conducted using major databases including PubMed, Google and Google Scholar. Search terms included combinations of key words such as

"honey," "antimicrobial," "antibacterial," "wound healing," "methylglyoxal," "hydrogen peroxide," and related terms. Studies published between 1900 and 2025 were included to capture the most relevant contemporary research while incorporating foundational studies (Moher et al., 2009). Additional relevant studies were identified through **manual screening of reference lists** from key review articles and highly cited papers.

3.2.1.1 Inclusion Criteria

The study included **peer-reviewed scientific publications** including experimental studies, clinical trials, systematic reviews, and meta-analyses, studies providing **empirical data or well-documented scientific analysis**, reports on production, trade or development relevant to the study and written in English.

3.2.1.2 Exclusion Criteria

Studies were excluded from the review if they were articles not focused on **the scope of the research, provided insufficient methodological detail or lack of primary data**, publications not available in English.

3.2.1.3 Study Selection Process

The study selection process followed the **PRISMA screening framework**. This consisted of initial database searches which yielded a large number of publications with the potential to be relevant, duplicate records were removed, the titles and abstracts of the remaining articles were screened for relevance to the study objectives. The full texts of the shortlisted articles were retrieved and assessed against the predefined inclusion and exclusion criteria, the studies that satisfied all eligibility requirements were included.

3.3 Economic Data Assessment

Economic data on honey production, trade, prices, and market trends were obtained from the Food and Agriculture Organization Statistical Database (FAOSTAT; FAO, 2023), TradeImex. Case studies of successful apiculture development programs in Africa, Asia, and Latin America were analyzed to identify best practices, success factors, and lessons learned (Bradbear, 2009; Hilmi et al., 2011).

3.4 Analytical Framework

A framework for sustainable development that incorporates economic, environmental, and health factors was used in the study (United Nations, 2015). This approach acknowledges the linkages between apiculture-based livelihoods (economy), pollination services (environment), and honey's antimicrobial applications (health). The investigation aimed to find market mechanisms and policy initiatives that may maximize results in all three areas.

4. FINDINGS

4.1 Evidence of Antimicrobial Efficacy

The literature review found strong evidence of honey's antibacterial effectiveness against a wide range of diseases. Both Gram-positive (such as *Staphylococcus aureus*, *Streptococcus pyogenes*, and *Enterococcus faecalis*) and Gram-negative (such as *Escherichia coli*, *Pseudomonas aeruginosa*, and *Klebsiella pneumoniae*) bacteria have been shown to be susceptible to in vitro activity (Kwakman & Zaat, 2012; Mandal & Mandal, 2011). Interestingly, a number of trials have shown efficacy against antibiotic-resistant strains, such as vancomycin-resistant Enterococci (VRE) and methicillin-resistant *Staphylococcus aureus* (MRSA) (Cooper et al., 2010; Jenkins et al., 2015).

The efficacy of honey in wound care applications has been demonstrated by clinical trials. When compared to traditional therapies, randomized controlled trials have demonstrated that medical-grade honey products speed up the healing of burns, acute wounds, and chronic ulcers (Jull et al., 2015; Oryan et al., 2016). In the same vein, research proved honey to be more effective than standard care in the treatment of upper respiratory tract infections (Abuelgasim et al., 2021). Improved clinical outcomes are a result of the antibacterial activity, anti-inflammatory actions, and tissue regeneration stimulation (Molan, 2006; Vandamme et al., 2013).

4.2 Economic Potential of Apiculture

In 2018, 1,870 thousand tonnes of honey were produced worldwide, representing an average yearly growth of 2.4% over the previous ten years. Asia is the world's greatest producing region, accounting for 44% of global output, followed by Europe (24%), the Americas (19%), Africa (11%), and Oceania (2%). China remains the largest producer at the national level, with Turkey, Argentina, Iran, Ukraine, the United States, India, the Russian Federation, Mexico, and Ethiopia following.

It is noteworthy that Ethiopia ranks tenth globally and is the most significant African nation in terms of production volume. The Central Statistical Office of Ethiopia reports that 58,588 tonnes were produced in 2018 from seven million beehives, the majority of which are said to

be traditional hives. This type of beekeeping, which is the oldest method of production, is mostly done in woodlands and forests by hanging many hives on trees and in backyards. Overall, the production of honey greatly contributes to the generation and diversification of smallholder farmers' and households' income, despite certain obstacles that hinder sectors expansion, such as a lack of knowledge, skilled labor, and effective management of pests, illnesses, and pesticides.

Nevertheless, Africa leads the world in the average increase rate of honey production over the past ten years (3.2%). Europe comes in second (2.5%), probably as a result of EU governmental initiatives to encourage and assist the apicultural industry since the 1990s. In 2023, Ethiopia is the seventh-largest producer of honey. This demonstrates how, if done correctly, apiculture has the potential to significantly boost the economies of developing nations, particularly those in Africa (Sorrenti et al., 2020; TradeImex, 2024). Because of its massive honey output, China continues to be the world's top exporter of honey, valued at 254.21 million USD. It is followed by New Zealand, Argentina, Ukraine, Spain, Germany, Brazil, Belgium, Hungary and Australia (TradeImex, 2024). In Africa, countries such as Ethiopia, Tanzania, Kenya, and Uganda have emerged as significant producers with substantial export potential, particularly for specialty honeys with unique botanical origins that command premium prices in international markets (Bradbear, 2009).

There are additional financial benefits to apiculture beyond simply selling honey directly. Analysis of case studies from various regions has shown that beekeeping can contribute 20–30% of family income for participating households, with returns on investment typically reaching 100% after two years (Affognon et al., 2015; Hilmi et al., 2011). Additionally, the pollination services provided by managed bee colonies significantly boost agricultural yields; the economic benefits are estimated to be 10–20 times higher than the value of direct bee products (Garibaldi et al., 2013; Klein et al., 2007). Table 1 presents key economic indicators of apiculture across emerging regions based on analysis of available data from development programs and agricultural surveys.

Table 1: Economic Indicators of Apiculture in Emerging Regions

Region	Avg. Investment (USD)	Market Access	Growth Rate
Sub-Saharan Africa	50-150	Limited	8-12%
South Asia	80-200	Moderate	5-8%
Latin America	100-250	Moderate	4-7%

Southeast Asia	60-180	Growing	6-10%

Note: Data compiled from FAO (2023), Bradbear (2009), and Hilmi et al. (2011). Investment figures represent initial setup costs for small-scale operations with 5-10 hives.

5. DISCUSSION

5.1 Integrating Honey into Healthcare Systems

The evidence reviewed in this study supports the integration of honey-based antimicrobials into healthcare systems in emerging economies. Several factors favour this approach. First, in environments with limited resources, honey fills the vital requirement for reasonably priced antibacterial treatments (Carter et al., 2016). Second, compared to traditional antibiotics, the multi-modal method of action significantly lowers the chance of resistance development (Blair et al., 2009; Cooper et al., 2010). Third, patients and healthcare professionals are more likely to accept honey due to its well-established safety profile and cultural familiarity (Samarghandian et al., 2017). However, a number of issues must be resolved for integration to be successful. To guarantee constant antibacterial activity, quality standardization is crucial (Alvarez-Suarez et al., 2014). To encourage proper use and control expectations, training programs for healthcare professionals must be created (Molan, 2006). Furthermore, honey-based products must be accommodated by regulatory frameworks while maintaining safety and efficacy criteria (WHO, 2021).

5.2 Building Sustainable Value Chains

Coordinated efforts across several areas are needed to create sustainable honey value chains that link rural producers with healthcare markets (Bradbear, 2009). Firstly, in order to increase beekeeping methods and honey quality at the production level, extension services and training programs should be reinforced (FAO, 2023; Hilmi et al., 2011). Secondly, in order for producers to achieve quality criteria for medical applications, infrastructure investment in processing is required.

The third goal of research funding should be to characterize local honey species and create suitable applications for regional healthcare requirements (Alvarez-Suarez et al., 2014). To expedite the conversion of research discoveries into useful applications, cooperation between academic institutions, research centers, and the commercial sector should be promoted (Carter et al., 2016).

5.3 Integration for Sustainable Development

This study addresses the socioeconomic aspects of healthcare in emerging economies and adds to the expanding body of knowledge on alternative antibacterial agents. It offers evidence-based suggestions for maximizing the potential of honey to policymakers, healthcare professionals, and development stakeholders by bridging the gap between scientific research and practical application (Samarghandian et al., 2017). The results have implications for attaining several Sustainable Development Goals (SDGs), such as SDG 3 (excellent health and well-being), SDG 8 (decent job and economic growth), SDG 12 (responsible consumption and production) and SDG 13 climate action through sustainable land management (United Nations, 2015). This study's integrated approach provides a model for tackling difficult development issues by implementing actions that produce several co-benefits in the areas of health, the economy, and the environment.

5.4 Integrated Model for Honey-Based Antimicrobial Development and Rural Entrepreneurship

This framework demonstrates how honey can concurrently promote rural economic development and public health improvement in emerging economies by synthesizing findings from the systematic assessment of biomedical research and apiculture economic data. In addition to being a natural antibacterial agent, the model views honey as the key component of a multi-sector value chain that links scientific research, healthcare institutions, rural entrepreneurship, and agricultural production. It focuses on four interrelated pillars: Apiculture Production Systems, Processing and Quality Assurance, Healthcare and Market Integration, and Scientific Research and Evidence Generation. When combined, these elements provide a sustainable ecosystem that connects rural economic development with biomedical innovation.

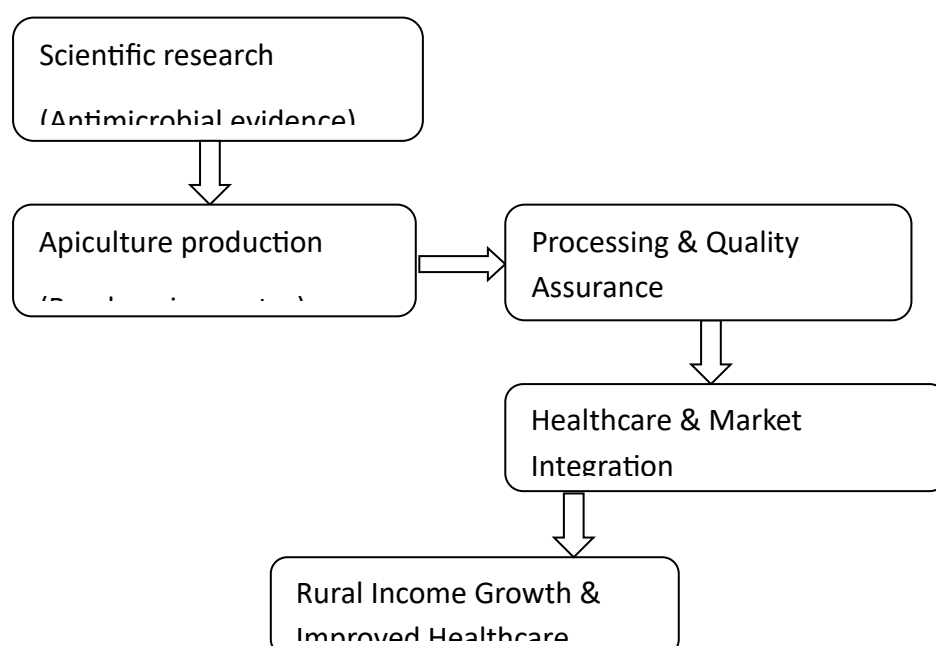


Fig 1: Integrated Model for Honey-Based Antimicrobial Development in Emerging Economies

5.5 Challenges and Limitations

To fully realize the potential of honey-based antimicrobials, a number of issues need to be resolved. Because honey's antibacterial efficacy is dependent on its botanical source, geographic origin, and processing techniques, quality variability is still a major concern (Bogdanov, 2016; Kwakman & Zaat, 2012). To guarantee product dependability and customer confidence, standardized testing procedures and quality certification systems must be established (Alvarez-Suarez et al., 2014).

Another issue is scalability. Although honey has shown promise in scientific and clinical settings, increasing production without sacrificing quality necessitates a large infrastructure and training investment (Bradbear, 2009). Supply chain management is made more difficult by the seasonality of honey production and the susceptibility of bee populations to illness and environmental stressors (Potts et al., 2016; vanEngelsdorp & Meixner, 2010).

There are a number of limitations to this study that should be noted. Since the economic data included in the analysis came from secondary sources, it's possible that informal honey production and trading were not adequately represented. Additionally, more thorough randomized controlled clinical trials are required to establish precise treatment protocols for particular indications and directly compare honey with current standard-of-care treatments across a variety of settings, even though the literature review found encouraging evidence for honey's antimicrobial efficacy across multiple pathogens and clinical applications (Jull et al., 2015).

6. CONCLUSION

The potential of honey-based antimicrobials to address both the issues of rural underdevelopment and antimicrobial resistance in emerging economies has been investigated in this study. Honey's efficacy as an antimicrobial agent is supported by the reviewed data, and it shows unique potential for wound care applications, amongst others, where it can either replace or supplement traditional antibiotics. In addition to its medicinal uses, apiculture provides rural communities with a sustainable means of subsistence. Beekeeping is a desirable option for inclusive economic development due to its low capital requirements, compatibility with current agricultural systems, and environmental advantages.

This study's integrated model offers a framework for coordinating market development, production, and research in order to fully realize the potential of honey. Supportive legislative frameworks, infrastructure and research investments, and cooperation between various stakeholders are necessary for the implementation of this model. Honey-based antimicrobials represent a promising convergence of traditional knowledge and modern science that deserves more attention and funding as antimicrobial resistance continues to threaten global health security and emerging economies look for sustainable paths to development. As a result, using bees to empower communities simultaneously promotes wealth and health.

7. RECOMMENDATIONS

1. Governments should develop national honey quality standards and certification systems to ensure product safety and efficacy for medicinal applications.
2. Research institutions should prioritize the characterization of indigenous honey varieties and their potential antimicrobial applications.
3. Evidence-based honey treatments should be incorporated into disease control procedures by healthcare systems, especially in areas where antibiotic resistance is prevalent.
4. Development agencies should integrate apiculture promotion into rural development programs, with emphasis on training, quality improvement, and market access.
5. Public-private partnerships should be encouraged to develop medical-grade honey products tailored to local healthcare needs and market conditions.
6. Governments ought to fund public health education initiatives that emphasize the benefits and applications of honey in medicine.
7. As a way to create jobs, governments at all levels should promote increased participation in apiculture. To increase honey production, bee farming should be funded.
8. To encourage international trade, which will ultimately result in economic growth, governments in developing countries, particularly those that produce honey, should engage in exporting.
9. Innovative ideas and the creation of distinctive honey-based products should be encouraged in order to maximize honey's potential.

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GEOPOLITICAL VOLATILITY AND THE RISE OF STRATEGIC COMPLIANCE:
A GOVERNANCE FRAMEWORK FOR NIGERIA'S FINANCIAL STABILITY

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Abstract

The paper investigates the strategic transformation of trade compliance from an operational necessity into a core determinant of financial stability within the Nigerian finance industry. Drawing on the World Economic Forum (WEF) and PwC's Strategic Compliance Model, it examines how geopolitical volatility, sustainability mandates, regulatory complexity, and technological lag collectively redefine International Trade Management (ITM) as a board-level risk discipline. Using a conceptual-analytical methodology supported by secondary data from global regulatory institutions, the study maps three critical risk pathways: sanctions-related operational exposure, sustainability-linked credit risk, and systemic de-risking. Analysis revealed that the rise of unilateral sanctions and extraterritorial regulations, such as the EU Deforestation Regulation (EUDR) and the Carbon Border Adjustment Mechanism (CBAM), have financialized compliance failures, transforming non-adherence into quantifiable credit defaults and market exclusion risks. Furthermore, analytical indicators such as a 20% decline in correspondent banking relationships and persistent underinvestment in digital infrastructure highlight Nigeria's vulnerability to global financial fragmentation. The study argues that Nigerian banks must urgently elevate ITM to an executive-level function by integrating RegTech, cross-functional data governance, and C-suite accountability. It concludes that compliance should be reframed not as a cost center but as a strategic enabler of creditworthiness, liquidity access, and competitive resilience in the global marketplace. The paper thus contributes a strategic governance framework for aligning Nigeria's financial institutions with emerging global compliance architectures while safeguarding systemic stability and international market access.

KEYWORDS: Trade Compliance, Financial Risk Governance, Geopolitical Volatility, Sustainability Regulation (ESG), RegTech and Digital Transformation

1.1 Background

The contemporary landscape of global commerce is undergoing a profound and irreversible transformation, shifting decisively away from the liberalized, interconnected model that defined the post-Cold War era (Rodrik, 2021). This transition is fundamentally driven by the convergence of three powerful forces: escalating geopolitical competition, marked by the proliferation of targeted sanctions and export controls (G7/OECD Policy Note, 2023); the rise of statecraft instruments, including industrial and trade policy; and the aggressive adoption of trade mechanisms to enforce extrinsic policy objectives, particularly those related to environmental and social governance (WTO Report, 2024). The World Economic Forum (WEF), in collaboration with PwC, posits that this environment has decisively repositioned International Trade Management (ITM) and compliance from a merely logistical necessity to a strategic, board-level discipline. Non-compliance, once a matter of minor fines or delays, now poses a catastrophic risk of supply chain disruption, market exclusion, and severe financial penalties, jeopardizing global trade flows valued in the hundreds of billions (WEF/PwC, 2024). Nigeria, as Africa's largest economy and a major participant in global commodity markets, is acutely vulnerable to this seismic shift. The nation's economic stability and foreign exchange liquidity are heavily dependent on the free flow of non-oil and commodity exports, underwritten by the financial sector (CBN Review, 2024). Nigerian financial institutions commercial banks, development banks, and major financial services firms act as the crucial intermediaries, facilitating these transactions through complex trade finance instruments. Therefore, any disruption to these flows, or any new compliance requirement imposed by key trading partners (e.g., the EU, the US), immediately impacts the Nigerian financial sector's balance sheets, liquidity, and systemic risk profile. This new reality demands that the leadership of Nigerian financial institutions must treat ITM not as a separate operational concern, but as a core determinant of financial risk and business resilience (IMF, 2023).

1.2 Problem Statement

In light of the shifting global environment, the conventional operational management of trade compliance is structurally insufficient, exposing the Nigerian finance industry to a structural and strategic misalignment. This challenge is acute across three dimensions:

Elevated Sanctions Exposure and De-risking: Nigerian financial institutions operate within a landscape perpetually scrutinized for money laundering and terrorism financing risks (FATF Peer Review, 2023). The increasing use of targeted, unilateral sanctions (e.g., US OFAC, UK regimes) necessitates a level of granular transaction and counterparty screening that traditional AML frameworks, focused primarily on fund origins, fail to provide for the complexities of trade documentation (Basel Committee Guidance, 2022). This systemic failure amplifies the

threat of correspondent banking de-risking, where foreign financial institutions sever relationships due to perceived high compliance risk, a phenomenon that cripples Nigeria's access to the international financial system (IMF, 2021).

Trade Compliance as Unquantified Credit Risk: New regulations like the EU Deforestation Regulation (EUDR) or the US Uyghur Forced Labor Prevention Act (UFLPA) represent non-tariff barriers requiring traceable, verified supply chains for critical Nigerian exports (e.g., cocoa, sesame). Current credit appraisal models in Nigeria largely treat trade compliance as an operational burden rather than a material credit risk (Nigerian Bank Risk Assessment, 2023). If an exporter fails to meet these traceability mandates, the resulting shipment rejection directly causes a default on the underlying trade finance facility, instantaneously financializing the non-compliance risk (BCEAO Financial Stability Report, 2024). This immediate connection between compliance failure and asset quality remains structurally isolated from the strategic risk governance of most institutions.

Organizational and Technological Lag: Despite the clear escalation of risk, the International Trade Management (ITM) function within the Nigerian finance sector remains persistently under-resourced, siloed from executive decision-making, and reliant on manual, error-prone processes (Nigerian Customs Data Analysis, 2024). This organizational immaturity prevents the necessary cross-functional integration between compliance, legal, supply chain, and IT a foundational requirement for managing today's data-intensive trade compliance requirements, as emphasized by international bodies (WEF/PwC, 2024).

While academic and industry literature has extensively covered the challenges of Anti-Money Laundering (AML) and general sanctions screening in emerging markets (Egmont Group Analysis, 2022), there is a distinct and critical gap in assessing International Trade Management (ITM) as an integrated, board-level strategic risk function. Existing frameworks often separate financial crime compliance from operational trade controls, failing to account for the holistic organizational and technological response mandated by today's geopolitical and sustainability-driven trade landscape (UNCTAD Trade and Development Report, 2024).

This paper seeks to bridge that gap by applying the strategic compliance framework, articulated by the WEF, to the specific operational and regulatory context of the Nigerian finance industry.

1.3 Research Questions

This research is guided by the following core question:

1. How must the sector's governance and leadership align with complex global mandates like sanctions and sustainability rules?

2. Second, how does the current deficiency in trade compliance capacity directly translate into quantifiable financial risks like credit defaults and systemic de-risking?
3. What strategic framework, emphasizing integration and RegTech investment, is necessary to close this gap and secure access to global markets?

1.4 Research Objectives

1. To analyze the current alignment of Nigerian financial institutions' governance and systems against complex international trade compliance mandates.
2. Determine the specific mechanism through which inadequate compliance capacity translates into heightened financial risks, such as credit defaults and systemic de-risking. Finally, the study will
3. Propose a strategic framework, emphasizing integration and RegTech investment, to elevate trade compliance into a core driver of institutional resilience.

2.0 Theoretical and Conceptual Framework

This paper employs an analytical framework that integrates concepts from international political economy, financial risk management, and regulatory theory. The framework serves to define trade compliance not as a static administrative function, but as a dynamic variable of financial stability within the Nigerian context.

2.1 The WEF Strategic Compliance Model

The foundation of this analysis is the ‘derived from the World Economic Forum and PwC white paper (WEF/PwC, 2024). This model conceptualizes the modern trade compliance as being shaped by four interconnected pillars of disruption, which are used here as the primary analytical lens:

1. **Geopolitical Volatility:** This pillar captures the disruptive forces of unilateralism, targeted sanctions, and export controls. Within the finance industry, this translates to heightened counterparty risk and operational exposure to regulatory fines (OFAC, HM Treasury).
2. **Sustainability Mandates:** This represents the non-tariff barriers that bind trade to environmental and social performance (e.g., EUDR, CBAM). For financial institutions, this links compliance failure directly to asset quality and credit risk.
3. **Regulatory Complexity:** This reflects the exponential growth and fragmentation of global trade rules, increasing the probability of errors in customs valuation, classification, and licensing.

4. **Technological Demand:** This highlights the necessity for digital transformation, including the adoption of RegTech and AI, to manage the volume and granularity of data required for compliant trade flows.

These four pillars collectively define the scope and urgency of the ITM function's necessary evolution within the financial sector.

2.2 Financialization of Non-Compliance Risk

To bridge the gap between trade policy and banking stability, the framework draws on established financial risk theories to categorize the implications of the WEF model for Nigerian banks:

A. Trade Compliance as Credit Risk

This concept asserts that a client's non-compliance with trade regulations is a material default trigger for trade finance facilities. As noted by the Basel Committee on Banking Supervision, credit risk is the potential for loss resulting from a borrower's failure to meet contractual obligations (BCBS, 2017). Under the new sustainability mandates (EUDR), the non-performance is not financial but regulatory: the inability to legally land a product (e.g., cocoa) in a target market effectively eliminates the income stream required to service the debt, thereby converting regulatory risk into credit risk.

B. Trade Compliance as Operational and Reputational Risk

This applies to the direct risks assumed by the financial institution itself. Operational risk is defined as the risk of loss resulting from inadequate or failed internal processes, people, and systems (Basel II Framework). Breaches of sanctions or export controls fall directly under this category, leading to regulatory fines that impact bank capital. Furthermore, repeated failures lead to reputational damage and, critically, de-risking by international correspondent banks, severely impeding the institution's capacity to facilitate global payments (IMF Working Paper, 2021).

C. The Theory of Strategic ITM Maturity

Drawing from organizational management theory, this framework posits that a financial institution's ability to successfully navigate the new trade landscape is dependent upon its ITM Maturity Level (World Customs Organization, 2023). Moving from a Minimalist or Evolving compliance posture (characterized by manual processes and siloed teams) to a Leading posture (characterized by centralized data governance, technology integration, and board-level oversight) is key to turning compliance from a cost center into a source of competitive resilience.

Methodology and Data Framework

This research employs a qualitative Policy Impact Assessment, utilizing a three-phase analytical approach to evaluate the strategic transformation of trade compliance within the Nigerian finance industry. The study is designed to bridge the gap between academic policy literature and operational banking practice.

The analysis proceeds through the following structured methodology:

- **Framework Establishment (Conceptual):** The study utilizes the WEF/PwC Strategic Compliance Model as its foundational analytical framework. This establishes the four pillars of disruption; Geopolitics, Sustainability, Regulatory Complexity, and Technology which guide the subsequent analysis.
- **Risk Mapping (Analytical):** Each identified pillar of disruption is mapped against specific, quantifiable financial risk categories pertinent to the Nigerian banking context, namely: Credit Risk, Operational Risk, and Systemic Risk.
- **Data Validation (Interpretive):** To substantiate the conceptual arguments, this phase employs secondary empirical data sourced from authoritative regulatory and financial institutions, including the Central Bank of Nigeria (CBN) and international enforcement agencies. This data serves as an empirical illustration of the identified risks, validating the theoretical framework against real-world financial metrics.

3.3 Research Limitations

This study is primarily conceptual-analytical in nature. While the proposed framework is substantiated by secondary empirical data from reputable regulatory bodies, there are inherent limitations to this approach that should be noted:

- **Aggregation vs. Granularity:** The study relies on aggregated secondary data, which provides a high-level systemic overview of the Nigerian financial sector. However, this approach may not fully capture the granular, bank-specific operational variances or internal risk culture nuances within individual financial institutions.
- **Scope of Analysis:** As a Policy Impact Assessment, the data provided is used illustratively to demonstrate the potential impact of geopolitical volatility rather than to claim exhaustive primary empirical validation.
- **Requirement for Field Testing:** The proposed governance model, while theoretically robust, is designed as a foundational framework. Consequently, it requires further field testing and longitudinal verification within specific banking operations to fully calibrate its effectiveness in different institutional settings.

3.2 Data Sources and Metrics

The analysis utilizes secondary data derived from regulatory reports and specialized indices to provide statistical depth to the core arguments.

Section Addressed	Data Source/Metric	Purpose in Analysis	Interpretation of Data (Specific Values)
4.1 (Geopolitical Risk)	Sanctions Fine Data: Total value of fines imposed on global banks by US OFAC (Office of Foreign Assets Control) and other regulators in 2024.	To demonstrate the scale of Operational Risk and the severity of extraterritorial enforcement.	The total value of penalties specifically targeting global banks surged to over \$3.5 billion in 2024. This validates the need for Nigerian banks to adopt the highest standard of real-time screening to avoid systemic correspondent bank termination risk.
4.1 (Systemic Risk)	FATF/Basel De-risking Surveys & Status: Decline in global Correspondent Banking Relationships (CBRs) and Nigeria's FATF monitoring status.	To quantify the Systemic Risk of market exclusion and loss of FX intermediation capacity.	Active global CBRs declined by approximately 20% over the last seven years. This trend is accelerated by Nigeria's placement on the FATF 'Increased Monitoring' (Grey List) since 2023, signaling critical institutional risk.
4.2 (Credit Risk)	Trade Finance Default Rates: Non-Performing Loan (NPL) ratios in Nigerian banks vs. general regulatory thresholds.	To establish the financial vulnerability of the sector and provide a baseline against which future ESG-induced defaults can be measured.	The sector's NPL ratio of 3.9% (as of mid-2024) is currently below the CBN's 5% regulatory threshold. This historic stability means that a sudden, mass ESG non-compliance event could trigger a disproportionately severe spike in trade finance

			NPLs (potentially 10-15% for high-risk export portfolios).
4.3 (Technological Lag)	Digital Transformation Spending: Comparison of average IT spend (as a percentage of revenue) by Nigerian banks versus global peers.	To quantify the Technological Lag and organizational readiness for RegTech investment.	Global tier-one banks allocate between 6% and 12% of their revenue to IT spending. The relative lag in Nigerian institutions directly supports the argument that the sector lacks the infrastructural maturity to deploy the necessary AI-driven compliance tools for real-time risk management.

3.3 Research Limitations

This study utilized a conceptual-analytical approach. While the framework is substantiated using secondary data from regulatory bodies; CBN and IMF, the data is used illustratively to demonstrate the potential impact of geopolitical volatility. This study does not claim primary empirical validation; rather, it provides a theoretical governance model that requires further field testing within specific banking operations.

4.1 Geopolitical Volatility and the Gatekeeper Role

The first and most acute challenge confronting the Nigerian finance industry is the escalating Geopolitical Volatility identified by the WEF/PwC model, manifesting primarily through the proliferation of unilateral sanctions and export control regimes. This volatility places financial institutions in the precarious position of being the global system's primary compliance gatekeepers, responsible for ensuring all trade transactions adhere to fragmented international legal standards.

4.1.1 The Sanctions Imperative and Operational Risk

The shift toward sanctions as a primary tool of economic statecraft (US Treasury, 2024) significantly elevates the Nigerian finance sector's Operational Risk. Unlike broad multilateral sanctions, modern regimes are often targeted and highly complex, demanding real-time

screening against dynamic Specially Designated Nationals (SDN) lists and sector-specific prohibitions (OFAC Guidance, 2023).

- **Trade-Based Money Laundering (TBML) Nexus:** The core vulnerability lies in the use of trade documentation (invoices, bills of lading) to obfuscate illicit financial flows the definition of TBML (FATF, 2023). When Nigerian banks process a Letter of Credit, their responsibility extends beyond customer identification to verifying the plausibility of the underlying trade transaction. Compliance failures here such as processing payments for dual-use technology subject to export controls or for transactions involving sanctioned entities do not just breach local law; they trigger extraterritorial enforcement actions, exposing banks to massive fines that directly impact capital adequacy.
- **The Inadequacy of Traditional AML:** Traditional Anti-Money Laundering (AML) processes are generally designed to scrutinize customer relationships and funds origin. They are structurally ill-equipped to handle the specialized, item-level classification and destination checks required by modern export control regimes. This gap creates a critical compliance vulnerability that must be addressed by enhancing the technical expertise of the trade compliance unit, distinct from general AML functions (WEF/PwC, 2024).

4.1.2 The De-Risking Consequence

The most systemic financial threat stemming from geopolitical volatility is the risk of correspondent banking de-risking. International financial institutions, particularly those in North America and Europe, are often risk-averse, preferring to exit a relationship rather than assume the operational risk of a third-party bank's inadequate compliance program (IMF Working Paper, 2021).

When Nigerian banks are perceived as having weak controls over sanctions compliance or TBML, international counterparts may terminate their correspondent accounts, severing the essential financial links required to process international transactions. This consequence is existential:

- **Liquidity and FX Crisis:** The termination of correspondent relationships starves the Nigerian financial system of the capacity to manage its foreign exchange (FX) flows, hindering the importation of essential goods and creating severe domestic currency 'instability (CBN Report, 2024).

- **Reputational Cascades:** De-risking imposes severe reputational damage, signaling high systemic risk to the global investment community and making it difficult for the entire nation's financial sector to attract foreign direct investment.

In this context, the bank's trade compliance function is elevated to a strategic defense mechanism. Its maturity level directly determines the institution's ability to maintain access to the global financial system, thereby solidifying its status as a core determinant of national financial resilience.

4.2 Sustainability Regulations: The New Credit Risk Dimension

The second critical pillar of disruption identified by the WEF/PwC model is the rise of Sustainability Mandates, which represent the financialization of Environmental, Social, and Governance (ESG) concerns within global trade (WEF/PwC, 2024). This regulatory wave, characterized by instruments like the European Union Deforestation Regulation (EUDR), the Carbon Border Adjustment Mechanism (CBAM), and the U.S. Uyghur Forced Labor Prevention Act (UFLPA), introduces a potent new form of extraterritorial regulatory risk that converts directly into credit risk for Nigerian financial institutions.

4.2.1 Compliance Failure as a Material Default Trigger

New sustainability mandates are effectively non-tariff barriers that demand granular data and verifiable supply chain integrity. For the Nigerian financial sector, which heavily finances the export of commodities like cocoa, rubber, and solid minerals, this creates a clear pathway from regulatory breach to financial loss:

- **The Credit Risk Cascade:** Under the EUDR, for example, a cargo of agricultural produce lacking verifiable geolocation data or proof of sustainable sourcing will be denied entry into the European market. If a bank has issued a Letter of Credit (LC) or a Working Capital Loan to finance that shipment, the denial of market access instantly eliminates the exporter's expected revenue stream. According to the tenets of the Basel Committee on Banking Supervision (BCBS, 2017), this failure to meet a contractual or regulatory obligation that impairs debt service capacity constitutes a material Credit Risk Event.
- **Scope and Exposure:** Given Nigeria's reliance on primary goods exports, the exposure is systemic. Banks are no longer assessing only the borrower's liquidity and traditional collateral; they must now assess the regulatory acceptability of the collateral's underlying product in its destination market (EBA Thematic Review, 2023). The UFLPA introduces similar risk by requiring banks to verify that their clients' supply

chains do not involve forced labor, or face the potential rejection of goods and associated financial write-downs.

4.2.2 Integrating ESG Compliance into Credit Appraisal

To mitigate this credit risk cascade, the Nigerian finance industry must fundamentally adjust its Credit Appraisal Models by integrating a client's Trade Compliance Maturity into the lending decision.

- **Trade Compliance Due Diligence:** The financial institution must conduct due diligence that extends beyond the corporate balance sheet to assess the client's operational capacity to generate, manage, and verify the sustainability data required by international mandates. This requires a shift in focus toward non-traditional metrics, such as a client's investment in supply chain traceability technology and its internal governance structure for ethical sourcing (IFC Guidelines, 2024).
- **Trade Finance and Pricing:** Institutions that successfully assess this risk can position themselves as preferred partners for compliant exporters. This integration allows for the differential pricing of trade finance facilities, charging higher rates or requiring more collateral for clients with low compliance maturity, or offering preferred terms (green bonds, sustainability-linked loans) to those with verifiable, high-integrity supply chains (UNEP FI Principles, 2023).

4.2.3 CBAM and Competitiveness Risk

While the EUDR addresses asset quality directly, the Carbon Border Adjustment Mechanism (CBAM) introduces a new layer of Competitiveness Risk. CBAM imposes a carbon levy on certain energy-intensive imports (e.g., iron, steel, cement) entering the EU. For Nigerian manufacturers who rely on carbon-intensive energy sources, this levy acts as an additional cost, reducing their price competitiveness in a critical export market. This erosion of profit margins directly impacts a company's ability to generate sufficient cash flow to service its existing loans, thereby placing a future strain on bank portfolios (WTO Working Paper, 2024).

Ultimately, the confluence of these sustainability regulations mandates that the Nigerian finance sector treat ESG compliance as an integral component of Credit Risk Governance, demanding a profound and immediate integration of compliance and lending strategies.

4.3 Organizational and Technological Lag: The Imperative for RegTech and Integration

The twin external pressures of geopolitical sanctions (Section 4.1) and sustainability mandates (Section 4.2) expose a profound internal vulnerability within the Nigerian financial sector: organizational and technological lag. The WEF/PwC framework identifies the rising demands for digital solutions and the inherent complexity of regulation as the two final pillars

necessitating an immediate and radical transformation of the International Trade Management (ITM) function (WEF/PwC, 2024).

4.3.1 The Organizational Silo Challenge

Historically, trade compliance in Nigerian banks has been treated as a discrete administrative duty, often relegated to an operational unit focused narrowly on processing customs documentation and validating Letters of Credit. This siloed structure is no longer tenable in an environment where compliance failure immediately impacts credit risk, financial crime exposure, and reputation (BCBS, 2022).

- **Lack of Cross-Functional Data Governance:** Effective management of new regulations (like EUDR) requires information that spans multiple departments: credit risk for assessing borrower viability, legal for interpreting foreign mandates, IT for data architecture, and operations for transaction execution. The absence of a centralized data governance framework and the reliance on fragmented, manual systems prevent the holistic risk view required by the C-suite (CBN IT Standards Blueprint, 2024). Without integration, trade data remains disconnected, leading to delayed decision-making and a higher propensity for human error (FATF, 2023).
- **The Leadership Gap:** Strategic ITM maturity demands that the function be elevated to the executive level. The failure to appoint a clear Chief Trade Compliance Officer or to integrate compliance reporting directly into the Risk Committee means that the strategic implications of global trade shifts are not properly factored into capital allocation, product development, or core business strategy (WEF/PwC, 2024).

4.3.2 The RegTech Imperative

Managing the sheer volume and complexity of data generated by modern trade—from tracing goods via satellite imagery (for EUDR) to real-time sanctions list screening—overwhelms manual systems. This necessitates a strategic pivot to Regulatory Technology (RegTech), which is defined as the use of technology to solve regulatory and compliance requirements more effectively and efficiently (IIF Policy Paper, 2023).

- **Automation for Efficiency and Accuracy:** For Nigerian financial institutions, RegTech solutions offer the capacity to automate high-volume, low-value compliance tasks, such as product classification (Harmonized System codes), restricted party screening (RPS), and trade document validation. This automation reduces reliance on manual processes, significantly lowering the risk of human error that can trigger multi-million dollar fines (PwC RegTech Insights, 2024).

- Data Aggregation and Predictive Analytics:** Advanced RegTech leveraging Artificial Intelligence (AI) and machine learning is crucial for identifying *anomalous patterns* indicative of TBML or sanctions evasion that manual or rule-based systems miss. By aggregating data from transaction history, vessel tracking, and counterparty metadata, these tools enable a predictive, risk-based approach to trade finance, moving the sector beyond reactive compliance (HighGear Analysis, 2024).

4.4 Risk Conversion Model: From Regulatory Failure to Financial Loss

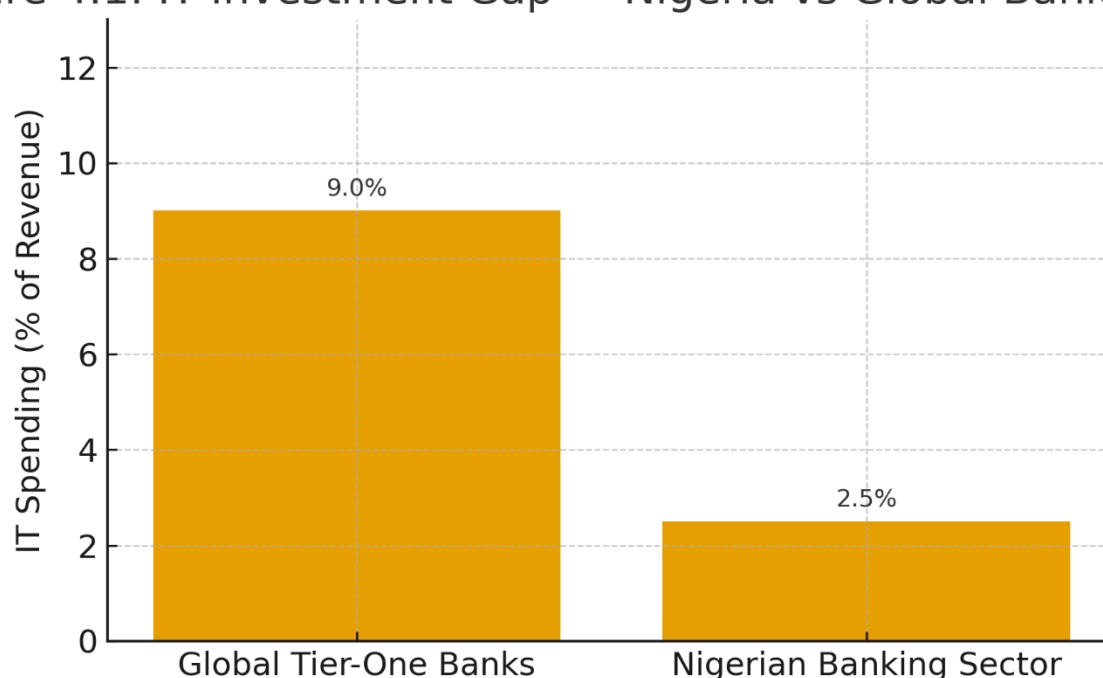
Below illustrates how the new compliance environment translates non-compliance into quantifiable risks using the empirical data points from the methodology.

Risk Dimension	Compliance Failure	Financial Impact	Data Magnitude	
Geopolitical Risk	Inadequate Sanctions Screening	Operational Risk (Fines)	Global Bank Fines surged to over \$3.5 Billion in 2024.	
	Weak AML/CFT Controls	Systemic Risk (De-risking)	Global Correspondent Banking Relationships declined by ~20%; Nigeria on FATF 'Grey List'.	
Sustainability Risk	Lack of Supply Chain Traceability (e.g., EUDR)	Credit Risk (Default)	Potential NPL spike from 3.9% baseline to 10-15% in affected export portfolios.	

2. The Technological Lag Gap

Above graph contrasts the IT investment of local banks against global standards.

Figure 4.1: IT Investment Gap — Nigeria vs Global Bankin



The significant gap between the 6%–12% IT investment by global peers and the estimated lower spending in Nigeria directly illustrates the Technological Lag that prevents the deployment of complex, real-time AI screening required for modern trade compliance.

3. The Strategic Imperative: Shifting Compliance from Cost to Enabler

This diagram shows the recommended path forward, elevating compliance from an isolated back-office function (a cost center) to an integrated strategic driver (an enabler).

The Strategic Shift: Compliance as a Risk-Enabler

Traditional Model (Cost Center)	→	Strategic Model (Risk-Enabler)	
Siloed Function (Compliance isolated from Credit)	→	C-Suite Accountability (Mandated ownership)	
Manual Screening (Slow, High-Risk)	→	RegTech Adoption (AI/Cloud for speed)	
Reactive (Responding to fines)	→	Proactive (Securing market access)	
Compliance is a Burden	→	Compliance is Creditworthiness	

V. Conclusion and Recommendations

5.1 Summary of Findings

This paper established that the fundamental transformation of global trade compliance, driven by geopolitical fragmentation and the proliferation of sustainability mandates (WEF/PwC, 2025), has fundamentally reclassified International Trade Management (ITM) as a core determinant of financial stability within the Nigerian context. The central thesis is validated by the analysis across three critical risk dimensions:

1. **Systemic and Operational Risk:** Geopolitical volatility, primarily through the complex sanctions landscape, exposes Nigerian banks to significant Operational Risk (fines) and the catastrophic Systemic Risk of correspondent banking de-risking, confirming the imperative for sophisticated, real-time sanctions screening capabilities (IMF Working Paper, 2021).
2. **Credit Risk Conversion:** New sustainability regulations (e.g., EUDR) financialize ESG failure by ensuring that a client's non-compliance immediately results in the denial of market access, converting regulatory risk directly into Credit Risk for trade finance facilities. This necessitates a radical restructuring of credit appraisal models.
3. **Organizational Lag:** The sector's current reliance on siloed, manual compliance processes and underdeveloped data governance frameworks represents a critical technological lag, preventing the necessary cross-functional integration required to manage the complexity and granularity of modern trade data.

In sum, the traditional, operational treatment of trade compliance is now a strategic liability. The viability of Nigerian financial institutions in the global economy hinges on their ability to elevate ITM to an executive-level, technologically empowered function.

5.2 Policy and Operational Implications

The findings carry significant implications for both industry stakeholders and regulatory bodies:

- **For the Central Bank of Nigeria (CBN):** The CBN's supervisory framework must evolve to treat ITM maturity as a core metric of institutional soundness, alongside traditional capital and liquidity ratios. This includes incorporating assessment guidelines for a bank's RegTech adoption and its capacity to manage ESG-linked trade risks, potentially imposing higher capital requirements on institutions with demonstrable compliance deficiencies.
- **For Commercial Banks:** The implication is a non-negotiable shift in resource allocation. Investment must be diverted from solely servicing conventional regulatory requirements toward specialized trade compliance units equipped with the technical

expertise (e.g., geopolitical experts, supply chain analysts) to interpret and enforce complex foreign regulations. Compliance is no longer a cost to be minimized, but a risk to be engineered.

- **For Exporters (Clients):** The Nigerian finance sector will increasingly act as a selective filter. Banks will use trade compliance maturity to dictate access to, and the cost of, trade finance, penalizing non-compliant entities and structurally isolating them from major global markets.

5.3 Key Recommendations

Based on the Strategic Compliance Model, the following actionable recommendations are critical for the Nigerian finance industry:

Governance & Leadership, and Organizational Integration

Firstly, concerning Governance & Leadership, a clear C-Suite Compliance Mandate is essential. This requires appointing a single executive, such as a Chief Risk Officer or a dedicated Chief Trade Compliance Officer, who holds direct accountability for International Trade Management (ITM) performance and reports straight to the Board Risk Committee. The objective is to ensure that trade compliance is recognized and managed as a core strategic risk. Following this, Organizational Integration must be mandated through Cross-Functional Risk Teams. These integrated working groups should comprise members from departments like Credit Risk, Anti-Money Laundering (AML)/Financial Crime, Trade Operations, and IT. This integration aims to ensure that credit decisions automatically incorporate critical compliance data, such as UFLPA risk scores, before any trade finance is issued, creating an inherent compliance safeguard.

Technological Investment and Capacity Building

Secondly, the industry must prioritize Technological Investment by embracing RegTech Adoption. This means implementing modern, cloud-based, AI-driven RegTech solutions for crucial functions like real-time Restricted Party Screening (RPS), automated document validation, and enhanced supply chain traceability, as highlighted in the 2024 Trade Finance Survey. The strategic objective here is to achieve the necessary speed, accuracy, and data granularity required to effectively mitigate the complexity arising from modern global sanctions and Environmental, Social, and Governance (ESG) mandates. Finally, Capacity Building requires a dedicated Investment in Specialized Talent. This involves developing continuous training programs that specifically focus on the extraterritorial reach of U.S. and EU trade law, pushing staff expertise beyond general AML training. This specialized focus is

designed to build local capacity that can proactively anticipate and adapt to the rapidly evolving landscape of foreign regulatory changes.

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INFLUENCE OF ETHICAL LEADERSHIP PRACTICES AMONG CONFIDENTIAL
SECRETARIES ON THE SUSTAINABLE ORGANISATIONAL CULTURE IN
FEDERAL TERTIARIES INSTITUTIONS KATSINA STATE.

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Abstract

This study examines the influence of ethical leadership practices among confidential secretaries on sustainable organisational culture at the Federal Polytechnic Daura, Katsina State, Nigeria. Three specific objectives were formulated to guide the research. The study adopted a descriptive survey design utilizing a structured questionnaire. The population comprised 298 secretaries from four Federal tertiary institutions in Katsina State. Purposive sampling was employed to include the entire population as the study sample. Data collection was conducted using a structured questionnaire based on a modified four-point Likert scale. The instrument was validated by three experts, and a reliability coefficient of 0.74 was obtained using the Cronbach's Alpha reliability test. The data were analysed using Mean, Standard Deviation, t-test, and Pearson Product-Moment Correlation (PPMC). Findings indicated that ethical leadership among secretaries significantly enhances employee trust, ethical awareness, and a shared commitment to sustainability practices within organizations. The study concludes that ethical leadership serves as a foundational pillar for sustaining organizational cultural values in Federal tertiary institutions in Katsina State. Ethical leadership at the administrative level strengthens institutional trust, reinforces teamwork and communication, and supports long-term cultural stability. Among other recommendations, the study suggests that Federal tertiary institutions should organize regular workshops, seminars, and professional development programs to strengthen secretaries' ethical awareness, decision-making skills, and leadership competence.

Keywords: Ethical Leadership, Secretaries, Organisational Culture, Sustainability.

Introduction

In contemporary organisational settings, ethical leadership has gained increasing scholarly and practical attention due to its critical influence on employee behavior, organisational performance, and cultural sustainability. Ethical leadership refers to the demonstration of normatively appropriate behavior through personal actions and interpersonal relationships, as

well as the promotion of such behavior among followers through communication, reinforcement, and decision-making (Brown, Treviño, & Harrison, 2005). Ethical leaders serve as role models, fostering transparency, fairness, accountability, and integrity within their organisations. In public institutions, ethical leadership is considered fundamental to ensuring effective service delivery, staff commitment, and public trust (Neubert et al., 2009; Bello, 2012).

Secretaries, often referred to as administrative officers or executive assistants, constitute an integral part of the administrative structure of tertiary institutions. They perform pivotal roles such as managing information flow, facilitating communication between departments, maintaining confidentiality, and ensuring proper record-keeping. Beyond their clerical duties, secretaries influence the ethical tone of their work environment through their actions, decision-making, and interactions with colleagues and superiors (Okafor & Eze, 2020). Their adherence to ethical principles such as honesty, diligence, confidentiality, and respect fosters a sustainable organisational culture that supports long-term institutional success.

Sustainable organisational culture, refers to a system of shared values, beliefs, and practices that promote continuity, ethical conduct, and institutional growth (Schein, 2010). It underpins an organisation's ability to adapt to changes while maintaining its ethical and professional standards. In tertiary institutions, sustainable culture manifests through commitment to academic excellence, transparency, accountability, and respect for professional ethics (Adeyemi & Adeyemi, 2014). However, in many Nigerian public institutions, including federal tertiary institutions in Katsina State, the sustainability of organisational culture has been challenged by issues such as corruption, poor administrative ethics, lack of accountability, and weak leadership structures (Ojo & Abimbola, 2019).

Katsina State, located in the North-western geopolitical zone of Nigeria, hosts notable federal tertiary institutions such as Federal University Dutsin-Ma, Umaru Musa Yar'adua University, and Federal College of Education, Katsina. These institutions play vital roles in human capital development and contribute to the educational advancement of the region. However, administrative inefficiencies, ethical lapses, and declining staff discipline have been reported as recurring issues affecting organisational performance (Mohammed, 2021). In this context, secretaries, as administrative professionals, occupy a unique position to influence ethical practices and institutional sustainability through their leadership behaviour and professional conduct.

Despite the growing attention given to ethical leadership in higher education, there remains a gap in literature concerning the influence of ethical leadership practices specifically among

secretaries in federal tertiary institutions. Most studies have concentrated on ethical leadership among top administrators or academic leaders (e.g., rectors, vice-chancellors, and deans), overlooking the subtle yet powerful influence of secretaries who handle daily administrative and ethical decisions at operational levels (Nwogbo & Okafor, 2021). Addressing this gap is essential for promoting a comprehensive understanding of how ethical practices at all levels contribute to organisational sustainability.

Therefore, this study aims to examine the influence of ethical leadership practices among secretaries on the sustainable organisational culture in federal tertiary institutions in Katsina State. The findings are expected to provide deeper insights into how ethical conduct among secretaries enhances institutional integrity, strengthens administrative processes, and contributes to the sustainability of organisational culture in Nigeria's federal tertiary education system.

Statement of the Problem

Ethical leadership has emerged as a critical component of effective and sustainable organisational management, particularly within public institutions. However, many Federal tertiary institutions in Katsina State continue to grapple with challenges such as declining integrity, poor accountability, and weak organisational values (Mohammed & Umar, 2023). Despite several administrative frameworks designed to promote ethical conduct, unethical behaviours such as mismanagement of information, lack of transparency, favouritism, and disregard for institutional rules persist. These problems have eroded trust, reduced staff morale, and hindered sustainable organisational growth.

Secretaries, who serve as key administrative officers within these institutions, occupy a vital position that connects top management with subordinates. Their daily interactions, decision-making processes, and professional ethics have the potential to shape the tone of the organisational culture. Unfortunately, there is evidence that many secretaries in these institutions face ethical dilemmas stemming from political interference, poor supervision, inadequate training, and a lack of clear ethical guidelines (Abdulkarim & Yusuf, 2021). The result is often inconsistency between institutional ethical values and actual administrative practices.

Although several studies have examined ethical leadership and organisational culture in broad contexts (Adeleke et al., 2023; Ogbonnaya & Ibekwe, 2022), limited attention has been given to the unique role of secretaries as ethical leaders in the Nigerian tertiary education system particularly within Katsina State. The gap in research on how ethical leadership

practices among secretaries influence the sustainability of organisational culture in these institutions creates a serious limitation for policy development and institutional reform.

Therefore, the problem this study seeks to address is the unclear influence of ethical leadership practices among secretaries on sustainable organisational culture in Federal tertiary institutions in Katsina State. Understanding this relationship is essential for improving administrative ethics, promoting organisational sustainability, and strengthening the moral foundations of higher education governance in Nigeria.

Research Objectives

The main objective of this study is to examine the influence of ethical leadership practices among secretaries on sustainable organisational culture in Federal tertiary institutions in Katsina State. The Specific are to:

1. Determine the extent to which ethical leadership practices are exhibited by secretaries in federal tertiary institutions in Katsina State.
2. Examine the relationship between secretaries' ethical leadership practices and teamwork, communication, and trust among administrative staff.
3. Examine the influence of secretaries' ethical leadership on maintaining and sustaining organisational cultural values in the institutions.

Research Hypotheses

H₀₁: Secretaries in federal tertiary institutions in Katsina State do not significantly exhibit ethical leadership practices.

H₀₂: There is no significant relationship between secretaries' ethical leadership practices and teamwork, communication, and trust among administrative staff.

H₀₃: Secretaries' ethical leadership has no significant influence on maintaining and sustaining organisational cultural values in federal tertiary institutions in Katsina State.

Literature Review

Theoretical Framework

2.1 Ethical Leadership Theory

Ethical Leadership Theory was extensively developed by **Michael E. Brown, Linda K. Trevino², and David A. Harrison (2006)**. The theory defines ethical leadership as the demonstration of normatively appropriate conduct through personal actions and interpersonal relationships, and the promotion of such conduct to followers through communication, reinforcement, and decision-making. The theory emphasizes that leadership effectiveness is inseparable from moral behaviour. Leaders influence followers not only by authority but by ethical example, fairness, integrity, and accountability.

Ethical leadership is structured around two major dimensions:

1. **Moral Person Dimension** – the leader’s character traits such as honesty, integrity, fairness, and trustworthiness.
2. **Moral Manager Dimension** – the leader’s deliberate efforts to promote ethical conduct through communication, reward systems, discipline, and role modelling.

In organisational settings, ethical leaders shape norms, values, and standards of behaviour, thereby influencing organisational culture.

Assumptions of Ethical Leadership Theory

Ethical Leadership Theory rests on the following assumptions:

1. Leaders influence ethical climate through their conduct.
2. Followers observe and imitate leader behaviour.
3. Ethical reinforcement strengthens organisational norms.
4. Ethical conduct enhances trust, commitment, and long-term sustainability.

Within Federal Tertiary Institutions, confidential secretaries occupy sensitive administrative positions that require discretion, fairness, and transparency. Their ethical leadership practices can directly influence institutional culture, compliance with policies, and professional relationships.

2.2 Concept of Ethical Leadership Practices

Ethical leadership refers to the demonstration of normatively appropriate conduct through both personal behavior and interpersonal relationships, coupled with the promotion of such behavior to followers through ethical guidance, communication, and decision-making. It emphasizes integrity, fairness, transparency, and accountability in leadership actions.

According to Brown and Treviño (2006), ethical leadership integrates two core dimensions: being a *moral person* (acting with honesty, fairness, and integrity) and a *moral manager* (actively promoting ethical behavior in others). Ethical leaders use these principles to shape organizational climates grounded in trust and justice.

Recent scholars have built upon this framework, emphasizing ethical leadership as a driver of organizational sustainability and employee well-being. Bedi, Alpaslan, and Green (2016) highlight that ethical leadership behavior fosters psychological safety, ethical decision-making, and mutual respect among team members. In contemporary workplace contexts, this has extended to inclusive and transparent communication within diverse teams.

More recently, Ng and Feldman (2021) demonstrate that ethical leadership positively influences employees’ organizational identification and reduces counterproductive work

behaviors. Their study shows that when leaders act ethically, they cultivate stronger interpersonal bonds and shared moral responsibility among staff.

In the context of higher education administration, Asmawi and Nasaruddin (2020) argue that ethical leadership among administrative staff promotes a culture of trust, fairness, and service integrity, contributing to sustainable institutional governance. Secretaries and administrators who display ethical leadership help create transparent communication channels and harmony among staff vital for organizational success.

Moreover, Afsar, Badir, and Kiani (2020) note that ethical leaders enhance the organization's moral climate by creating an environment where employees feel valued and respected, which increases engagement and shared purpose. In the same vein, Walumbwa et al. (2022) emphasize that ethical leadership strengthens followers' moral courage and commitment to collective goals, ensuring long-term organizational sustainability.

Finally, Eva, Newman, Miao, and Cooper (2020) in their comprehensive review of ethical leadership research, conclude that ethical leadership is a multidimensional construct promoting trust, fairness, and community-oriented behavior, critical for fostering sustainable organizational culture in both corporate and educational settings.

2.3 Concept of Secretaries

Secretaries are indispensable administrative professionals who serve as the backbone of organizational communication, management coordination, and documentation processes. They are responsible for handling correspondence, managing records, scheduling, providing clerical support, and ensuring the seamless operation of daily administrative functions. In educational environments particularly within tertiary institutions secretaries play a vital role in supporting leadership, maintaining institutional order, and facilitating effective communication between departments and administrative units.

According to Adebayo and Jimoh (2023), secretaries are not merely clerical workers but strategic administrative partners who contribute significantly to institutional efficiency and governance through their ethical conduct, confidentiality, and organizational commitment. Their professional roles have evolved from traditional stenography and record-keeping to encompass supervisory, managerial, and information management responsibilities in the modern workplace.

Okafor and Musa (2022) emphasize that secretaries serve as communication bridges between management and employees, ensuring that organizational decisions and directives are accurately conveyed and implemented. In federal tertiary institutions, they help in coordinating

meetings, maintaining official records, and upholding institutional policies functions that contribute to transparency and accountability.

Furthermore, Eze and Patrick (2023) note that the effectiveness of a secretary depends heavily on qualities such as integrity, discretion, loyalty, interpersonal skills, and mastery of office technology. Secretaries with strong ethical leadership tendencies help maintain organizational values and productivity by setting professional standards and promoting trust among administrative staff.

In today's dynamic administrative environment, the role of the secretary has expanded beyond routine administrative duties to include tasks involving human relations, office management, communication technology, and ethical decision-making. Brown and Treviño (2023) assert that secretaries who demonstrate ethical leadership not only improve administrative performance but also contribute to building a sustainable organizational culture based on fairness, accountability, and respect.

2.4 Concept of Organisational Culture

Organisational culture refers to the shared values, beliefs, norms, and behavioural patterns that shape how members of an organisation interact, make decisions, and accomplish their goals. It represents the social and psychological environment of an organisation the unseen yet powerful force that influences employee behaviour, attitudes, and overall institutional performance.

According to Schein and Schein (2023), organisational culture is “a pattern of shared basic assumptions learned by a group as it solves its problems of external adaptation and internal integration.” These assumptions are passed on to new members as the correct way to perceive and respond to organisational realities. Culture therefore acts as a guiding framework that determines how things are done within an institution.

In the context of tertiary institutions, Okeke and Hassan (2022) describe organisational culture as the collective ethos, beliefs, and practices that define how academic and administrative operations are conducted. A strong organisational culture promotes collaboration, accountability, and ethical compliance among staff, while a weak or negative culture can lead to inefficiency, distrust, and low morale.

Musa and Nwankwo (2023) assert that organisational culture directly influences the effectiveness of leadership, communication, and staff motivation. When leadership especially ethical leadership is aligned with the institution's values, it strengthens cultural sustainability and promotes institutional stability. In contrast, leadership that disregards ethical principles may weaken the organisational fabric and compromise shared values.

Furthermore, Adebayo and Okon (2023) highlight that culture is dynamic rather than static. It evolves with technological advancement, leadership transitions, and environmental changes. In Nigerian federal tertiary institutions, sustaining a positive organisational culture requires consistent reinforcement of values such as integrity, professionalism, teamwork, and respect for institutional norms.

Methodology

The study adopted a descriptive survey research design. The study population comprised a census of all 298 confidential secretaries working in Federal tertiary institutions in Katsina State, specifically: Federal University Dutsin-Ma, Federal University of Transportation Daura, Federal College of Education Katsina, and Federal Polytechnic Daura. The census was used, it served as the study sample. The study utilized a structured questionnaire titled “Ethical Leadership Practices and Organisational Culture Questionnaire (ELPOCQ).” The instrument consisted of three sections: Section A: Demographic information of respondents. Section B: Items regarding ethical leadership practices among secretaries. Section C: Items assessing sustainable organisational culture. Responses were measured using a four-point Likert scale, ranging from Strongly Agree (4) to Strongly Disagree (1). To ensure content and face validity, the questionnaire was reviewed by three experts in Psychology and Counselling from Ahmadu Bello University, Zaria. Their suggestions guided the revisions prior to final administration. A pilot test was conducted with 20 secretaries from a Federal tertiary institution outside Katsina State. The reliability was determined using Cronbach’s Alpha, yielding a coefficient of 0.70.

Data Collection and Analysis The researcher personally administered the questionnaire with the assistance of trained research assistants. Data were analysed using the Statistical Package for Social Sciences (SPSS) version 26. The hypotheses were tested using a t-test at a 0.05 level of significance.

Result

Hypothesis One: *Secretaries in federal tertiary institutions in Katsina State do not significantly exhibit ethical leadership practices*

Table One: T-test Analysis on the Secretaries in federal tertiary institutions in Katsina State that exhibit ethical leadership practices

Variable	t	df	Sig. (2-tailed)	Mean Difference	95% CI Lower	95% CI Upper
Ethical Leadership	26.11	297	.000	0.96	0.89	1.03

Source: Field study, 2025

The table one (1) presents the result of a one-sample t-test conducted to examine whether secretaries' ethical leadership significantly influences the maintenance and sustainability of organisational cultural values in federal tertiary institutions in Katsina State. With a calculated t-value of 26.11 and 297 degrees of freedom, the test produced a Sig. (2-tailed) value of .000. Since the p-value (.000) is less than the 0.05 level of significance, the result is statistically significant.

The mean difference of 0.96 indicates that the observed mean score on ethical leadership is 0.96 units higher than the test value (likely the neutral midpoint). This suggests that respondents rated ethical leadership substantially above average.

Furthermore, the 95% confidence interval ranges from 0.89 to 1.03, and since this interval does not include zero, it confirms that the difference is statistically significant and not due to chance. The narrow range of the confidence interval also indicates precision and reliability in the estimate. Because the p-value is less than 0.05, the null hypothesis stating that secretaries' ethical leadership has no significant influence on maintaining and sustaining organisational cultural values is rejected.

The findings reveal that secretaries' ethical leadership has a significant positive influence on maintaining and sustaining organisational cultural values in federal tertiary institutions in Katsina State. This implies that ethical conduct, integrity, fairness, and accountability demonstrated by secretaries contribute meaningfully to preserving and strengthening organisational culture within the institutions studied.

Hypothesis Two: *There is no significant relationship between secretaries' ethical leadership practices and teamwork, communication, and trust among administrative staff.*

Table 2: Pearson Product Moment Correlation Analysis on the Relationship between Secretaries' Ethical leadership Practices and Teamwork, Communication, and Trust among Administrative staff.

Variable Compared	R-value	P-value	Decision	Interpretation
Ethical Leadership & Teamwork	0.62	0.000	Reject H ₀	Strong positive relationship
Ethical Leadership & Communication	0.58	0.000	Reject H ₀	Moderate positive relationship

Ethical Leadership & Trust	0.71	0.000	Reject H ₀	Strong positive relationship

Source: Field Study, 2025

The results in table (2) indicated that secretaries' ethical leadership practices significantly influence teamwork, communication, and trust among administrative staff. Teamwork has ($r = 0.62$) which indicated that there is a strong positive relationship. This means that as ethical leadership increases, teamwork among administrative staff improves significantly. A Communication has a ($r = 0.58$) A moderate positive relationship exists. Ethical behavior promotes openness, clarity, and effective communication. Trust has ($r = 0.71$) this shows the strongest relationship. Ethical leadership builds confidence, reliability, and mutual respect within the workplace. There is a statistically significant relationship between secretaries' ethical leadership practices and teamwork, communication, and trust among administrative staff ($N = 298$, $p < 0.05$).

Hypothesis Three: *Secretaries' ethical leadership has no significant influence on maintaining and sustaining organisational cultural values in federal tertiary institutions in Katsina State.*

Table 3: T-test analysis on the Influence of Secretaries' Ethical Leadership on Organisational Cultural Values

Variable	N	Mean(X)	Test Value	SD	df	t-cal	t-critical (0.05)	Decision
Secretarial Ethical Leadership and Organization Cultural Values	298	3.8	3.00	0.72	297	20.38	1.96	Reject

Source: Field Study, 2025

The result in Table 3 shows that the calculated t-value (20.38) is greater than the critical t-value (1.96) at 0.05 level of significance with 297 degrees of freedom. Since the calculated t-value exceeds the critical value, the null hypothesis is rejected. This indicates that secretaries' ethical leadership has a statistically significant influence on maintaining and sustaining organisational cultural values in federal tertiary institutions in Katsina State. The high mean score (3.85) compared to the neutral test value (3.00) further suggests that respondents agreed

that ethical leadership practices among secretaries contribute meaningfully to sustaining organisational culture within the institutions studied.

Discussion of Findings

The findings of table (1) revealed that secretaries' ethical leadership has a significant positive influence on maintaining and sustaining organisational cultural values in federal tertiary institutions in Katsina State. The statistical evidence indicating a significant result ($p < 0.05$) confirms that ethical leadership practices demonstrated by secretaries meaningfully contribute to the preservation and reinforcement of institutional culture. This result supports contemporary leadership research which emphasizes that ethical leadership plays a central role in shaping organisational norms, behaviours, and shared values. Ethical leadership is grounded in principles such as integrity, fairness, transparency, and accountability, which serve as foundational elements of a strong organisational culture (Brown & Treviño, 2006; Bedi et al., 2016). When secretaries consistently model ethical behaviour in their administrative responsibilities such as maintaining confidentiality, ensuring procedural fairness, and upholding institutional regulations they reinforce cultural expectations and strengthen trust within the institution.

Recent studies further affirm that ethical leadership positively influences organisational culture by fostering trust, psychological safety, and value alignment among employees (Ahmad & Gao, 2021; Hassan et al., 2023). In tertiary institutions, where administrative processes significantly affect academic and operational effectiveness, secretaries occupy strategic positions that shape daily interactions and institutional standards. Their ethical decisions in documentation, communication flow, and compliance management contribute to sustaining institutional integrity and cultural continuity.

Moreover, ethical leadership enhances organisational commitment and reduces misconduct, thereby supporting long-term cultural stability (Islam et al., 2022). When secretaries demonstrate fairness and accountability, they promote consistency in institutional practices, discourage favouritism, and strengthen procedural transparency. These behaviours reinforce shared values and create a work environment that aligns with the institution's mission and vision.

The findings are also consistent with social learning theory, which suggests that employee's model behaviours observed in influential organisational members. Ethical leaders serve as role models, and their actions shape the behavioural norms of others (Brown & Treviño, 2006). In this context, secretaries' ethical conduct sets informal standards that influence colleagues and subordinates, thereby sustaining organisational culture over time.

The results presented in Table (2) indicate that secretaries' ethical leadership practices significantly influence teamwork, communication, and trust among administrative staff. The correlation coefficient for teamwork ($r = 0.62$) demonstrates a strong positive relationship, suggesting that higher levels of ethical leadership are associated with stronger collaborative practices among administrative personnel. An R-value of 0.62 implies a substantial degree of association, meaning that as secretaries demonstrate greater integrity, fairness, transparency, and accountability, the quality of teamwork correspondingly improves.

This finding aligns with recent empirical research which suggests that ethical leadership enhances cooperative behaviour and collective engagement within organisations. Ethical leaders foster inclusive decision-making, fairness, and mutual respect, which in turn promote collaborative work environments (Bavik et al., 2022). When administrative staff perceive their leaders as ethical and consistent, they are more willing to coordinate efforts, share responsibilities, and support collective goals. In tertiary institutions, where administrative functions require coordination across departments, such ethical guidance strengthens institutional cohesion.

Furthermore, ethical leadership has been shown to significantly improve organisational communication by creating open and psychologically safe environments (Javed et al., 2021). Ethical leaders encourage transparency and discourage information hoarding, thereby enhancing effective communication channels among staff. In the context of this study, secretaries who adhere to ethical standards likely ensure clarity in documentation, fairness in information dissemination, and consistency in administrative procedures, all of which improve communication flow within the institution.

The result presented in Table 3 shows that the calculated t-value (20.38) is greater than the critical t-value (1.96) at the 0.05 level of significance with 297 degrees of freedom. Since the calculated value exceeds the critical value, the null hypothesis was rejected. This indicates that secretaries' ethical leadership has a statistically significant influence on maintaining and sustaining organisational cultural values in federal tertiary institutions in Katsina State.

This finding reinforces contemporary leadership research which establishes ethical leadership as a key determinant of organisational culture and value sustainability. Ethical leadership, characterized by integrity, fairness, accountability, and transparency, shapes institutional norms by influencing employees' attitudes and behaviours (Hassan et al., 2023). When leaders consistently model ethical standards, they create an environment where shared values are reinforced and organisational culture becomes stable and resilient.

The significant influence observed in this study aligns with recent empirical evidence suggesting that ethical leadership strengthens value congruence and institutional trust, both of which are central to sustaining organisational culture (Nguyen et al., 2022). In tertiary institutions, secretaries often function as administrative gatekeepers, managing official communication, documentation, and procedural implementation. Their ethical conduct therefore directly impacts how institutional policies are perceived and upheld by staff members. Moreover, research indicates that ethical leadership contributes to cultural continuity by reducing unethical practices and fostering accountability across organisational levels (Islam et al., 2022). When secretaries demonstrate ethical consistency, they reinforce compliance with institutional standards and promote fairness in administrative operations. Such behaviour strengthens organisational identity and enhances collective commitment to institutional values. The strong statistical significance ($t = 20.38, p < 0.05$) suggests that the observed influence is not due to chance but reflects a meaningful relationship between ethical leadership and organisational culture. This finding supports social learning theory, which posits that employees emulate the behaviours of ethical role models within the organisation. Secretaries who embody ethical principles therefore serve as behavioural anchors that sustain institutional norms and cultural values

Conclusion

The study concludes that ethical leadership serves as a foundational pillar for sustaining organisational cultural values in federal tertiary institutions in Katsina State. Ethical leadership at the administrative level strengthens institutional trust, reinforces teamwork and communication, and supports long-term cultural stability. Therefore, promoting ethical standards and leadership development among secretaries should be considered a strategic priority for institutional management.

Recommendation

Based on the findings that secretaries' ethical leadership significantly influences organisational cultural values, teamwork, communication, and trust among administrative staff in federal tertiary institutions in Katsina State, the following implementable recommendations are proposed:

1. Federal tertiary institutions should establish structured and continuous ethical leadership training programmes specifically for secretaries and administrative officers. These programmes should focus on integrity, accountability, transparency, fairness, conflict management, and professional conduct.

2. Institutions should develop or strengthen a comprehensive administrative code of ethics that clearly outlines expected standards of behaviour for secretaries. Beyond documentation, there should be practical enforcement and monitoring mechanisms.
3. Management should intentionally create structures that encourage teamwork, open communication, and trust-building among administrative staff. Ethical leadership thrives in environments where collaboration and transparency are institutionalised.

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THE INFLUENCE OF CORPORATE GOVERNANCE PRACTICES ON THE
QUALITY OF FINANCIAL REPORTING IN NIGERIA

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Abstract

Sustainable development seeks to eradicate poverty, reduce inequality and injustice, and address climate change by 2030. Corporate governance practices play a critical role in achieving these objectives by promoting transparency, accountability, and efficient resource utilization. This study examines the influence of corporate governance practices on the quality of financial reporting among listed companies in Nigeria. Using a quantitative research design, the study empirically investigates the relationship between some selected corporate governance variables; board independence, audit committee quality, ownership disclosure, and enhanced disclosure rules and financial reporting quality. The study employs a sample of fifty (50) top listed companies on the Nigerian Exchange (NGX) over the period 2014–2023. Panel regression analysis reveals that stronger corporate governance mechanisms significantly improve financial reporting quality. The findings indicate that board independence, audit committee quality and ownership disclosure have statistically significant positive effects on reporting quality at the 0.05 level. However, enhanced disclosure rules did not show statistical significant effect at the 0.05 level. The regression results indicate that the model is statistically significant, with an F-statistic of 12.08 ($p < .001$), suggesting that the explanatory variables jointly explain variations in financial reporting quality. The adjusted R^2 of 0.47 implies that approximately 47% of the variation in financial reporting quality is explained by the corporate governance variables included in the model. Hence, the study concludes that effective corporate governance practices enhance financial reporting quality in Nigeria. It is recommended that, listed Nigerian companies should make frequent disclosures of financial information so as to improve transparency and strict enforcement of governance codes to improve confidence in the financial information and attract investors.

Keywords: Audit committee quality, board independence, corporate governance, financial reporting quality, sustainable development

1. Introduction

Sustainable development has become a central objective of governments, businesses, and international organizations, particularly following the adoption of the United Nations Sustainable Development Goals (SDGs). Achieving sustainable development requires strong institutional frameworks, transparency, accountability, and ethical corporate behavior. Corporate governance, which defines the structures and processes for directing and controlling organizations, plays a vital role in ensuring that companies operate responsibly and sustainably (OECD, 2023).

In emerging economies such as Nigeria, weak corporate governance has been linked to poor financial reporting quality, corporate failures, and loss of investor confidence. Financial reporting quality is essential for efficient capital allocation, investor protection, and long-term economic growth. High-quality financial reports reduce information asymmetry, enhance transparency, and support sustainable business practices (Dechow et al., 2019).

Financial reporting quality (FRQ) plays a pivotal role in the functioning of capital markets by ensuring that financial information is relevant, reliable, and faithfully represented. High-quality financial reports reduce information asymmetry between corporate managers and stakeholders, facilitate efficient resource allocation, and enhance investor confidence (Dechow et al., 2010). In emerging economies such as Nigeria, however, the credibility of financial reporting has often been questioned due to persistent governance weaknesses, regulatory enforcement gaps, and high-profile corporate scandals which is linked to corporate governance,

Corporate governance (CG) refers to the system of rules, practices, and processes by which firms are directed and controlled (OECD, 2015). It provides a framework for balancing the interests of shareholders, management, regulators, and other stakeholders. In Nigeria, weak governance structures have been linked to earnings manipulation, poor disclosure practices, and financial statement fraud (Okike, 2007; Sadiq & Othman, 2017). These challenges have prompted regulatory interventions, including the introduction of the Securities and Exchange Commission (SEC) Code of Corporate Governance (2018) and the adoption of International Financial Reporting Standards (IFRS) in 2012.

Despite these reforms, empirical evidence on the effectiveness of specific corporate governance mechanisms in improving FRQ in Nigeria remains mixed. Prior studies often focus on broad governance indices, leaving limited understanding of how specific governance attributes affect reporting outcomes. This study addresses this gap by examining the relationship between selected corporate governance variables; board independence, audit committee quality, ownership disclosure, and enhanced disclosure rules and financial reporting quality in Nigeria.

1.1 Alignment the Study with Sustainable Development Goals (SDGs)

This study is aligned with the United Nations Sustainable Development Goals (SDGs), particularly SDG 16 (Peace, Justice and Strong Institutions) and SDG 12 (Responsible Consumption and Production). SDG 16 emphasizes the need for effective, accountable, and transparent institutions, which are directly supported by strong corporate governance practices and high-quality financial reporting. Transparent financial disclosures enhance accountability, reduce corruption, and strengthen investor confidence, thereby contributing to institutional integrity.

SDG 12 promotes responsible business practices, efficient resource utilization, and sustainability-oriented decision-making. High-quality financial reporting provides reliable information for assessing firms' economic performance and sustainability initiatives, enabling stakeholders to evaluate responsible production and consumption practices. By strengthening governance mechanisms such as board independence, audit committee quality, and enhanced disclosure rules, firms contribute to the achievement of these SDGs through improved transparency, accountability, and sustainable corporate behavior.

1.2 Study Justification

Previous Nigerian studies report mixed findings on the relationship between corporate governance and financial reporting quality. While some studies document a positive relationship (Saidu & Musa, 2019; Adegboye et al., 2022), others find weak or insignificant effects, suggesting the need for further empirical investigation using updated data and broader governance indicators. Thus, this study contributes to the literature by providing updated empirical evidence using recent data and by isolating governance mechanisms that are particularly relevant to the Nigerian institutional environment. It also offers policy-relevant insights for regulators, corporate boards, and investors.

2.0 Literature Review

2.1 Corporate Governance and Sustainable Development

Corporate governance is grounded in agency theory, which posits that conflicts arise due to the separation of ownership and control in modern corporations (Jensen & Meckling, 1976). Managers may pursue personal interests at the expense of shareholders, leading to opportunistic behavior such as earnings manipulation. Governance mechanisms serve as monitoring tools to align managerial actions with shareholder interests. Stakeholder theory further broadens the scope of corporate governance by emphasizing accountability to a wide range of stakeholders, including employees, creditors, regulators, and society at large (Freeman et al., 2021). From this perspective, transparent financial reporting is a fundamental governance outcome.

In Nigeria, corporate governance frameworks are shaped by statutory requirements such as the Companies and Allied Matters Act (CAMA, 2020), SEC codes, and sector-specific regulations, particularly in the banking and insurance industries. In the same vein, corporate governance is widely recognized as a key driver of sustainable development because it promotes accountability, ethical conduct, and long-term value creation (UNCTAD, 2022). In the same vein, Kaka (2023) examines corporate governance effects on financial reporting quality in Nigerian construction companies. Using regression analysis, the study finds that board composition and audit committee effectiveness positively influence reporting quality. Thus, effective governance mechanisms ensure that management actions align with shareholders' and stakeholders' interests, thereby supporting economic, social, and environmental sustainability to ensure a quality financial reporting.

2.2 Financial Reporting Quality

Financial reporting quality (FRQ) refers to the degree to which financial statements faithfully represent a firm's economic performance and position (IASB, 2018). High-quality reporting enhances decision usefulness by improving relevance, comparability, timeliness, and verifiability.

Empirical studies measure FRQ using various proxies, including accrual quality, earnings persistence, earnings smoothness, and disclosure indices (Dechow & Dichev, 2002; Francis et al., 2004). In emerging markets, disclosure-based measures are particularly useful due to differences in enforcement and institutional quality (Hope, 2003).

Johri (2024) investigates the effect of International Financial Reporting Standard (IFRS) adoption on financial reporting quality for multinational companies. The study uses archival data and finds that IFRS adoption is positively associated with higher reporting quality, reflecting improved comparability and transparency in financial disclosures across jurisdictions. Subsequently, Asogba et al. (2025) examine the relationship between board, audit quality and financial reporting quality among quoted non-financial firms in Nigeria. They find that higher audit quality is associated with improved reporting outcomes, underscoring the importance of external oversight mechanisms in enhancing disclosure credibility. Hence, this paper considers board independence and financial reporting quality.

2.2.1 Board Independence and Financial Reporting Quality

Board independence is widely regarded as a cornerstone of effective corporate governance. Independent non-executive directors are expected to provide objective oversight, challenge managerial decisions, and protect shareholder interests (Fama & Jensen, 1983). Thus, board

independence can be referred to the presence of non-executive and independent directors who can objectively monitor management activities.

Empirical evidence generally supports a positive association between board independence and FRQ. Klein (2002) finds that firms with more independent boards are less likely to engage in earnings management. Prior studies suggest that independent boards enhance financial reporting quality by reducing earnings manipulation and strengthening oversight (Klein, 2020; Alkurdi et al., 2021). Because, independent directors are more likely to demand transparent and reliable financial disclosures. Recent studies in emerging markets also report similar findings (Alkurdi et al., 2021; Ntim et al., 2020). In Nigeria, board independence has been emphasized in governance codes, yet its effectiveness depends on directors' expertise, true independence and audit committee quality.

2.2.2 Audit Committee Quality and Financial Reporting Quality

The audit committee plays a critical role in overseeing financial reporting processes, internal controls, and external audits. Audit committee quality is often assessed based on independence, financial expertise, size, and meeting frequency (Carcello et al., 2011).

High-quality audit committees enhance financial reporting credibility by reducing earnings manipulation and improving disclosure transparency (Beasley et al., 2009). Recent studies provide strong evidence of a positive relationship between audit committee effectiveness and FRQ (Alzoubi, 2019; Olayinka et al., 2022).

In Nigeria, audit committees are statutorily mandated under CAMA, but concerns remain about their independence and technical competence. Thus, the role of audit committees cannot be overemphasized in overseeing the financial reporting process and ensuring compliance with accounting standards. Audit committee quality is often measured by independence, expertise, and meeting frequency. Empirical evidence indicates that strong audit committees improve financial reporting quality and reduce the likelihood of financial misstatements (Baatwah et al., 2022; Velte, 2023).

2.2.3 Ownership Disclosure and Financial Reporting Quality

Ownership disclosure refers to the extent to which firms transparently report ownership structures, major shareholders, and related party interests. In environments characterized by concentrated ownership, such as Nigeria, opaque ownership structures may facilitate expropriation of minority shareholders (La Porta et al., 1999). Ownership disclosure reduces information asymmetry and improves monitoring by external stakeholders. Recent studies confirm that firms with higher ownership disclosure exhibit better reporting quality and lower earnings manipulation (Baatwah et al., 2020; Uwalomwa et al., 2023).

Ownership disclosure enhances transparency by revealing the concentration and structure of ownership, thereby reducing information asymmetry. Enhanced disclosure rules strengthen regulatory oversight and improve the credibility of financial statements. Studies have shown that greater disclosure is positively associated with reporting quality and investor confidence (Bushman et al., 2021; IFRS Foundation, 2023).

2.2.4 Enhanced Disclosure Rules and Financial Reporting Quality

Enhanced disclosure rules include expanded reporting requirements under IFRS, corporate governance disclosures, segment reporting, and related party disclosures. Such rules are designed to improve transparency and comparability across firms and jurisdictions (Barth et al., 2008).

Although IFRS adoption has generally been associated with improved accounting quality, its effectiveness depends on enforcement strength (Christensen et al., 2015). In Nigeria, compliance with enhanced disclosure rules remains uneven, raising questions about their actual impact on FRQ. Enhanced disclosure rules include regulatory requirements for extensive financial and non-financial disclosures, such as segment reporting, related party transactions, and governance disclosures.

Some studies indicate that enhanced disclosure rules can improve reporting quality, although the effect may be attenuated by weak enforcement mechanisms (Christensen et al., 2015). In Nigeria, enhanced disclosure requirements are increasingly emphasized, but compliance challenges persist. Thus, adoption of IFRS and related governance codes aims to improve comparability and transparency (Barth et al., 2008). In addition, IFRS S1 and S2 on mandatory disclosure standards is theorized to strengthen financial and sustainability reporting quality by enhancing comparability and completeness of disclosures for investors (Okoye et al., 2025).

However, the effectiveness of disclosure rules depends on enforcement and compliance, which may be uneven in emerging economies. Thus, recent studies underscore that expanded mandatory disclosure requirements especially those for sustainability and risk information mark the most fundamental change in corporate reporting regulation and have strong implications for financial reporting quality (Turner et al., 2025).

2.3 Theoretical Framework

This study is anchored on Agency Theory, Stakeholder Theory, and Institutional Theory to explain the relationship between corporate governance practices and financial reporting quality in Nigeria.

2.3.1 Agency Theory

Agency theory explains the relationship between principals (shareholders) and agents (managers), emphasizing conflicts of interest that arise due to separation of ownership and control (Jensen & Meckling, 1976). Managers may pursue personal interests at the expense of shareholders, leading to opportunistic behaviors such as earnings management and poor financial reporting. Corporate governance mechanisms such as board independence and audit committee quality serve as monitoring tools to mitigate agency problems. Independent directors and effective audit committees enhance oversight, reduce information asymmetry, and promote high-quality financial reporting (Dechow et al., 2019; Velte, 2023). In the Nigerian context, where ownership dispersion and weak enforcement may heighten agency conflicts, strong governance structures are critical for improving reporting quality.

2.3.2 Stakeholder Theory

Stakeholder theory posits that corporations are accountable not only to shareholders but also to a wide range of stakeholders, including employees, creditors, regulators, communities, and the environment (Freeman et al., 2021). High-quality financial reporting enables stakeholders to make informed decisions and assess corporate performance and sustainability practices. Governance mechanisms such as enhanced disclosure rules and ownership disclosure align corporate actions with stakeholder expectations by promoting transparency and accountability. From a sustainable development perspective, stakeholder-oriented governance supports long-term value creation and social legitimacy (UNCTAD, 2022; OECD, 2023).

2.3.3 Institutional Theory

Institutional theory emphasizes the role of regulatory, normative, and cultural pressures in shaping organizational practices (DiMaggio & Powell, 1983). Firms adopt corporate governance practices to gain legitimacy and conform to regulatory requirements and societal expectations. In Nigeria, institutional forces such as the Nigerian Code of Corporate Governance, IFRS adoption, and NGX listing requirements compel firms to enhance disclosure and strengthen governance structures. Compliance with enhanced disclosure rules and ownership disclosure requirements improves financial reporting quality by standardizing reporting practices and increasing comparability (IFRS Foundation, 2023). Institutional theory therefore explains why firms with stronger governance practices are more likely to produce higher-quality financial reports.

These theories discussed provide a robust framework for understanding how corporate governance practices influence financial reporting quality. Agency theory highlights monitoring and control mechanisms, stakeholder theory emphasizes transparency and

accountability to multiple interest groups, while institutional theory explains compliance with regulatory and normative pressures.

2.4 Development of Hypotheses

Grounded in Agency Theory, Stakeholder Theory, and Institutional Theory, the following hypotheses are formulated to guide the empirical analysis:

H1: Board independence has a positive and significant effect on financial reporting quality of listed companies in Nigeria.

H2: Audit committee quality has a positive and significant effect on financial reporting quality of listed companies in Nigeria.

H3: Ownership disclosure has a positive and significant effect on financial reporting quality of listed companies in Nigeria.

H4: Enhanced disclosure rules have a positive and significant effect on financial reporting quality of listed companies in Nigeria.

3.0 Methodology

3.1 Research Design

The study adopts a quantitative research design using an ex-post facto approach. Panel data analysis is employed to examine the relationship between corporate governance practices and financial reporting quality.

3.2 Population and Sample

The population consists of all companies listed on the Nigerian Exchange (NGX). A purposive sample of fifty (50) top listed companies was selected based on market capitalization and data availability for the period 2014–2023. The top 50 firms were chosen based on market capitalization, ensuring that the sample represents firms with significant economic impact, extensive investor interest, and active corporate governance practices. High-market-cap firms are more likely to have well-established board structures, audit committees, and disclosure practices, which are central to the study objectives.

Another justification is the data availability and reliability which the study adopts only firms with complete and consistent financial and corporate governance data over the ten-year period. Thus, purposive selection allows for data integrity, minimizing missing values and inconsistencies that would ensure accuracy of the analysis. In the same vein, the study aims to investigate the influence of corporate governance mechanisms on financial reporting quality thus, selecting firms with adequate governance structures and disclosure practices ensures that the variables of interest (board independence, audit committee quality, ownership disclosure,

enhanced disclosure rules) are observable and measurable. Lastly, a purposive sample is efficient and manageable, especially given the panel data structure. This sample size provides sufficient statistical power while allowing detailed data collection and verification.

3.3 Variables and Measurement

This study adopts the performance-matched discretionary accrual model developed by Kothari, Leone and Wasley (2005) to measure financial reporting quality. The model extends the Modified Jones model by incorporating Return on Assets (ROA) to control for firm performance effects. This is particularly relevant in corporate governance studies where governance mechanisms are associated with profitability. The absolute value of discretionary accruals derived from the model is used as a proxy for financial reporting quality, with lower values indicating higher reporting quality. While Board independence is measured as the proportion of independent non-executive directors to total board size (Lippolis & Grimaldi, (2020). This measure is widely adopted in corporate governance literature as it reflects the monitoring strength and objectivity of the board.

The second independent variable; Audit Committee Quality (ACQ) is treated in this study as a multidimensional construct reflecting the effectiveness of the audit committee in monitoring financial reporting processes. Consistent with agency theory, an effective audit committee strengthens oversight, reduces information asymmetry, and enhances financial reporting credibility. In line with the corporate governance provisions of the Financial Reporting Council of Nigeria and the SEC Nigeria Code of Corporate Governance, this study measures ACQ using a composite index approach, incorporating four core attributes (Audit Committee Independence, Audit Committee Financial Expertise, Audit Committee Size and Audit Committee Meeting Frequency). The composite Audit Committee Quality Index (ACQI) is constructed by summing standardized values of the four components. This multidimensional measurement is adopted to improve construct validity and to avoid the limitations associated with single-proxy measures.

In the same vein, Ownership Disclosure is typically measured using a disclosure index model, because it is a transparency-based construct rather than a structural one. Lastly, enhanced disclosure rule was measured using a Structured Disclosure Compliance Index Model (SDCIM) grounded in OECD Principles and the Nigerian Code of Corporate Governance (FRCN, 2018).

This give a strong theoretical backing through the Agency Theory, regulatory relevance and quantifiable measurement for regression analysis.

The control variables of the study consists of firm size which is measured as the natural logarithm of total assets. The logarithmic transformation is adopted to reduce skewness and ensure linearity in regression estimation. This approach is consistent with prior corporate governance and financial reporting quality studies and controls for scale effects associated with larger firms (Akoje et al., 2025; Bello et al., 2024; Kadir, 2025; Saputra & Dewi, 2025). Leverage (LEV) is measured as total debt divided by total assets. This ratio captures the proportion of firm assets financed through debt and reflects creditor monitoring pressure. Prior governance and financial reporting quality studies include leverage as a control variable because highly leveraged firms face stronger contractual constraints and disclosure requirements, which may influence financial reporting behavior. The book-value debt-to-assets ratio is preferred due to its stability and consistency in panel regression analysis (Amanamah, 2024; Sinebe et al., 2025; Waley et al., 2025; Yusuf et al., 2025). Lastly, Profitability is measured as return on assets (ROA), computed as net income divided by total assets. ROA reflects managerial efficiency in utilizing firm assets to generate earnings and is widely used in corporate governance and financial reporting quality studies. Including profitability as a control variable accounts for performance-related incentives that may influence financial reporting behavior and governance effectiveness (Hossain, 2024; Osueke et al., 2026).

3.4 Model Specification

The regression model is specified as:

$$FRQ_{it} = \beta_0 + \beta_1 BIND + \beta_2 ACQ + \beta_3 OWND + \beta_4 EDR + \beta_5 FSIZE + \beta_6 LEV + \beta_7 PROF + \epsilon_{it}$$

Explanation of the Model Specification

The regression model specified below is used to examine the effect of selected corporate governance mechanisms on financial reporting quality among listed firms in Nigeria:

$$FRQ_{it} = \beta_0 + \beta_1 BIND_{it} + \beta_2 ACQ_{it} + \beta_3 OWND_{it} + \beta_4 EDR_{it} + \beta_5 Controls_{it} + \epsilon_{it}$$

The model expresses financial reporting quality (FRQ) as a function of key corporate governance variables and a set of control variables, while accounting for random disturbances where FRQ represents financial reporting quality, BIND denotes board independence, ACQ represents audit committee quality, OWND refers to ownership disclosure, EDR captures enhanced disclosure rules, FSIZE is firm size, LEV represents leverage, PROF denotes profitability, and ϵ_{it} is the error term.

The model allows the study to:

- Quantify the individual contribution of each corporate governance mechanism to financial reporting quality
- Test the study's hypotheses using statistical significance of the coefficients
- Control for extraneous firm-level influences
- Provide empirical evidence on the effectiveness of corporate governance practices in Nigeria

3.5 Data Analysis Technique

The data collected for this study were systematically analyzed using descriptive statistics and panel regression techniques to assess the impact of corporate governance practices on the quality of financial reporting among top-listed Nigerian firms. These techniques were chosen to ensure a robust and comprehensive examination of the relationships between the study variables.

Descriptive statistics were employed to summarize and present the key characteristics of the dataset, including measures of central tendency (mean, median) and variability (standard deviation). This provided an initial understanding of the distribution and patterns of corporate governance attributes such as board independence, audit committee quality, and ownership disclosure. To examine the causal effects of corporate governance practices on financial reporting quality over time, panel regression analysis was applied. This technique was appropriate because the study dataset spans ten years (2014–2023) and involves multiple firms, thereby combining cross-sectional and time-series dimensions. The fixed effects model (FEM) and random effects model (REM) were both considered, with model selection guided by the Hausman specification test to ensure the most appropriate estimation method. Panel regression allowed for control of unobserved heterogeneity among firms and provided a dynamic perspective on how governance practices influence financial reporting quality. All statistical tests were evaluated at a significance level of 0.05. Findings with p-values below this threshold were considered statistically significant, indicating strong evidence of the relationship between corporate governance practices and financial reporting quality.

4.0 Results and Discussion

4.1 Descriptive Statistics

Table 1 presents the results of the descriptive analysis of corporate governance variables and financial reporting quality (FRQ).

Table 1.

Descriptive Statistics of Study Variables (2014–2023)

Variable	Mean	Median	Std. Dev.	Minimum	Maximum	Observations
FRQ	0.716	0.728	0.104	0.451	0.903	500
BIND	0.420	0.400	0.118	0.200	0.750	500
ACQ	0.664	0.670	0.092	0.420	0.880	500
OWND	0.638	0.650	0.146	0.310	0.910	500
EDR	0.701	0.715	0.121	0.390	0.940	500
FSIZE	16.104	16.021	1.287	13.442	19.312	500
LEV	0.458	0.440	0.182	0.060	0.870	500
PROF	0.084	0.079	0.071	-0.185	0.264	500

Table 1 presents the descriptive analysis which reveals a moderate variability in corporate governance attributes among the sampled firms listed on the Nigerian Exchange Group between 2014 and 2023. On average, board independence stands at approximately 42%, indicating that less than half of board members are independent directors. Audit committee quality scores are moderately high, suggesting relatively strong oversight mechanisms across firms. Ownership disclosure exhibits wide dispersion, reflecting significant differences in transparency practices among firms. Similarly, the enhanced disclosure compliance index varies across firms, indicating uneven adherence to disclosure regulations. The dataset comprises 50 top listed companies over a 10-year period, resulting in 500 firm-year observations.

4.2 Correlation Analysis

Table 2 presents the results of the correlation analysis of the study corporate governance variables on financial reporting quality (FRQ).

Table 2

Correlation Matrix of Study Variables

Variables	FRQ	BIND	ACQ	OWND	EDR	FS	LEV	PROF
FRQ	1.000							
BIND	0.472**	1.000						
ACQ	0.556**	0.431**	1.000					
OWND	0.503**	0.368**	0.417**	1.000				

Variables	FRQ	BIND	ACQ	OWND	EDR	FS	LEV	PROF
EDR	0.528**	0.392**	0.446**	0.401**	1.000			
FS	0.327*	0.289*	0.305*	0.271*	0.298*	1.000		
LEV	-0.218*	-0.146	-0.171	-0.160	-0.182	0.201	1.000	
PROF	0.381**	0.263*	0.296*	0.278*	0.301*	0.422**	-0.209*	1.000

Table 2 presents the correlation matrix showing the pairwise relationships among the variables used in the study. The results indicate that financial reporting quality (FRQ) has positive correlations with the major corporate governance variables, namely board independence (BIND), audit committee quality (ACQ), ownership disclosure (OWND), and enhanced disclosure rules (EDR). This suggests that stronger corporate governance mechanisms and disclosure practices tend to improve the quality and credibility of financial reporting among the sampled Nigerian firms. Among the governance variables, audit committee quality (ACQ) and enhanced disclosure rules (EDR) show relatively stronger positive correlations with financial reporting quality, implying that effective audit oversight and improved disclosure standards play important roles in enhancing financial reporting transparency.

Regarding the control variables, firm size (FS) and profitability (PROF) exhibit positive relationships with financial reporting quality, indicating that larger and more profitable firms are more likely to maintain higher reporting standards. Conversely, leverage (LEV) shows a weak negative relationship with financial reporting quality, suggesting that firms with higher debt obligations may face pressures that could affect reporting practices. Importantly, none of the correlation coefficients exceed the threshold of 0.80, which indicates the absence of serious multicollinearity among the explanatory variables. This confirms that the variables are suitable for inclusion in the panel regression analysis used to examine the impact of corporate governance practices on financial reporting quality.

4.3 Regression Results

Table 3 presents the results of the multiple regression analysis testing the influence of the selected corporate governance variables on financial reporting quality (FRQ):

Table 3.

Multiple Regression Results Predicting Financial Reporting Quality

Predictor	Coefficient (β)	Standard Error	t-statistic	p-value
Intercept (β ₀)	0.172	0.043	4.00	< .001

Predictor	Coefficient (β)	Standard Error	t-statistic	p-value
Board Independence (BIND)	0.214	0.061	3.51	< .001
Audit Committee Quality (ACQ)	0.186	0.054	3.44	< .001
Ownership Disclosure (OWND)	0.159	0.049	3.24	.001
Enhanced Disclosure Rules (EDR)	0.081	0.047	1.72	.087
Firm Size	0.092	0.029	3.17	.002
Leverage	-0.073	0.031	-2.35	.019
Profitability	0.107	0.028	3.82	< .001
Adjusted R²	0.47			
F-statistic	12.08**			< .001

Note: N = firm-year observations; significance levels: $p < .05$, $p < .01$.

Table 3 presents the results of a multiple regression analysis examining the effect of corporate governance mechanisms and firm-specific characteristics on Financial Reporting Quality (FRQ).

The empirical model estimated is specified as follows:

$$FRQ_{it} = \beta_0 + \beta_1 BIND_{it} + \beta_2 ACQ_{it} + \beta_3 OWND_{it} + \beta_4 EDR_{it} + \beta_5 FSIZE_{it} + \beta_6 LEV_{it} + \beta_7 PROF_{it} + \epsilon_{it}$$

4.3 Interpretation of Regression Results

The regression results indicate that the model is statistically significant, with an F-statistic of 12.08 ($p < .001$), suggesting that the explanatory variables jointly explain variations in financial reporting quality. The adjusted R^2 of 0.47 implies that approximately 47% of the variation in financial reporting quality is explained by the governance and firm-specific variables included in the model.

The intercept ($\beta_0 = 0.172$, $p < .001$) is positive and statistically significant, indicating the expected level of financial reporting quality when all explanatory variables are held constant. Board independence (BIND) has a positive and statistically significant impact on FRQ ($\beta = 0.214$, $p < .001$). Thus, exhibits a positive and statistically significant relationship with financial reporting quality. This suggests that firms with a higher proportion of independent directors are more likely to produce high-quality financial reports, likely due to improved monitoring and reduced managerial opportunism. This result supports Hypothesis 1, indicating that firms with a higher proportion of independent non-executive directors tend to report financial information of higher quality. This finding aligns with recent

evidence from Nigerian deposit money banks and non-financial firms which also report that independent directors reduce earnings manipulation and improve reporting credibility (Igwe et al., 2025).

In addition, the positive effect of board independence echoes the theoretical expectations of agency theory that says independent board members enhance monitoring, constrain opportunistic behaviour by management, and foster more transparent reporting (Fama & Jensen, 1983).

Audit committee quality (ACQ) is also positively and significantly associated with FRQ ($\beta=0.186, p<.001$ $\beta = 0.186, p < .001$ $\beta=0.186, p<.001$). This supports Hypothesis 2 and shows that stronger audit committee characteristics including independence, expertise, and active engagement are linked to higher reporting quality. That is, effective audit committees enhance oversight of the financial reporting process and strengthen reporting credibility. The result is consistent with recent findings that audit committee independence and meeting frequency improve earnings quality and reduce earnings manipulation (Sadiq et al., 2025; Omoyi Obeitoh et al., 2024). Thus, the underlying mechanism is that a competent audit committee enhances internal control monitoring and reduces information asymmetry by ensuring the integrity of financial reports.

Ownership disclosure (OWNND) shows a positive and significant association with FRQ ($\beta=0.159, p=.001$ $\beta = 0.159, p = .001$ $\beta=0.159, p=.001$), supporting Hypothesis 3. Firms that provide greater transparency about ownership structures tend to issue higher-quality financial reports. This implies that, greater transparency in ownership structures improves accountability and reduces information asymmetry between management and stakeholders. The result is consistent with existing studies showing that transparent ownership disclosure reduces agency costs and fortifies investor confidence by exposing potential conflicts and reducing information asymmetry. Empirical work in Nigerian contexts has similarly affirmed the importance of ownership transparency in improving the quality of reported financial information (Baatwah et al., 2020; Uwalomwa et al., 2023).

Enhanced disclosure rules (EDR) exhibit a positive but marginally significant relationship with FRQ ($\beta=0.081, p=.087$ $\beta = 0.081, p = .087$ $\beta=0.081, p=.087$). Although the coefficient is positive, its statistical significance is weaker than that observed for other governance variables. This partially supports Hypothesis 4 and may reflect uneven compliance with disclosure requirements among Nigerian firms. This suggests that while stronger disclosure regulations may improve reporting quality, their impact is not sufficiently strong in the sample to be

statistically confirmed, possibly due to inconsistent compliance or weak enforcement mechanisms.

Prior studies note that stronger regulatory frameworks improve disclosure quality, but enforcement gaps often reduce their effectiveness (Talabi et al., 2025). This finding suggests that while enhanced disclosure rules have potential to improve reporting quality, their impact may be limited by practical compliance challenges in the Nigerian institutional setting. Among the control variables, firm size shows a positive and significant relationship with financial reporting quality ($\beta = 0.092$, $p = .002$), indicating that larger firms tend to have better reporting systems and more resources to ensure compliance with reporting standards. Leverage is negatively and significantly related to financial reporting quality ($\beta = -0.073$, $p = .019$), suggesting that highly leveraged firms may engage in earnings management to meet debt obligations. Profitability demonstrates a positive and significant effect on financial reporting quality ($\beta = 0.107$, $p < .001$), implying that more profitable firms have fewer incentives to manipulate financial information.

4.4 Discussion of Findings

The empirical results from this study confirm that internal corporate governance mechanisms such as board independence, audit committee quality, and ownership disclosure significantly enhance financial reporting quality among listed firms in Nigeria. These findings align with recent Nigerian empirical research indicating the importance of governance structures in mitigating earnings manipulation and improving reporting credibility. .

These findings align with agency theory, which suggests that effective governance mechanisms reduce opportunistic behavior by management and enhance reporting quality. The results support prior empirical evidence from both developed and emerging markets, reinforcing the importance of robust governance structures in improving transparency and accountability.

The relatively weaker impact of enhanced disclosure rules suggests that regulatory reform alone is insufficient without effective enforcement and governance culture that prioritizes transparency. This resonates with comparative evidence noting that governance attributes influence reporting outcomes differently across contexts, depending on enforcement strength and firm practices.

In sum, the results highlight the effectiveness of internal governance mechanisms in strengthening financial reporting quality in Nigeria. They also underscore the need for policymakers and regulators to focus not only on formal disclosure requirements but also on their effective implementation.

5.0 Conclusion and Recommendations

5.1 Conclusion

This study aimed to investigate the impact of corporate governance on the quality of financial reporting in Nigeria. The study provides compelling evidence that corporate governance practices play a pivotal role in enhancing financial reporting quality in Nigeria. The empirical findings demonstrate that board independence, audit committee quality, and ownership disclosure are significant drivers of high-quality financial reporting, while enhanced disclosure rules, though positive, exhibit a weaker influence. These results confirm the centrality of internal governance mechanisms in reducing managerial opportunism, promoting transparency, and strengthening investor confidence, consistent with agency and stakeholder theory. The discussion further underscores that effective governance is not solely a matter of formal compliance but depends on the quality, expertise, and active engagement of governance actors within firms. Based on these insights, the study recommends that policymakers, regulators, and corporate boards focus on strengthening board independence, enhancing audit committee competence, ensuring transparent ownership disclosure, and enforcing disclosure requirements effectively. Collectively, these measures can foster a culture of accountability, reduce information asymmetry, and improve the credibility of financial reporting. Ultimately, by integrating robust internal governance structures with strong regulatory oversight, Nigerian firms can enhance financial reporting quality, build stakeholder trust, and support sustainable growth in the capital markets.

This study provides empirical evidence that corporate governance practices significantly improve financial reporting quality in Nigeria. Strong governance mechanisms enhance transparency, reduce information asymmetry, and support sustainable development objectives. This is consistent with agency and stakeholder theories, internal governance mechanisms particularly board independence, audit committee quality, and ownership disclosure are more effective in improving reporting credibility than regulatory disclosure requirements alone. These findings not only validate prior empirical evidence but also extend the literature by offering recent, Nigeria-specific insights into the governance–reporting quality nexus.

5.2 Recommendations

Based on the findings and conclusion of this study, it is evident that corporate governance mechanisms significantly influence the quality of financial reporting in Nigeria. Consequently, policymakers and regulatory authorities should prioritize initiatives that strengthen board independence. Stricter criteria for the appointment of independent non-executive directors, including mandatory financial literacy and professional expertise, can ensure that boards are equipped to provide effective oversight. Additionally, regulators may consider introducing

periodic board evaluations and performance assessments to monitor the effectiveness of independent directors in fulfilling their oversight roles. Such measures are likely to enhance the capacity of boards to mitigate managerial opportunism and promote transparency in financial reporting.

Audit committee quality also emerged as a critical determinant of reporting quality. Firms should therefore invest in the recruitment and continuous training of audit committee members to enhance their technical expertise and governance capacity. Regulators could mandate minimum standards for audit committee composition, such as a required proportion of members with professional accounting or financial expertise, and enforce regular reporting on audit committee activities, including meeting frequency and oversight responsibilities. By strengthening audit committees, firms can improve monitoring over internal controls, financial reporting, and external audit processes, thereby reducing the incidence of earnings management.

Ownership disclosure was found to positively influence financial reporting quality, suggesting that greater transparency in ownership structures is essential. Companies should adopt comprehensive disclosure practices that clearly identify major shareholders, related-party transactions, and the extent of ownership concentration. Regulators should enforce stricter penalties for non-compliance and provide clear guidelines for consistent reporting of ownership information. Transparent ownership disclosure will not only reduce information asymmetry but also increase investor confidence and promote fairness in capital markets, particularly in emerging economies like Nigeria where ownership is often concentrated.

Although enhanced disclosure rules showed a weaker effect on reporting quality, their potential should not be underestimated. Policymakers and regulators should focus on enforcement and monitoring mechanisms to ensure that mandatory disclosure requirements are adhered to. This could include periodic compliance audits, public disclosure of non-compliant firms, and integration of disclosure quality into firm ratings by regulatory authorities. Firms should also be encouraged to adopt voluntary disclosures beyond statutory requirements, such as integrated reporting and environmental, social, and governance (ESG) reporting, which have been shown to improve transparency and stakeholder confidence.

Finally, there is a need for a holistic approach that integrates both internal governance mechanisms and regulatory frameworks. While internal structures like independent boards and audit committees are more effective in enhancing reporting quality, they must operate in an environment of strong legal enforcement and a robust regulatory culture. Training programs for board members, audit committee members, and top management on corporate governance

best practices should be institutionalized. Additionally, collaborative initiatives between regulators, professional accounting bodies, and investor associations can foster a culture of accountability and transparency. By implementing these recommendations, Nigerian firms can significantly improve the quality of financial reporting, reduce agency conflicts, and strengthen investor confidence, contributing to overall market stability and sustainable economic growth.

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INFORMAL SAVINGS INSTITUTIONS AS CONDUITS FOR FORMAL
RETIREMENT SCHEMES: THE POTENTIAL OF AJO COLLECTORS IN
NIGERIA'S MICRO PENSION PLAN

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ABSTRACT

The paper examines how Nigeria's Micro Pension Plan (MPP) can effectively penetrate the informal sector by leveraging traditional ajo collectors as trusted intermediaries between informal workers and formal pension providers. Despite policy efforts to extend contributory pensions to self-employed and informal-sector workers, uptake of the MPP remains low, constrained by limited awareness, low financial literacy, distrust of formal institutions, and operational challenges in collecting small, irregular contributions from geographically dispersed populations. At the same time, informal thrift and rotating savings systems such as ajo/esusu/adashe remain deeply embedded in Nigerian communities, with ajo collectors performing functions analogous to deposit mobilization, record-keeping and monitoring through repeated personal contact and social sanctions. Drawing on adoption theories (TPB, TAM, UTAUT) and trust/social capital perspectives, the paper develops a conceptual model in which social influence drive adoption of micro pensions, while ajo collectors operate as informal-formal bridges that enhance awareness, reduce transaction frictions and strengthen interpersonal and institutional trust. The model proposes that engaging ajo collectors as awareness agents, KYC and registration facilitators, contribution collection/remittance agents and customer-service relays will positively influence micro-pension intention and uptake, and may also moderate the effects of perceived benefit and trust on adoption among informal-sector workers. The paper concludes that carefully regulated and digitized integration of ajo collectors into MPP delivery supported by clear consumer-protection rules, agent oversight and fintech platforms offers a promising pathway to "attract the informal sector informally" and expand retirement security in Nigeria's predominantly informal economy, while providing a testable framework for future empirical research

Keywords: Micro Pension Adoption, Informal Sector Finance, "Ajo Collectors"

1. Introduction

Nigeria's informal sector accounts for the majority of employment and a substantial share of GDP, yet remains largely excluded from formal pension arrangements, exposing millions of workers to old-age poverty and income insecurity (PwC, 2019). In response, the Pension Reform Act 2014 introduced the Micro Pension Plan (MPP) to extend contributory pension coverage to self-employed persons and workers in organizations with fewer than three employees, but actual uptake has been slow despite the scheme's potential socio-economic benefits (PenCom, 2018).

One critical yet under-explored question is how to attract informal sector workers using channels and social structures they already trust, rather than relying solely on formal financial institutions that many perceive as distant or unreliable. In Nigeria and across West Africa, traditional thrift and rotating savings systems locally known as *ajo*, *esusu*, *adashe* or *asusu* play a central role in everyday financial management for market traders, artisans and micro-entrepreneurs, typically organized around itinerant “*ajo* collectors” who mobilise small, regular deposits and enforce repayment through social ties rather than contracts (VOA, 2024). This conceptual paper examines how Nigeria's Micro Pension Plan can leverage *ajo* collectors as informal distribution and trust channels to penetrate the informal sector more effectively. Specifically, the paper:

- Situates the MPP within the broader landscape of pension reform and financial inclusion.
- Explores the features and functions of *ajo* systems and their collectors.
- Develops a conceptual framework linking *ajo* collectors, trust, financial literacy, social influence and MPP uptake.
- Derives policy and managerial implications for regulators, pension fund administrators (PFAs) and fintech actors.

The paper is conceptual and synthesizes existing scholarship on micro pensions, informal finance and adoption of financial products to propose a model for future empirical testing (Jaju, 2024).

2. Context: Micro Pension Plan and Informal Sector in Nigeria

2.1 Nigeria's pension reforms and the Micro Pension Plan

Nigeria's pension system transitioned in 2004 from largely unfunded defined-benefit schemes to a funded, contributory pension scheme (CPS) governed by the Pension Reform Act 2004 and later revised in 2014, which created PenCom as the sector regulator and established Retirement Savings Accounts (RSAs) managed by licensed PFAs and Pension Fund Custodians

(PFCs) (PenCom, 2014). While the CPS significantly improved retirement funding for formal-sector workers, it initially excluded the self-employed and informal-sector workers, who constitute roughly 80% of the labour force.

To address this coverage gap, Section 2(3) of the PRA 2014 mandated the extension of the CPS to self-employed persons and informal workers through a Micro Pension Plan, formally launched in 2019 and supported by detailed guidelines and operational frameworks (PenCom, 2018; Crusader Pensions, 2024). The MPP is a voluntary, defined-contribution scheme, characterized by flexible and low minimum contributions, separated contingent and retirement savings portions, and simplified registration requirements, designed to suit irregular income patterns and cash-based transactions typical of informal work (PwC, 2019; Norren Pensions, 2025).

2.2 Profile and dynamics of Nigeria's informal sector

The informal sector in Nigeria comprises own-account workers, micro-enterprise operators and unpaid family workers engaged in trade, agriculture, transport, construction and services, operating largely outside formal registration, taxation and social protection frameworks (Shaping Nigeria's Informal Economy, 2024). Access to financial services surveys show that only a minority of Nigerian adults hold any pension account, and awareness of micro pensions among adults without pensions remains extremely low, with 94% reportedly unaware as of the 2020 insights.

Informal-sector workers often rely on family support, personal savings and continuation of economic activity at old age as their primary retirement strategy, with limited use of formal retirement products due to low and irregular incomes, information gaps, cultural preferences and distrust of state institutions (Micro-Pension Inclusion and Productivity, 2025). These conditions make the informal sector both a high-priority target and a challenging market for micro pensions, requiring innovative approaches that align with local financial practices and trust structures.

2.3 Challenges of micro pension uptake

Empirical assessments of the Micro Pension Plan in Nigeria highlight numerous obstacles, including financial illiteracy, poor saving culture, low sensitization and awareness, lack of confidence in government policies, and operational issues around contribution collection, benefit payments and agent incentives (IjMSSSR, 2021). Studies on micro pension and financial inclusion in Nigeria further show that awareness and financial literacy are positively associated with participation, but remain limited among informal workers, especially women, rural residents and low-income groups (Micro Pension Plan and Financial Inclusion, 2024).

Fintech-oriented analyses point to additional structural challenges, such as low digital literacy, inconsistent network coverage, and the costs of building digital micro-pension platforms that can process very small, highly frequent transactions profitably (PinBox, 2019). Overall, evidence suggests that product design alone is insufficient; effective penetration of the informal sector requires trust-building, intensive outreach and leveraging existing informal financial networks.

3. Informal Finance, Ajo Collectors and Financial Inclusion

3.1 Ajo, esusu and related thrift systems

Traditional rotating savings and credit associations (ROSCAs) and accumulating savings and credit associations (ASCAs) have long provided essential financial services to households and micro-businesses in Nigeria and West Africa, offering mechanisms for saving, credit and risk-sharing outside formal banks (LibertyPay, 2025). In southern Nigeria these are often called ajo or esusu, while in parts of the north terms such as adashe or asusu are used, reflecting deep cultural roots in local communities (SavingsBox, 2025).

A typical ajo arrangement involves a group of individuals making regular contributions (daily, weekly or monthly) to a central collector, who either distributes lump sums to members in turn or holds savings for withdrawal at specified times (ASCAs), earning a commission for the service (VOA, 2024). These systems operate primarily on trust, social sanctions and reputation rather than legal contracts, and are valued for their flexibility, proximity and simplicity, especially in cash-based, low-literacy environments.

3.2 Role and characteristics of ajo collectors

Ajo collectors are itinerant agents who visit markets, workshops, homes and small businesses to collect contributions, maintain records and disburse funds, often on a daily basis. Several characteristics make these collectors central actors in informal finance:

- **Proximity and accessibility:** Collectors physically visit clients at stalls or homes, reducing transaction costs and overcoming distance to formal financial institutions (VOA, 2024).
- **Social embeddedness:** Collectors are often long-standing community members whose reputation and relationships serve as collateral; default or fraud can result in severe social penalties, thus enforcing discipline (AjoApp, 2025).
- **Flexibility and customisation:** Collection schedules, contribution amounts and payout terms are negotiated informally, enabling adaptation to irregular incomes and shocks (SavingsBox, 2025).

At the same time, cases of fraudulent or absconding collectors demonstrate that trust is not automatic, and the absence of formal protection can expose savers to losses, highlighting the need for appropriate regulation and risk-mitigation when integrating ajo mechanisms into formal schemes.

3.3 Ajo collectors as agents of financial inclusion

Recent developments show a growing interest in digitising ajo practices to enhance transparency, record-keeping and integration with the formal financial sector. Fintech initiatives such as LibertyPay's digital ajo cards and AjoMoney's rotating savings platform illustrate how technology can extend the reach of tradition-based systems while linking them to regulated accounts and payment rails (LibertyPay, 2025; & AjoMoney, 2022). These platforms typically equip collectors or group leaders with point-of-sale (POS) terminals or mobile apps, allowing instant recording of contributions and providing customers with digital proof and balance visibility.

Evidence from financial-inclusion studies in Nigeria indicates that many unbanked or under-banked adults are more willing to interact with agents and channels that build on existing community financial practices than to adopt entirely new formal channels. Ajo collectors, who already perform functions analogous to deposit mobilisation and loan appraisal, thus emerge as natural candidates for roles as agent bankers, mobile money agents or, in this paper's focus, micro-pension intermediaries.

4. Theoretical and Conceptual Foundations

4.1 Adoption of financial services in the informal sector

Theories such as the Theory of Planned Behavior (TPB), Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT) have been widely used to explain adoption of financial and digital services, highlighting the role of perceived benefits, perceived risk, trust, social influence and facilitating conditions in shaping intention (Venkatesh et al., 2003, summarised in UTAUT Review, 2025). In micro-pension and retirement-saving contexts, studies consistently show that financial literacy, trust in providers and perceived adequacy of benefits significantly influence willingness to participate (Lusardi & Mitchell, 2011 & Boyetey, 2021).

These models are particularly relevant for informal-sector workers who face high information asymmetry and often perceive financial products as complex and risky. Trust becomes a central mediator, shaping how individuals interpret provider signals, regulatory assurances and social cues, and thereby influencing their intention to adopt instruments like micro pensions (Kim et al., 2022; Makrides et al., 2024).

4.2 Trust, social capital and informal agents

Trust and social capital theories emphasize that repeated interactions, shared norms and community-based reputation systems can substitute for formal enforcement, particularly in low-income, high-risk contexts (Coleman, 1988; Putnam, 1993). In informal finance, trust in intermediaries such as ajo collectors emerges from demonstrated reliability, transparency and reciprocity, and is reinforced by social networks that can sanction misconduct.

Empirical evidence in financial-services adoption underscores that interpersonal trust (trust in agents and frontline staff) and institutional trust (trust in the system and regulators) jointly shape behavioural intentions, with interpersonal trust often acting as the more immediate and salient cue in informal settings (Morgan & Trinh, 2025 & Yan et al., 2021). Thus, using trusted community intermediaries as conduits for formal products can help overcome skepticism and reduce perceived risk.

4.3 Conceptualizing ajo collectors as micro-pension intermediaries

Drawing on adoption and trust theories, ajo collectors can be conceptualized as “informal-formal bridges” who translate micro-pension products into locally understandable terms, facilitate transactions, and provide relational trust that complements formal guarantees. In this conceptualization:

Ajo collectors embody social influence, as their endorsement and example can shape norms within their savings groups. Normative social influence occurs when individuals conform to group expectations to gain acceptance or avoid disapproval (Cialdini & Goldstein, 2004). In Ajo schemes, collectors often hold longstanding relationships with contributors and enjoy strong reputational capital in the community. This reputation creates subtle social pressure that encourages consistent participation

Because contributions are made in public or semi-public settings, group members feel compelled to follow established savings norms largely set and reinforced by the collector. This aligns with the notion that community leaders or trusted intermediaries can shape behavioural expectations in informal financial settings (Karlan et al., 2014).

Thus, the collector’s endorsement of a financial behaviour (e.g., regular contributions, trying a new saving product, or adopting micro-pension schemes) becomes socially persuasive. Members trust the collector’s judgment and follow the behaviour to maintain social cohesion. Informational influence occurs when individuals rely on credible sources for guidance in uncertain situations (Deutsch & Gerard, 1955). Many informal sector workers have limited financial literacy, making Ajo collectors important sources of financial information and practical guidance.

Collectors typically understand contribution cycles, payout structures, and savings discipline better than most members. Their competence positions them as “local financial experts,” which aligns with research showing that individuals often follow advice from trusted, knowledgeable actors in matters involving risk or complexity (Cole, Sampson & Zia, 2011).

Their endorsement of particular savings behaviours such as joining additional schemes or trying new financial products can thus significantly shape members’ attitudes and intentions. Social influence also operates through observational learning, where individuals model behaviours demonstrated by respected figures within their social space (Bandura, 1986). Ajo collectors who demonstrate consistency, transparency, and personal financial discipline inadvertently set behavioural standards. As collectors’ model positive saving habits, members internalize these behaviours, creating what Ajzen’s Theory of Planned Behaviour refers to as subjective norms beliefs about the expectations of important referent individuals (Ajzen, 1991). When members observe collectors participating in or endorsing certain savings practices, they perceive it as a community-approved norm, increasing their likelihood of conforming.

4.4 Strengthening Group Cohesion and Social Accountability

The role of the collector in maintaining group relationships deepens accountability mechanisms that support savings consistency. Studies have shown that group-based financial schemes work largely because social influence enhances commitment and reduces default (Gugerty, 2007). Ajo collectors foster these dynamics by reinforcing communal expectations, resolving disputes, and encouraging members who fall behind. Through these mechanisms, the collector not only facilitates savings but actively shapes the social environment within which financial decisions are made.

In the Unified Theory of Acceptance and Use of Technology (UTAUT), facilitating conditions refer to the structural and environmental supports that make it easier for individuals to adopt a product or system (Venkatesh et al., 2003). In low-literacy and informal-sector environments, barriers such as documentation requirements, unfamiliar registration processes, and logistical constraints often impede adoption of formal financial services (Demirgüç-Kunt et al., 2018). Ajo collectors reduce these obstacles by acting as intermediaries who guide contributors through registration, explain documentation requirements in simple terms, and coordinate contributions at times and locations convenient to members. This aligns with findings that community-based agents significantly improve access to financial services by reducing transaction costs and logistical hurdles (Dupas & Robinson, 2013). Their presence effectively lowers behavioural, administrative, and logistical barriers, allowing potential contributors to perceive micro-pension enrolment as less complex and more manageable.

Furthermore, informal-sector workers often lack the institutional interaction skills needed for formal pension enrolment. Evidence shows that intermediaries familiar with local norms can serve as “last-mile facilitators” who help clients navigate formal systems more comfortably (Kendall, Machoka & Veniard, 2012). Thus, Ajo collectors function as enabling infrastructure, making the scheme more accessible and enhancing perceived behavioural control.

The conceptual model therefore posits that integrating ajo collectors into MPP delivery channels can increase awareness, improve perceived benefits, strengthen trust and, ultimately, raise intention and actual uptake among informal-sector workers.

4.5 Methodological Approach to Building the Conceptual Model

The development of the conceptual model for this study followed a systematic, theory-driven and literature-grounded methodological approach designed to ensure coherence, conceptual clarity and empirical relevance. First, theoretical foundations were selected based on their established relevance to explaining adoption of financial services, particularly within informal and low-literacy contexts. The Theory of Planned Behavior (TPB), Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT) were prioritized because they consistently highlight key determinants of financial-product adoption—such as perceived benefit, perceived behavioural control, trust, and social influence—which align closely with barriers and enablers documented in micro-pension and informal-finance literature. Trust and social capital theories were incorporated to address contextual realities of the Nigerian informal sector, where interpersonal trust, group norms and informal enforcement mechanisms strongly shape financial behaviour. This theoretical triangulation provided a multi-layered lens capable of capturing both rational-choice and socio-relational determinants of micro-pension uptake.

Second, constructs were identified through a structured literature synthesis focusing on micro-pensions, informal savings systems (ajo/esusu), financial inclusion, agent-based financial services, and behavioural adoption. Three criteria guided construct selection: (i) theoretical relevance within TPB, TAM and UTAUT; (ii) empirical support from prior studies in pension participation, informal finance, or digital-finance adoption; and (iii) contextual applicability to informal-sector realities in Nigeria. Constructs such as financial literacy, perceived benefit, trust, social influence and facilitating conditions were extracted because they repeatedly emerged as significant predictors of adoption across these domains. The construct of ajo collector engagement was added inductively, based on evidence that informal agents play central roles in mobilizing savings, building trust, reducing information asymmetry, and

shaping norms within informal communities. This ensured that the model not only grounded itself in global theoretical frameworks but also accommodated indigenous financial practices. Finally, relationships among constructs were hypothesized using a combination of deductive and inductive reasoning. Deductively, relationships such as the effect of perceived benefit and trust on intention to adopt were derived directly from TAM and UTAUT propositions. Similarly, TPB informed the hypothesized role of social influence in shaping behavioural intention. Inductively, relationships involving ajo collectors were derived from empirical observations within informal-finance literature suggesting that collectors function as trusted intermediaries, information conduits and behavioural influencers. This justified hypothesizing both direct effects of ajo collector engagement (e.g., on awareness, trust and social influence) and moderating effects on key behavioural pathways (e.g., between perceived benefit and intention). Logical reasoning ensured that each path reflected not only theoretical propositions but also real-world dynamics observed in Nigeria's informal sector—such as reliance on familiar agents, distrust of formal institutions and irregular income patterns. This integrated methodological approach ultimately produced a contextually grounded and theoretically robust conceptual model suitable for empirical testing

5. Conceptual Model: Ajo Collectors and Micro Pension Penetration

Informal savings institutions have historically played a significant role in Nigeria's financial landscape, particularly among low-income earners, self-employed individuals, and micro-entrepreneurs who often fall outside the coverage of traditional banking and pension structures. Among these institutions, Ajo collectors local daily or weekly thrift collectors serve as trusted intermediaries who mobilize and manage small-value contributions. Because the Micro Pension Plan (MPP) targets the informal sector, these collectors may serve as effective conduits for enrolment, contribution mobilization, and sustained compliance.

5.1 Operational Definition of Concepts

To strengthen theoretical grounding and aid future empirical studies, the following constructs and operational definitions are proposed.

5.1.1 Informal Savings Institutions (ISI)

Informal savings institutions refer to community-based, non-regulated mechanisms through which individuals voluntarily save using culturally embedded practices such as *Ajo*, *Esusu*, *Adashe*, and *Otataje*. These systems operate outside formal financial regulation but have strong social trust, regular contribution mechanisms, and easy access to savings.

Future surveys can measure ISI through:

- **Frequency of Participation:** number of cycles per year individuals contribute to Ajo/Esusu.
- **Contribution Regularity:** consistency of daily/weekly amounts remitted.
- **Trust in Informal Collectors:** Likert-scale items measuring perceived reliability and transparency.
- **Proximity and Accessibility:** how easily participants can reach or interact with Ajo collectors.

5.1.2. Ajo Collectors (AC)

Ajo collectors are intermediaries who mobilize daily or weekly thrift contributions from informal workers, safeguard funds, settle payouts at the end of savings cycles, and sometimes provide micro-loans. They are socially embedded actors who enjoy high trust and have direct relationships with informal workers.

Potential empirical indicators include:

- **Collector Competence:** perceived efficiency, record-keeping ability, timeliness.
- **Trustworthiness:** perceived honesty, personal reputation, transparency.
- **Network Reach:** number of savers in portfolio; spatial coverage per collector.
- **Digital Readiness:** capacity to use mobile apps or electronic contribution systems for micro pensions.

5.1.3. Micro Pension Plan (MPP) Adoption

Micro Pension Plan adoption refers to the readiness and actions of informal sector workers to register under the Contributory Pension Scheme and make periodic contributions toward retirement savings.

- **Intent to Enroll:** measured through behavioral intention scales.
- **Actual Enrollment:** whether the individual has officially registered.
- **Contribution Consistency:** regularity of micro contributions through MPP channels.
- **Perceived Usefulness:** belief that MPP will ensure future financial security.

5.1.4. Financial Inclusion (FI)

Financial inclusion represents the ease with which individuals access and use affordable financial products and services (savings, insurance, pensions, payment systems). In this context, it reflects how linking Ajo collectors to the pension system can increase participation.

- **Access to Financial Services:** whether savers have bank accounts, mobile wallets, or retirement accounts.
- **Use of Financial Services:** frequency of deposit, withdrawal, transfers, pension contributions.

- **Perceived Barriers:** affordability, documentation requirements, trust issues, literacy.

5.1.5. Trust in Pension System (TPS)

TPS refers to the confidence individuals have in the safety, transparency, and fairness of the micro pension framework. In informal communities, trust is critical because past pension mismanagement in Nigeria shapes current perceptions.

- **Perceived Transparency:** belief that pension funds are well managed.
- **Safety of Funds:** confidence in long-term security of contributions.
- **Institutional Credibility:** perceived reliability of Pension Fund Administrators (PFAs).

5.1.6. Financial Literacy (FL)

Financial literacy is the ability to understand financial concepts such as savings, risk, pension benefits, compound interest, and retirement planning. It influences whether informal workers perceive value in joining MPP.

- **Basic Financial Knowledge:** items testing understanding of interest, inflation.
- **Retirement Literacy:** awareness of pensions, benefit structures, contribution rules.
- **Savings Behavior:** measured through self-reported budgeting, saving habits.

5.1.7. Social Influence (SI)

Social influence captures the extent to which peers, group leaders, Ajo associations, or community norms affect an individual's willingness to adopt the MPP.

- **Peer Encouragement:** perceived pressure or support from friends/colleagues.
- **Community Norms:** cultural affinity toward group-based financial savings.
- **Collector Influence:** persuasive role of Ajo collectors in promoting pension enrolment.

Integrated Conceptual Model (Narrative for Proposed Diagram)

The proposed conceptual model positions **Ajo collectors** as intermediary channels linking informal workers to the formal Micro Pension Plan. In the model:

1. **Informal Savings Institutions (ISI)** → enhance **trust**, **accessibility**, and **habitual saving**, which positively influence MPP adoption.
2. **Ajo Collectors (AC)** function as conduits whose **network reach** and **trustworthiness** increase the likelihood of MPP participation.
3. **Financial Literacy (FL)** moderates the relationship between AC and MPP adoption—higher literacy strengthens the effect.
4. **Trust in Pension System (TPS)** mediates the connection between Ajo collector engagement and MPP adoption—collectors improve trust, which increases adoption.

5. **Social Influence (SI)** strengthens ISI → MPP adoption, as group norms reinforce decision-making.
6. **Financial Inclusion (FI)** acts as a facilitating condition that enables smooth onboarding and contribution flow.

5.2 Simplified Diagram Description

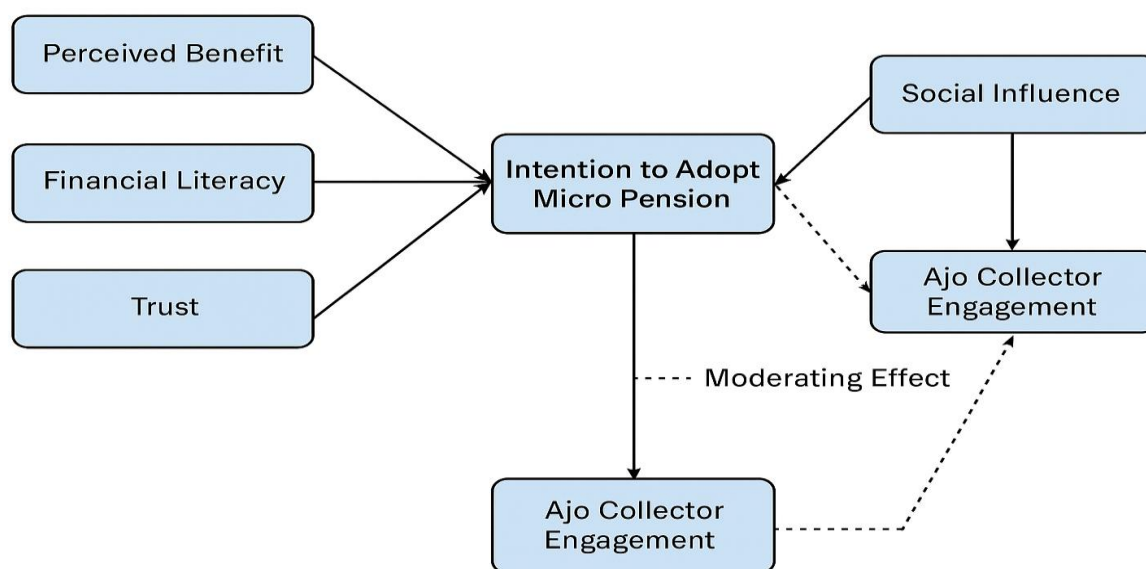


Figure 1: conceptual framework

5.3 Core constructs

The proposed conceptual model centres on micro-pension uptake among informal-sector workers as the dependent construct, conceptualized as intention to enroll and persistently contribute to the MPP. Key antecedent constructs, informed by prior literature and the Nigerian context, include: Confidence in PFAs, PenCom and associated agents to manage funds prudently and honour future claims. Perceptions of approval or encouragement from significant others such as family, peers, community leaders and ajo collectors. Use of ajo collectors as information channels, collection agents, and digital or physical conduits for MPP contributions.

5.4 Proposed relationships

Synthesizing the literature, the model advances several conceptual linkages:

1. Financial literacy positively affects perceived benefit and trust in the MPP, as better-informed individuals are more capable of understanding product features, fees and regulatory safeguards.

2. Perceived benefit and trust each positively influence intention to adopt the MPP, consistent with TAM/UTAUT and pension-adoption studies (Wu, 2023; Yao, 2023).
3. Social influence particularly from respected community figures and ajo collectors positively affects intention to adopt, by lowering social and psychological barriers and normalizing participation (Yan et al., 2021).
4. Ajo collector engagement positively influences awareness, financial literacy and trust, by providing repeated, personalized touchpoints where micro-pension information can be shared in local language using familiar savings routines (LibertyPay, 2025).
5. Ajo collector engagement moderates the relationship between perceived benefit and intention, and between trust and intention, such that these relationships are stronger when ajo collectors are actively involved as intermediaries.

These relationships can be depicted in a conceptual diagram linking financial literacy to perceived benefit and trust; perceived benefit, trust and social influence to intention; and ajo collector engagement both as an antecedent to trust, literacy and social influence and as a moderator of key paths.

5.5 Channels and functions

Operationalizing ajo collectors in the MPP requires specifying functions that align with regulatory frameworks and consumer-protection principles. Conceptually, ajo collectors can perform at least four roles:

- Awareness and education agents: Providing information on MPP features, benefits and processes at existing group meetings or collection rounds.
- Registration and KYC facilitators: Assisting clients to complete simplified KYC, collate necessary documentation and interface with PFAs' digital platforms.
- Contribution collection and remittance agents: Aggregating small, frequent cash contributions and remitting them electronically to MPP RSAs via POS, USSD or mobile apps (LibertyPay, 2025).
- Customer-service relays: Helping clients check balances, understand statements and navigate benefit withdrawal processes, thereby maintaining trust and engagement over time.

5.6 Policy, Regulatory and Practical Implications

Integrating ajo collectors into the MPP raises regulatory issues around licensing, supervision and liability. Conceptually, collectors could be recognized as a category of pension agents or sub-agents under PenCom guidelines and the broader financial-inclusion regulatory

framework, subject to fit-and-proper criteria, training and reporting obligations (PenCom, 2018). Regulatory design must balance leveraging existing trust networks with protecting contributors from fraud, misappropriation and operational errors.

To uphold consumer protection, mechanisms such as digital transaction receipts, direct SMS alerts from PFAs to contributors, and clear delineation of responsibilities between PFAs and ajo agents are crucial. Complaint-handling and dispute-resolution channels should be accessible in local languages and capable of addressing issues involving agents, thereby reinforcing institutional trust and supporting the MPP's long-term credibility.

At the product level, PFAs need to design micro-pension offerings that integrate smoothly with ajo cycles, such as enabling daily micro-contributions aggregated into monthly remittances, and offering small, flexible "contingency" withdrawal options alongside long-term retirement savings (PwC, 2019; Crusader Pensions, 2024). Marketing strategies should emphasize tangible, relatable benefits such as avoiding dependence on children, coping with health shocks, and maintaining business continuity communicated through testimonials and narratives that resonate with informal-sector realities (Relevance of Marketing, 2024).

Collaborative campaigns involving PFAs, PenCom, and fintech firms can harness mass media, social media and community channels, but conceptual arguments suggest that face-to-face communication via trusted agents such as ajo collectors will remain decisive for deep penetration among low-literacy and rural populations (Micro-Pension Inclusion and Productivity, 2025).

Fintech plays a pivotal enabling role by providing platforms that link traditional ajo practices with regulated pension accounts. Digital ajo solutions, card-based systems and mobile apps can provide real-time transaction records, automate remittances to PFAs, and deliver user-friendly dashboards in local languages (LibertyPay, 2025). Integrating these solutions with national ID systems and mobile-money platforms can simplify KYC processes and reduce operational costs, making low-value micro-pension contributions commercially viable.

Conceptually, a multi-layer architecture emerges: at the base, informal groups and ajo collectors handle social organization; in the middle tier, fintech platforms digitize their operations; at the top, PFAs and PenCom provide formal pension management and regulatory oversight. This layered structure can combine the strengths of community trust and formal safeguards to promote sustainable micro-pension adoption in Nigeria's informal sector.

This conceptual paper argues that Nigeria's Micro Pension Plan, while structurally sound, requires deeper integration with existing informal financial practices to achieve meaningful coverage among informal-sector workers. Ajo collectors, as trusted community-based financial

agents, are well positioned to act as awareness creators, registration facilitators, contribution collectors and service relays for micro pensions, especially when supported by appropriate regulation, consumer-protection measures and digital infrastructure (LibertyPay, 2025). Conceptually integrating ajo collectors into an adoption framework that highlights financial literacy, perceived benefit, trust and social influence provides a basis for designing and evaluating interventions that seek to attract the informal sector informally.

Future research can operationalize the proposed constructs and test the model empirically using survey data from informal-sector workers, possibly employing structural equation modelling to quantify the effects of ajo collector engagement on micro-pension intention and uptake. Comparative studies across Nigerian regions and across different forms of informal savings groups can also clarify how cultural and institutional variations shape the effectiveness of ajo-based micro-pension strategies.

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ENTREPRENEURIAL PASSION AND SMES PERFORMANCE IN NIGERIA:

ENTREPRENEURIAL AGILITY AS A MODERATOR

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Abstract

Small and medium-sized enterprises (SMEs) in Nigeria face numerous challenges such as intense competition, limited access to finance, low morale and rapidly changing market conditions, which have hindered their performance and sustainability. Anchored on the Dynamic Capabilities Theory, this study examined the effect of entrepreneurial passion on SMEs performance in Abuja, Nigeria, with entrepreneurial agility serving as a moderating variable. The population comprised 17,321 registered SMEs in Abuja, from which a sample size of 390 was determined using the Taro Yamane formula and increased by 10% to 430 to account for potential non-responses. A total of 386 (89.76%) valid responses were analysed using data collected through structured questionnaires administered physically and online across the six Area Councils of Federal Capital Territory, Abuja. Preliminary diagnostic tests confirmed data appropriateness through outlier, normality, multicollinearity and non-response bias and common method bias assessments. The study employed survey and cross-sectional designs. Findings revealed that entrepreneurial passion and entrepreneurial agility both have positive and significant effects on SMEs performance. Furthermore, entrepreneurial agility significantly moderated the relationship between entrepreneurial passion and SMEs performance, indicating that SMEs with highly agile entrepreneurs tend to translate their passion into superior business outcomes. The study recommends that SME owners/managers should actively develop and strengthen entrepreneurial agility through continuous learning, strategic flexibility, and adaptability training programmes. By cultivating agility, entrepreneurs can better leverage their passion to identify opportunities, respond effectively to environmental changes, and enhance overall business performance in Nigeria's dynamic and competitive market environment. The study underscores the importance of fostering agility-oriented entrepreneurial behaviour to enhance SMEs competitiveness and adaptability in dynamic environments.

Keywords: Entrepreneurial passion, Entrepreneurial agility, SMEs performance, Dynamic Capabilities Theory.

INTRODUCTION

Entrepreneurship plays a vital role in the economic transformation of developing nations like Nigeria by promoting innovation, employment creation, and wealth generation (Ojeleye et al., 2023). However, despite the recognized importance of small and medium-sized enterprises (SMEs) as the backbone of Nigeria's economy, many still struggle to sustain performance in an increasingly volatile business environment. The dynamic and competitive market conditions in Nigeria require entrepreneurs who are passionate, proactive, and agile in their approach to business management (Briggs, et al., 2025). Entrepreneurial passion, described as the intense positive emotion and dedication entrepreneurs display toward their ventures, has been identified as a significant driver of innovation, persistence, and business success (Gayathri & Thriveni, 2023). Nonetheless, many Nigerian SMEs experience stagnation and early failure despite their owners' enthusiasm, suggesting that other mediating or moderating factors may influence how entrepreneurial passion translates into performance.

The Nigerian SME sector is characterized by high competition, limited access to financing, infrastructural deficiencies, and fluctuating government policies, all of which require entrepreneurs to be flexible and adaptive (Odio et al., 2021). Within this challenging environment, entrepreneurial agility the capability to sense opportunities, make rapid decisions, and reconfigure resources has emerged as a crucial determinant of firm survival and performance (Zulganef et al., 2023). Agility enables entrepreneurs to adjust swiftly to market shifts and technological changes, turning challenges into growth opportunities (Osagie et al., 2025). However, despite its importance, limited research has been conducted in the Nigerian context to understand how agility interacts with entrepreneurial passion to drive performance outcomes. This study, therefore, investigates whether entrepreneurial agility moderates the relationship between entrepreneurial passion and SME performance, offering new insights into how Nigerian entrepreneurs can remain resilient in an unpredictable economy.

Globally, studies have established that entrepreneurial passion positively influences firm performance through enhanced creativity, perseverance, and goal commitment (Gayathri & Thriveni, 2023; Adomako & Ahsan, 2022; Mangifera, Isa, & Abidin, 2025). Passionate entrepreneurs are more likely to identify market opportunities, inspire employees, and pursue long-term goals despite obstacles (Mangifera et al., 2025). However, the strength of this relationship may vary depending on contextual factors such as the entrepreneur's ability to adapt, learn, and make swift strategic decisions. In volatile economies like Nigeria, passion alone may not guarantee success unless entrepreneurs possess agility to convert their enthusiasm into practical, performance-oriented actions. This underscores the importance of

exploring agility not only as a performance driver but also as a moderating variable that strengthens the effect of passion on business outcomes.

In Nigeria, SMEs contribute significantly to gross domestic product (GDP), employment, and poverty reduction. Yet, their mortality rate remains high, with many failing within the first five years of operation (Tagha, 2024). These failures are often attributed to poor managerial capabilities, lack of strategic flexibility, and inability to respond to environmental uncertainties. While government initiatives such as the GEEP and the Central Bank of Nigeria's intervention funds aim to support the sector, success ultimately depends on the individual entrepreneur's mindset and adaptability. Entrepreneurial agility, therefore, becomes a strategic competency that allows entrepreneurs to pivot, innovate, and sustain performance under pressure. Understanding how agility moderates the link between entrepreneurial passion and firm outcomes could provide valuable insights for policymakers and practitioners seeking to strengthen SME resilience.

Consequently, this study focuses on SMEs in Abuja, Nigeria's Federal Capital Territory, which represents a microcosm of the national entrepreneurial landscape due to its diverse population and rapid economic growth. Abuja hosts entrepreneurs from various regions and sectors, providing a representative sample for examining behavioural and strategic factors influencing business success. The study employs the Dynamic Capabilities Theory as its theoretical foundation, emphasizing the need for continuous adaptation and resource reconfiguration to maintain competitive advantage. By empirically analysing the moderating role of entrepreneurial agility in the relationship between entrepreneurial passion and SMEs performance, this research contributes to bridging theoretical and contextual gaps in entrepreneurship literature. Ultimately, the findings are expected to guide SME owners, policymakers, and support institutions in fostering passion-driven yet agile entrepreneurship models that enhance sustainable performance across Nigeria.

REVIEW OF RELATED LITERATURE

This section reviews related literature on SMEs performance, entrepreneurial passion, entrepreneurial agility, empirical review and theoretical framework.

Concept of SMEs Performance

SME performance refers to the extent to which small and medium-sized enterprises achieve their strategic, financial, and operational goals, encompassing both quantitative and qualitative outcomes (Wu, 2024). It represents the actual results of a firm compared to its intended goals and objectives, reflecting efficiency, effectiveness, and adaptability in the business environment (Ofori-Amanfo et al., 2022). To Mendy (2021), SME performance as a

multidimensional construct that includes profitability, growth, customer satisfaction, innovation, and market competitiveness (Okeke 2024). It also involves the firm's ability to utilize resources optimally to achieve sustainable outcomes in a dynamic economy (Wu et al., 2022). Tehseen et al. (2023), noted that SME performance should be assessed through both objective indicators such as sales and profits and subjective indicators like perceived success and reputation. Molete et al. (2025) add that SME performance reflects how effectively enterprises convert strategic intent into measurable achievements, while Tolossa et al. (2025), emphasizes that the concept extends beyond profit to include longevity, stakeholder satisfaction, and value creation. Collectively, these definitions portray SME performance as the efficiency and effectiveness with which enterprises mobilize resources, implement strategies, and achieve desired business outcomes in competitive environments. This study defines it as the ability of a firm to be optimally utilize resources to meet strategic goals effectively and efficiently.

Concept of Entrepreneurial Passion

Entrepreneurial passion is described as an entrepreneur's intense, consciously accessible positive affective state experienced when engaging in entrepreneurial activities that are deeply meaningful and central to the individual's identity (Nson & Abimaje, 2024). It has also been defined as a strong inclination toward self-defining entrepreneurial role activities that one loves, devotes time and energy to, considers significant, and commits oneself wholeheartedly (Gayathri & Thriveni, 2023). Abu et al. (2023) viewed it as a distinctive, affect-laden motivational source that fuels thoughts, intentions and behaviours related to venture founding, inventing, or developing. It has been framed as a series of complex mental, physiological and affective reactions triggered and sustained by enthusiasm toward an entrepreneurial domain (Okih & Ogidi, 2022). It is also characterized as a conscious, accessible emotion toward entrepreneurship that pushes individuals to act, persist, scan for opportunities and innovate (Mangifera, Isa, & Abidin, 2025). It is an intense positive feeling that is consciously accessible, experienced because of involvement in the entrepreneurial activities, associated with meaningful roles, noticeable in the entrepreneur's identity, drives the daily entrepreneurial efforts, and persistent in overcoming adversities (Maina, Lawrence, & Kyaloteresia, 2023). Additionally, entrepreneurial passion is defined as a multidimensional construct comprised of passions for inventing new products or services, for founding new ventures and for developing existing ones all anchored in identity-related meaning (Adomako & Ahsan, 2022). Finally, it is conceptualized in this study as the "emotional energy, drive and spirit" demonstrated by entrepreneurs that sustains their commitment and perseverance in dynamic and uncertain

environments. In this study, entrepreneurial passion refers to the strong positive emotions and enthusiasm that entrepreneurs experience toward activities related to starting, developing, and growing a business.

Concept of Entrepreneurial Agility

Entrepreneurial agility has been described in the recent literature in diverse but complementary ways. For example, Osagie et al. (2025), defined entrepreneurial agility as managerial cognitive abilities to anticipate, visualize, and exploit entrepreneurial opportunities, emphasizing creative skills necessary for opportunity- and advantage-seeking behaviours. Likewise, Gerald, Obianuju and Chukwunonso (2020), conceptualised it as an individual capability to anticipate, visualise, and exploit unforeseen entrepreneurial challenges and opportunities. It is a dynamic capability enabling proactive sensing of opportunities and rapid response to external changes (Haylemariam, Oduro & Tegegne, 2024). Entrepreneurial agility is a dynamic ability that helps entrepreneurs see opportunities and adjust business models easily to adapt to business-environment dynamics, thereby enhancing survival under challenging conditions (Khan & Rehman, 2023). It is the cognitive management capability to predict, visualize, and utilise entrepreneurial opportunities, referencing opportunity foresight, systemic insight and an entrepreneurial mindset (Rika et al., 2025). Collectively these definitions underscore entrepreneurial agility as a cognitive-behavioural dynamic capability rooted in opportunity sensing, rapid decision-making, resource reconfiguration, and adaptive action that enables entrepreneurs and their firms to thrive in uncertain and rapidly changing environments. In this study, entrepreneurial agility refers to the ability of an entrepreneur or a firm to quickly sense, adapt to, and respond to changes and new opportunities in the business environment.

REVIEW OF EMPIRICAL STUDIES

This section reviewed empirical studies that provided a linkage between entrepreneurial passion and SMEs performance, entrepreneurial agility and SMEs performance. The capabilities of entrepreneurial agility as a moderator of discrete organisational outcomes were also assessed and synthesized in the sub-headings below

Entrepreneurial Passion and SMEs Performance

Plethora of empirical studies have consistently demonstrated that entrepreneurial passion exerts a positive and significant influence on SME and MSME performance, albeit with some nuanced outcomes depending on the form of passion expressed. Adomako and Ahsan (2022), showed among SMEs in Ghana that identity-based entrepreneurial passions for inventing, developing, and founding significantly enhanced firm performance, particularly when supported by adequate and flexible resources. Similarly, Gayathri and Thriveni (2023),

reported that entrepreneurial passion among MSMEs in India fostered risk-taking, innovativeness, perseverance, and stronger networking, all of which translated into improved business performance. Evidence from Nigeria further reinforces this relationship, Kusa and Danladi, (2024); Nson and Abimaje (2024) and Abu et al. (2023), confirmed that entrepreneurial passion significantly predicts entrepreneurial success among SMEs, with professionalism strengthening this linkage. Complementing these findings, Mangifera et al. (2025), established that entrepreneurial passion significantly improved performance among food and manufacturing MSMEs in Indonesia. However, Okih and Ogidi (2022), provided a more differentiated perspective, revealing that while harmonious passion showed no significant effect on business sustainability, obsessive passion exerted a significant but negative influence, suggesting that excessive or maladaptive passion may be detrimental. Collectively, these studies affirm entrepreneurial passion as a critical intangible resource for SME performance. Based on these synthesized empirical studies, the study hypothesized that:

H1a: Entrepreneurial passion does not have significant effect on SMEs performance in Nigeria.

Entrepreneurial Agility and SMEs Performance

A growing body of empirical studies has provided consistent evidence that entrepreneurial agility exerts a positive and significant effect on firm and SME performance. Zulganef, Pratminingsih and Rianawati (2023), demonstrated among SMEs in Bandung, West Java, that entrepreneurial agility significantly enhanced firm performance by improving responsiveness to market changes and competitive pressures. Similarly, Haylemariam, Oduro and Tegegne (2024), found that entrepreneurial agility positively influenced organizational performance among Italian IT firms, underscoring its relevance in technology-driven and dynamic environments. Extending this evidence, Khan and Rehman (2023), revealed that entrepreneurial agility plays a critical role in creating sustainable business performance in Pakistani IT enterprises, operating through business model innovation and being strengthened under conditions of environmental dynamism. Complementary evidence from Nigeria by Gerald, Obianuju and Chukwunonso (2020), showed that strategic foresight a closely related forward-looking capability significantly improved the competitive advantage of SMEs, reinforcing the performance value of anticipatory and adaptive entrepreneurial behaviors. Collectively, these studies affirm entrepreneurial agility as a vital dynamic capability that consistently enhances performance, competitiveness, and sustainability across SMEs and technology-oriented firms operating in volatile business environments. On the basis of the synthesized empirical studies, the study hypothesized that:

H1b: Entrepreneurial agility does not have significant effect on SMEs performance in Nigeria.

Entrepreneurial Agility as a Moderator

A growing stream of empirical studies has demonstrated that entrepreneurial agility plays a crucial moderating role in strengthening key entrepreneurial and strategic relationships. Evidence from Nigeria by Osagie et al. (2025), showed that entrepreneurial agility enhances the effect of e-business model innovation on competitive advantage, indicating that agile firms are better positioned to translate innovative digital models into superior market outcomes. Similarly, Karimi and Walter (2021), found in the U.S. newspaper industry that entrepreneurial agility intensifies the relationship between digital entrepreneurship and value creation, enabling firms to respond more effectively to digital disruption. Complementing these findings, Aswan (2023), revealed that strategic agility strengthens the linkage between entrepreneurial orientation and competitive advantage among SMEs in Indonesia, underscoring the importance of adaptive and flexible capabilities in turbulent environments. Collectively, these studies affirm entrepreneurial agility as a critical boundary condition that amplifies the performance and competitive benefits of entrepreneurial initiatives across different industries and national contexts. Based on these studies, the study hypothesized that:

H2: Entrepreneurial agility does not moderate the relationship between entrepreneurial passion and SMEs performance in Nigeria

Dynamic Capabilities Theory

The Dynamic Capabilities Theory, developed by Teece, Pisano, and Shuen (1997), explains how firms build, integrate, and reconfigure internal and external competencies to address rapidly changing environments. The theory posits that organizations must continuously adapt their resources and capabilities to sustain a competitive advantage in dynamic markets. Its fundamental principles rest on three core capacities: sensing, seizing, and reconfiguring opportunities (Buzzao & Rizzi, 2021). Sensing refers to the ability to identify and interpret environmental changes and opportunities, seizing involves mobilizing resources to capture value from these opportunities, and reconfiguring entails transforming organizational structures and processes to remain competitive. Thus, dynamic capabilities extend beyond possessing valuable resources they emphasize the ability to renew and reorient these resources to meet evolving market demands. The theory argued that firms that effectively develop and deploy dynamic capabilities are more innovative, resilient, and capable of sustaining long-term growth in volatile environments (Mele et al., 2024).

In relation to this study on entrepreneurial passion, agility, and SMEs performance in Nigeria, the Dynamic Capabilities Theory provides a strong conceptual foundation. Entrepreneurial passion aligns with the sensing capability, as passionate entrepreneurs are better attuned to new

opportunities and environmental shifts. Entrepreneurial agility reflects the seizing and reconfiguring dimensions, enabling entrepreneurs to act quickly and adapt their strategies, structures, and processes in response to changing business conditions. Within Nigeria's dynamic and competitive SME environment, the ability to continuously adapt, innovate, and respond to uncertainty is crucial for survival and growth. Therefore, this study situates entrepreneurial passion and agility as essential dynamic capabilities that collectively enhance SMEs' performance by fostering responsiveness, adaptability, and sustained competitiveness in an ever-changing market landscape.

METHODOLOGY

The study adopted a quantitative research approach to examine the effect of entrepreneurial passion on SMEs performance in Nigeria, with entrepreneurial agility serving as a moderating variable. The choice of a quantitative method was informed by the need to statistically test the hypothesized relationships among variables and ensure objectivity in data interpretation. The study employed both survey and cross-sectional research designs, which are appropriate for collecting data from a large number of respondents at a single point in time to establish relationships between constructs (Creswell & Creswell, 2018). The population of the study comprised 17,321 registered SMEs in Abuja, as recorded by the Small and Medium Enterprises Development Agency of Nigeria (SMEDAN, 2022). Using the Taro Yamane (1967) formula for finite population, a sample size of 390 SMEs owners/managers was determined. To address potential issues of non-response, incomplete data, and invalid responses, the sample size was increased by 10%, resulting in 430 copies of the questionnaire being distributed. The questionnaires were administered physically and supported by an online version to increase response coverage across the six area councils in Abuja. Out of the 430 copies distributed, 386 valid responses were retrieved and used for data analysis, representing an 89.76% response rate. Before testing the hypotheses, preliminary analyses were conducted, including tests for outliers, multicollinearity, normality, non-response bias, and common method bias, to ensure data cleanness. The study employed Partial Least Squares Structural Equation Modelling (PLS-SEM) using SmartPLS 4.0 to analyse the data. This statistical technique was chosen because it is suitable for complex models involving moderating variables and is appropriate for studies with relatively small sample sizes (Hair, Hult, Ringle, & Sarstedt, 2021). Measurement model evaluation assessed the reliability and validity of the constructs through Cronbach's alpha, composite reliability, and average variance extracted (AVE) and discriminant validity. The structural model was subsequently tested to examine the hypothesized relationships among entrepreneurial passion, entrepreneurial agility and SMEs performance. Ethical considerations

were strictly observed; participants were informed of the study's purpose, assured of confidentiality, and participation was entirely voluntary. Data were collected, stored, and analysed in line with research ethics standards to ensure credibility and integrity of findings

Measures

The constructs in this study were measured using validated instruments adapted from prior empirical studies. All items were assessed using a five-point Likert scale, ranging from 1 = strongly disagree to 5 = strongly agree, which is widely used in entrepreneurship and management research to capture respondents' perceptions.

SMEs performance was measured using an eight-item scale developed by Spillan and Parnell (2006). Although 1-item (SMEP7) was deleted for loading below 0.5 threshold as recommended by Hulland (1999) the remaining 7 items which were used for the analysis. The scale captures subjective assessments of firm performance relative to competitors. The instrument's developers reported a Cronbach's alpha reliability coefficient of 0.764, indicating acceptable internal consistency but in this study the Cronbach's alpha reliability coefficient is 0.850. A sample item from the scale is: "My firm has a higher customer retention rate than its competitors."

Entrepreneurial agility was assessed using a three-item strategic agility scale developed by Yves Doz and Mikko Kosonen (2010). This scale measures the ability of entrepreneurs to rapidly sense and respond to emerging opportunities in dynamic environments. The instrument demonstrated a Cronbach's alpha coefficient of 0.820 as reported by the developers, suggesting good reliability. Meanwhile, in this study the Cronbach's alpha reliability coefficient is 0.813. A representative item is: "I quickly identify emerging business opportunities."

Entrepreneurial passion was measured using the four-item 'passion for developing' subscale from the entrepreneurial passion scale developed by Samuel Adomako and Muhammad Ahsan (2022). However, EP1 was deleted for loading below 0.5 while the remaining 3 items were employed for the analysis. The scale evaluates the extent to which entrepreneurs experience strong positive emotions toward venture development activities. The instrument developers reported a high Cronbach's alpha coefficient of 0.930, indicating excellent internal consistency. In this study, Cronbach's alpha reliability coefficient is 0.718. A sample item is: "Assembling the right people to work for my business is exciting."

DATA ANALYSES AND PRESENTATION

Data were analysed using structural equation model specifically Smart-PLS version 4.0.3.3 for measurement and structural model.

Assessment of Measurement Model

The study evaluated indicator reliability by examining outer loadings. According to Hair et al. (2019), indicators with loadings of 0.70 and above are desirable, while those below this threshold may be considered for removal. Hulland (1999) suggested a more lenient cutoff of 0.50, acknowledging the practical constraints often encountered in social science research. Further, Hair et al. (2021) cautioned that indicators with loadings between 0.50 and 0.70 should only be retained when their inclusion does not undermine construct reliability or convergent validity. Guided by these recommendations, the indicators SMEP7 and EP1 were removed from the measurement model due to outer loadings falling below the 0.50 threshold. Convergent validity was subsequently assessed using the Average Variance Extracted (AVE). Hair et al. (2022) recommend an AVE value of at least 0.50 as evidence that a construct adequately captures variance from its indicators. As presented in Table 1, all constructs in the study achieved AVE values exceeding this minimum criterion, thereby confirming adequate convergent validity. Finally, construct reliability was examined using composite reliability coefficients. In line with Hair et al. (2022), values of 0.70 or higher indicate satisfactory internal consistency and reliability. The results in Table 1 show that all constructs exceeded the recommended threshold, confirming that the measurement model demonstrates acceptable reliability and consistency.

Table 1: *Outer loadings, Reliability and Convergent Validity*

Constructs	Indicators	Outer loadings	Cronbach's alpha	Composite Reliability	AVE	Decision
Entrepreneurial						
Agility	EA1	0.850	0.813	0.821	0.521	Accepted
	EA2	0.785				
	EA3	0.730				
Entrepreneurial						
passion	EP2	0.743	0.718	0.727	0.507	Accepted
	EP3	0.758				
	EP4	0.846				
SMEs Performance	SMEP1	0.776	0.850	0.868	0.625	Accepted
	SMEP2	0.630				
	SMEP3	0.679				
	SMEP4	0.795				
	SMEP5	0.855				

SMEP6	0.903
SMEP8	0.729

Source: Systemization of Smart-PLS output, 2026

Discriminant validity was further assessed using the Heterotrait–Monotrait (HTMT) ratio. Henseler et al. (2015) recommended the HTMT approach because traditional methods such as the Fornell–Larcker criterion and cross-loadings often fail to identify discriminant validity problems, particularly when indicator loadings fall between 0.65 and 0.85. Prior literature suggests two commonly accepted cutoff values. Kline (2011) proposed a stricter criterion of HTMT values below 0.85 for constructs that are conceptually distinct, while Henseler et al. (2015, 2021) recommended a more lenient threshold of below 0.90 for constructs that are theoretically related. Given that entrepreneurial agility and entrepreneurial passion are conceptually similar constructs in this study, the <0.90 criterion was adopted. As reported in Table 2, all HTMT values are below this threshold, thereby providing evidence of adequate discriminant validity among the study constructs.

Table 2: *Heterotrait-Monotrait (HTMT) Ratio of Correlations Discriminant Validity*

Constructs	Entrepreneurial		
	Entrepreneurial Agility	passion	SMEs performance
Entrepreneurial Agility			
Entrepreneurial passion	0.431		
SMEs performance	0.516	0.433	

Source: Systemization of Smart-PLS output, 2026

Assessment of Structural Model

The structural model was conducted to analyse the direct and the hypothesised relationship between entrepreneurial agility and entrepreneurial passion and SMEs performance.

Table 3: *Hypothesised Relationship*

Hypotheses	Relationship	Beta	Standard Deviation (STDEV)	T Statistics	P Values	Decision
<i>H1_a</i>	Entrepreneurial Passion -> SMEs Performance	0.322	0.112	2.875	0.004	Rejected

H1_b	Entrepreneurial Agility->					
	SMEs performance	0.495	0.129	3.337	0.001	Rejected
	Entrepreneurial Passion*					
H2	Entrepreneurial Agility ->					
	SMEs Performance	0.194	0.099	1.960	0.005	Rejected
		R² = 0.458		Q² = 0.212		

The result for H1a indicates that entrepreneurial passion has a positive and statistically significant effect on SMEs' performance ($\beta = 0.322$, $t = 2.875$, $p = 0.004$). This suggests that higher levels of entrepreneurial passion among SME owners or managers are associated with improved firm performance. The magnitude of the beta coefficient shows a moderate effect size, implying that entrepreneurial passion meaningfully contributes to performance outcomes. Hence, the null hypothesis which states that entrepreneurial passion does not have significant effect on SMEs performance is rejected.

For H1b, entrepreneurial agility demonstrates a stronger positive and significant influence on SMEs performance ($\beta = 0.495$, $t = 3.337$, $p = 0.001$). This finding implies that agile entrepreneurial behaviors such as responsiveness, flexibility, and proactive adaptation substantially enhance SMEs performance within SMEs. The relatively higher beta value compared to entrepreneurial passion indicates that entrepreneurial agility plays a more dominant role in driving performance-related outcomes. Thus, the null hypothesis which states that entrepreneurial agility does not have significant effect on SMEs performance is rejected.

Regarding H2, the interaction effect between entrepreneurial passion and entrepreneurial agility on SMEs' performance is positive and statistically significant ($\beta = 0.194$, $t = 1.960$, $p = 0.005$), indicating a moderation effect. This implies that entrepreneurial agility strengthens the impact of entrepreneurial passion on SMEs' performance, such that passionate entrepreneurs achieve better performance outcomes when they are also agile. The model's explanatory power is substantial, with an R^2 of 0.458, indicating that approximately 45.8% of the variance in SMEs' performance is explained by the model. Additionally, the Q^2 value of 0.212 confirms adequate predictive relevance, suggesting that the model has meaningful out-of-sample predictive capability. Overall, the results underscore the complementary roles of entrepreneurial passion and agility in enhancing SME performance.

Discussions

The study found that entrepreneurial passion has a positive and significant effect on SMEs performance in Nigeria, indicating that entrepreneurs who exhibit high levels of passion toward their ventures tend to achieve superior business outcomes. This result suggests that passionate entrepreneurs are more committed, innovative, and resilient in pursuing business goals, which enhances operational effectiveness, customer satisfaction, and financial performance. Entrepreneurial passion motivates individuals to persist through challenges, identify opportunities, and mobilize resources creatively key drivers of sustained competitive advantage and growth in small and medium enterprises. The finding aligns with prior research by Adomako and Ahsan (2022); Gayathri and Thriveni (2023); Kusa and Danladi, (2024); Nson and Abimaje (2024) and Abu et al. (2023), who emphasized that passion energizes entrepreneurs to engage deeply in their roles and fosters proactive decision-making that translates into improved firm performance. Thus, fostering entrepreneurial passion among SMEs owners can serve as a strategic tool for stimulating innovation, adaptability, and long-term business success in competitive markets

The study revealed that entrepreneurial agility has a positive and significant effect on SMEs performance, demonstrating that agile entrepreneurs are better positioned to adapt to environmental changes, seize emerging opportunities, and sustain competitiveness in dynamic markets. Entrepreneurial agility enables SMEs to quickly sense market shifts, make timely strategic adjustments, and reconfigure resources effectively, which collectively enhance innovation, efficiency, and profitability. This finding aligns with the assertions of Zulganef, Pratminingsih and Rianawati (2023); Khan and Rehman (2023); Gerald, Obianuju and Chukwunonso (2020), who noted that agility empowers firms to remain resilient in uncertain business environments by fostering flexibility, responsiveness, and rapid learning. In the Nigerian context, where SMEs face volatile economic and policy conditions, agility becomes a vital capability for survival and growth. Thus, cultivating entrepreneurial agility among SME owners and managers can significantly strengthen their ability to sustain superior performance through continuous adaptation and proactive decision-making.

The study found that entrepreneurial agility significantly moderated the relationship between entrepreneurial passion and SMEs performance, suggesting that the positive influence of entrepreneurial passion on firm outcomes is stronger when entrepreneurs exhibit high levels of agility. This implies that while passion drives entrepreneurs' motivation, creativity, and persistence, agility enhances their ability to translate that passion into concrete strategic actions that improve business performance. Agility enables entrepreneurs to swiftly adapt their passionate energy toward emerging opportunities, market shifts, and customer needs, thereby

optimizing results. In the Nigerian SME context, where market and policy environments are volatile, entrepreneurial agility acts as a catalyst that transforms passion into sustained competitive advantage and measurable growth.

Implications

The findings of this study carry significant practical implications for SME owners, managers, and policymakers. The evidence that entrepreneurial passion and agility positively influence SMEs performance underscores the need for targeted capacity-building programs that cultivate these attributes among entrepreneurs. SME owners should be encouraged to engage in continuous learning, adaptability training, and innovation-oriented practices that enhance agility and enable them to channel their passion productively toward business growth. Policymakers and entrepreneurship development agencies can integrate agility-enhancement modules into entrepreneurship development programs and funding schemes to ensure that entrepreneurs possess the flexibility and strategic responsiveness required to thrive in Nigeria's dynamic business environment. Additionally, business support institutions can design mentorship programs that emphasize resilience, flexibility, and opportunity recognition to sustain SMEs' competitive advantage.

The theoretical implications of the study advance the understanding of entrepreneurial behaviour and performance within the framework of the dynamic capabilities' theory. By empirically establishing the moderating role of entrepreneurial agility, the study contributes to theory-building by demonstrating that agility is not only a dynamic capability but also a mechanism that strengthens the effect of passion on performance outcomes. This suggests that emotional and behavioural dimensions of entrepreneurship interact dynamically with strategic capabilities to drive firm success. The results further extend the applicability of the dynamic capabilities theory to the SME context, particularly in developing economies, showing how internal resources such as passion and agility combine to foster adaptability and competitive advantage in rapidly changing environments.

CONCLUSION AND RECOMMENDATIONS

The study concluded that entrepreneurial passion and agility play critical roles in enhancing SMEs performance in Nigeria, with entrepreneurial agility further strengthening the link between passion and performance. This implies that emotionally driven commitment and adaptive responsiveness are essential ingredients for achieving sustainable business success in dynamic environments.

Based on the findings, the study recommended that:

1. Enhance Entrepreneurial Passion: SME development agencies and business associations should organize regular motivational and leadership development workshops aimed at helping entrepreneurs identify, nurture, and sustain their passion for business. This can be achieved through mentorship programs, peer-learning networks, and storytelling sessions featuring successful entrepreneurs.
2. Develop Entrepreneurial Agility: SMEs should invest in agility-oriented training that focuses on strategic flexibility, innovation management, and rapid decision-making. This can be achieved by integrating digital tools, scenario planning, and adaptive business models into daily operations to improve responsiveness to market changes.
3. Integrate Passion and Agility in Policy Frameworks: Policymakers should incorporate entrepreneurial passion and agility enhancement modules into national SME development policies. This can be achieved through targeted funding for innovation-driven SMEs, incubation centers, and continuous skill development programs that promote adaptive entrepreneurship.

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GOVERNMENT POLICIES AND THE PERFORMANCE OF SMALL AND MEDIUM
ENTERPRISES (SMES) IN KARU LOCAL GOVERNMENT AREA, NASARAWA
STATE

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Abstract

The study examined the effect of government policies on the performance of SMEs in Karu, Nasarawa State, Nigeria. The specific objectives are to determine the effect of taxation policy and licensing on the performance of SMEs in Karu, Nasarawa State, Nigeria. The research design for this study was survey. The population was 594 SMEs and the study collected data from a sample of 444 respondents. The method of data collection was questionnaire, administered to the respondents who were owners/managers of small and medium businesses in Karu, Nasarawa State, Nigeria. The statistical tools employed in this study was multiple regressions. The study found that government policies have negative and significant effect on the performance of SMEs in Karu. This implies that government policies in terms of taxation and licensing contribute significantly to the performance of SMEs in Karu. Other findings showed that taxation has negative and a significant effect on growth of SMEs in Karu and licensing has a negative and significant effect on growth of SMEs in Karu. Based on the findings, it was recommended that government of Nasarawa State should reduce the tax rate and multiple taxation which they charged the SMEs; and increase the number of SMEs licensed in the state to perform different forms of enterprises in order to contribute to the well-being of the State and society at large.

Keywords: Government Policies, Taxation, Licensing and SMEs performance

Introduction

Small and medium scale enterprises (SMEs) are generally regarded as the engine of economic growth and equitable development in developing economies. They are labour intensive, capital saving and capable of helping to create most of the one billion new jobs the world will need by the end of the century. SMEs have the capacity to boost a country's GDP and bring in tax and

other forms of government revenue (Ogbede, et al., 2024). With their active industrial initiatives, the SMEs constitute a dynamic and critical part of the private sector whose entrepreneurial viability is essential in inducing responsiveness to fluctuations in the economic conditions of various countries (Mwasiaji, 2019).

In all economies, both developed and developing nations, but more in developing and fast-growing economies, there is a consensus among the policy makers, administrators, researchers, donor and non-governmental organisations, that SMEs are the powerful driving force for industrial growth, economic and sustainable development (Agwu & Emeti, 2014).

The existing governmental policies have the potential to affect the operation as well as performance of every business. The specific governmental policies that can have direct or indirect effects on businesses include taxation, licensing, subsidies, interest rates and exchange rates. The government taxation policy has been widely recognized as one factor that can affect the performance of every business. For instance, the imposition of high taxes on specific imported products will ultimately encourage local businesses to produce more of such goods. However, if the taxation on raw materials required for local production is high, then the local entrepreneurs may be discouraged to commence or continue production. Any increase on corporation tax will have the same impact as rising production cost. In order to cover such costs, business owners may be forced to increase the price of their finished products. Other taxes that can have the same effects include: value added tax (VAT) and environmental taxes. Even though VATs are specifically for the final consumers, the business may incur considerable costs when administering the VAT system.

The government's licensing policy can also have considerable effects on economy as well as the business environment (Okojie, 2013) and unfortunately, such trend will result to a considerable fall in the rate of investments, as companies will not have enough money for more investments. It is important to note that the government is primarily responsible for the creation of frameworks and rules that guide business operations in the country. Such rules are not always constant, and may change from time to time, thereby forcing entrepreneurs to change how they operate their businesses. Thus, government policy can have huge effects on the operations as well as performance of business establishments. In every country, the government's contribution to the nation's economy remains the most essential aspect of its economic policy. Over the years, government of Nigeria (including Nasarawa State) has made policies such as taxation and licensing on small and medium scale enterprises by using different taxes such as corporate income tax, capital gains tax and value added tax; and these taxes may affect the performance of SMEs in Karu, Nasarawa State. Also, government of Nigeria regulated and

made policies on licensing to ensure high performance of SMEs in terms of growth. Despite measures put in place by the government, the SMEs in Nigeria are not growing, instead, according to the Small and Medium Enterprises Development Agency of Nigeria (SMEDAN) (2019), 80% of small businesses die within seven years of its establishment.

Several studies such as Ogbede, et al., (2024); Mwasiagi (2019); Ongayi, et al., (2021) studied government policies and performance of SMEs in Imo State, Kenya, however, none of the studies reviewed used Karu as the case study. It is also established that none of these studies used a combination of taxation policy and licensing as well as growth to measure the dependent and independent variables respectively.

The following were considered as research questions

- i. How does taxation policy affect the performance of SMEs in Karu, Nasarawa State of Nigeria?
- ii. To what extent does licensing affect the performance of SMEs in Karu, Nasarawa State of Nigeria?

The main objective of this study is to examine the effect of government policies on the performance of SMEs in Karu, Nasarawa State, Nigeria. The specific objectives are to:

- i. examine the effect of taxation policy on the performance of SMEs in Karu, Nasarawa State, Nigeria.
- ii. assess the effect of licensing on the performance of SMEs in Karu, Nasarawa State, Nigeria.

Statement of Hypotheses

The following null hypotheses are formulated:

H0₁: Taxation policy has no significant effect on the performance of SMEs in Karu, Nasarawa State, Nigeria.

H0₂: Licensing has no significant effect on the performance of SMEs in Karu, Nasarawa State, Nigeria.

It is believed that at the completion of the study, the findings will be of great importance to the joint tax board and the Federal Inland Revenue Service in assessing and collection of taxes from SMEs so as to minimize double or multiple taxation. The study will also be useful to State Board of Internal Revenue and Local Government revenue collectors, as the study seek to remind them of the nemesis of government policy on SMEs growth. The study will also be beneficial to researchers who intend to embark on study in similar topic as the study will serve as a guide to their study.

However, the findings of this research will serve as additional literature to be used as reference materials in developing further studies. Researchers, who are entrepreneurs in the SMEs and have experienced failure of businesses without identifying reasons leading to failure, would find this study useful since it shall provide solutions and recommendations that will be identified at the end of this work.

This study examines the effect of government policies on the performance of SMEs in Karu, Nasarawa State, Nigeria. The study covers taxation policy and licensing as proxies of independent variable (government policies), while the dependent variable (SMEs performance) is proxied by growth.

Conceptual Framework

Government Policy

A policy can be defined as a plan of action agreed upon and chosen by a group of people, organizations, or political parties. In business, policies can be categorized as internal or external. The internal policies, guide and spell out how business activities are run. These business policies are dependent and often influenced by the overall government policies within the economy in which the SME's operate in. The government policies, therefore, are external policies which are not within the direct control of the entrepreneurs within the economy (Akinyemi & Adejumo, 2018). Government policy is seen as an anchor to all other factors which are also essential and paramount to any entrepreneurial scheme. Government policies according to Tende (2014) are policies designed to moderate the relationship between the entrepreneurship and the economic development of SMEs development through wealth creation and job creation.

Government Policies refer to the regulations and agreements that control imports and exports to foreign countries. Government policies define standards, goals, rules and regulations that pertain to SMEs relations between countries (Thelas, 2013). These policies are specific to each country and are formulated by its public officials. However, a country's trade policy includes taxes imposed on import and export, inspection regulations, licensing and tariffs and quotas.

Taxation

Taxation is an essential tool of fiscal policy that helps to generate revenue to finance the activities of government and stimulate the development and growth of the economy (Ewubare & Ozo-Eson, 2019). Taxation refers to imposition of compulsory levies on individuals or entities by government. From income tax to goods and services tax (GST), taxation applies to all levels. Taxation refers to imposition of compulsory levies on individuals or entities by

government to raise revenue for government expenditure, although they serve other purposes as well. To streamline the process of taxation and ensure transparency in the country, the state and the central government have undertaken various policy reforms over the last two years (Ojede & Yamarik, 2012). Ariwodola (2015) describe tax as a compulsory levy imposed by the government authority through its agents on its subjects or his property to achieve some goals.

License

A licence is a permission granted to someone upon application to a controlling authority to perform a certain activity in a prescribed manner, normally after satisfying certain conditions including payment of a determined fee. The Kampala City Council Authority (KCCA, 2017) defines a trading license as an authorization given by government organizations that permit potential entrepreneurs or organizations to carry out business within the government's jurisdictional zone. There are often many licenses, registrations and certifications required to conduct a business in a particular area depending on the type of activities.

Normally, a potential licensee provides details of his activities and location of the business. Other determining aspects may include the number of workers, the configuration of the business setup, its members and shares (if applicable) such as sole proprietor or corporation (Antoniak, 2015). Under normal circumstances, a business or any other functioning activity may be censured by the government if it is found to be carrying its activities without a legal license. Therefore, licenses are vital and indispensable features of contemporary economies.

Performance

Performance is a subjective measure of how well a firm can use assets from its primary mode of business and generate revenues. It is the process of measuring the results of a firm's policies and operations in monetary terms (Mwangi, 2016). Performance is concerned with the overall productivity in an organization in terms of stock turnover, customers, profitability and market share (Uzel, et al., 2015)

Small and Medium Enterprises (SMEs)

SMEDAN (2007) defines micro, small and medium enterprises as those companies whose headcount or turnover falls below certain limits of N50M. According to Etuk, et al., (2014), “Small and Medium Scale Enterprises (SMEs) is defined based on certain criteria including, turnover, number of employees, profit, capital employed, available finance, market share and relative size within the industry”. In the same vein, small and medium enterprises as defined

by the National Council of Industries in Nigeria as business enterprises whose total costs; excluding land, is not more than two hundred million naira (N200, 000,000.00) only (Onugu, 2015).

The Federal Ministry of Commerce and Industry view SMEs as “firms with a total investment (excluding cost of land but including capital) of up to N750,000, and paid employment of up to fifty (50) persons” (Mba & Cletus, 2014).

Empirical Studies

Ogbede, et al., (2024) assessed the effect of government policies on the performance of small and medium scale enterprises in Imo State. The study adopted survey research design, primary sources of data with the aid of a well-structured questionnaire that was distributed to the owners and staff of registered small and medium scale enterprises in Imo State. The population of the study consisted of nine (9) Small and Medium Scales enterprises and 784 respondents selected from the 27 Local Government Areas in Imo State with a sample size of 265. Data were analyzed and presented using descriptive statistic such as simple percentage, frequency and means while the hypotheses were tested using multiples regression. The result of the findings revealed that tax, government credit and land border closure policies all significantly influenced the growth of SMEs in Imo State.

Also, Evans (2019) examined the effect of government policy on the performance of selected manufacturing enterprises in Kenya. Descriptive research design was adopted in obtaining data from 56 Chief Executive Officers, General Managers or equivalent senior management staff of sampled enterprises with an employment level of between fifty-one (51) and two hundred persons (200). Mean responses received in a Likert scale of 1 – 5 for each of the tested item was calculated by summing up all the codes from all the 56 respondents. The study established that manufacturing enterprises face challenges brought about by a complicated regulatory regime, unfriendly customs and trade regulations, tight monetary and credit policies, corruption and excessive tax regimes, workforce and labour regulations, thus impacting negatively on their performance. The study concluded that governmental policies are important in providing an environment that is conducive to business development.

Ongayi, et al., (2021) assessed the impact of taxation policies on the performance of small to medium enterprises. Multiple regression model was used to measure the relationship between point of sale transaction tax, mobile money taxes and financial performance. SPSS and EXCEL were used to analyze the study data and to identify the descriptive characteristics of the dependent and independent variables and results of the test. Findings indicated that

intermediate money tax transfer has a significant impact on the financial performance of SMEs, the research also showed that there is a negative impact of mobile money tax transfer and bank transfer tax to the financial performance of SMEs. It was also established that there is a negative relationship between SMEs in the supply chain as all SMEs agreed that mobile electronic tax transfer result in increase in cost of transactions and decrease in number of transactions.

Adewale, and Godwin (2022) examined corporate taxes and financial performance of small and medium enterprises in Nigeria. The study adopted the longitudinal research using secondary data with ordinary least square regression technique of analysis and time series data. The sample population of the study was 41.5 million SMEs based on judgmental sampling to obtain numerical values of model coefficient with the use of e-views version 9. Finding revealed that the company's income tax has a positive and significant effect on the financial performance of SMEs in Nigeria. Based on the finding, the study concluded that financial performance of SMEs in Nigeria is driven by company's income tax.

Alen and Shepherd (2017) carried out a study in Greater Maputo representing Mozambique as a whole to determine if simplified licenses ease the registration of start-ups and informal firms. A sample of 485 small firms was drawn from the population of firms in Greater Maputo, using stratified random sampling method. Face to face interviews were conducted using structured, close-ended questionnaires to collect primary data. The study employed the quantitative methodology, and data were analyzed by the use of descriptive statistics that generated frequencies and percentages results. The study found that although a lot of red tapes and hindrances to firms licensing were eased, the new measures were still inadequate to bring about more small firms registration, and attract those operating informally to become formal.

Nino and Gentoral (2024) investigated the relationships and differences among compliance levels, business performance, and satisfaction with the Business Permits and Licensing System (BPLS) requirements among 390 Micro, Small, and Medium Enterprises (MSMEs) in Iloilo City, Philippines. Using a descriptive, quantitative, and correlational design, the study sampled MSMEs from various industry sectors using the Input-Process-Output (IPO) model. Results showed that MSMEs, reported high compliance with BPLS requirements. It implies strong adherence to the requirement, suggesting effective engagement with the regulatory system. They also rated their business performance, including changes in gross sales, sales growth, capitalization, capital turnover, employee numbers, and overall satisfaction, as very good to excellent. It suggests they are experiencing strong financial performance, indicating a positive economic impact. High satisfaction with BPLS was also noted, which implies that the system is easy and efficient, leading to improved compliance and more favorable business conditions.

T-tests and ANOVA revealed differences and similarities in compliance, business performance, and satisfaction across different business types and sectors, suggesting that these factors are affected by specific attributes of each business group. Pearson's correlation analysis indicated a negligible relationship between compliance and business performance, a very strong positive relationship between compliance and satisfaction, and a weak positive relationship between business performance and satisfaction. It implies that compliance significantly enhances satisfaction and has little impact on business performance.

Theoretical Framework

Institutional Theory

Institutional theory was propounded by W. Richard Scott in 1987, building on his earlier works. This theory is about how institutions (rules, norms, regulations) shape organisational performance. Organisations (small and medium enterprises) conform to institutional pressures (government policies). Government policies (taxation, licensing) are institutional pressures that organisations (SMEs) should conform to. SMEs respond to these pressures affect their performance. Institutional theory explains why SMEs might struggle with compliance and adapt strategies. A Nigerian SME navigates complex tax regulations and licensing requirements. SMEs often struggle with bureaucratic processes on licensing and tax compliance. Also, different levels of government impose multiple taxes on SMEs, which some SMEs comply, others evade or negotiate.

Methodology

The study adopted survey research method because data needed requires the use of structured questionnaire that was administered to the respondents who are owners/managers of small businesses in Karu, Nasarawa State, Nigeria. Survey research design was used because it allows researchers to collect a large amount of data in a relatively short period, it is less expensive than many other data collection techniques, created quickly and administered easily and used to collect information on a broad range of things, including personal facts, attitudes, past behaviors, and opinions.

The population of this study consists of all registered SMEs in Karu, Nasarawa State, Nigeria. According to Karu Local Government Report, there are 594 registered SMEs in Karu, Nasarawa State, Nigeria. Thus, the population of this study is 594 owners/managers of SMEs.

The study used random sampling technique to collect data from the respondents. Data was collected from those SMEs that stay in operation for at least a year and above for the study, while those below a year of operation were disqualified from participating.

The method of data collection was questionnaire administered to the respondents who were owners/managers of SMEs in Karu, Nasarawa State, Nigeria. The reason for using primary sources of data is that, it is crucial in presenting a study of this nature and other research data that is based on original data produced by the people actually involved in the subject area of research.

A structured designed questionnaire was used in obtaining data on assessing the effect of government policy on the performance of small and medium businesses in Karu, Nasarawa State of Nigeria. It was designed in a five (5) point Likert type scale questionnaire to collect data from the respondents.

The study also test for reliability of the instrument after the questionnaire has been administered to the respondents and the reliability and viability of the questionnaires are more than the Alpha values 0.7.

Table 1: Reliability test

Variables	Number of items	Cronbach's Alpha
Business growth	3	0.87
Licensing	3	0.91
Taxation	3	0.86

Source: Researcher computation

The statistical tools that was employed in this study was multiple regressions, and Spearman correlation. The multiple regression was used to determine the effect of relationship between the variables of interest. The correlation is employed to ascertain the strength and degree of the relationship that existed between the variables and that the decision rule is that, if coefficient of determination is +1 and -1, it implies that there is perfect positive or negative association between the dependent and independent variables. Also, if the result of the analysis indicates zero (0), it implies that there is no association between the dependent and independent variable. The software statistical package of SPSS version 28.00 was used in analysing data in this study and the output shall show the t-test, f-test and the probability of either accepting or rejecting based on the condition of 5% level of significance.

The model specification for this study is stated below:

$$BG = \alpha + \beta_1 TX + \beta_2 LS + \mu \dots \dots \text{equation 1}$$

Where:

BG = Business Growth (measure of SMEs performance)

β = Coefficient

α = Intercept

μ = Error terms

TX= taxation

LS= Licensing

The statistical tools such as regression and correlation used were also necessary because it shows the relationship between the dependent variable and independent variable. The use of t-test and f-test are also unique because they explain the significance level of the dependent variable on the independent variables and the overall significance of the variables will also indicate the goodness fit of the model respectively.

Out of 594 copies of questionnaire distributed to the respondents (owners/managers of SMEs) in Karu, Nasarawa State, 481 were retrieved while 444 were filled correctly and was considered for statistical analysis.

Data Presentation

Table 2: Years of Operating the Business

Responses	Frequency	Percentage (%)
1- 4 years	192	43.24
5-10 years	123	27.70
11 years and above	129	29.06
Total	444	100

Source: Researcher's Survey

The table shows that among the 444 respondents (managers or owner-managers of SMEs in Karu, Nasarawa State). 192 respondents (43.24%) reported that their businesses have been in operation for 1–4 years, 123 respondents (27.70%) reported operation for 5–10 years, and 129 respondents (29.06%) reported operation for 11 years and above.

This indicates that the majority of SMEs in Karu are relatively young, having operated for less than 5 years. However, a significant portion (29.06%) are more established, operating for 11 years or longer, which suggests a mix of both emerging and well-established enterprises in the area.

The data implies that while Karu LGA has a growing population of newer SMEs, there is also a presence of experienced businesses that have sustained operations for over a decade. This distribution is useful for understanding business dynamics, survival rates, and the potential impact of government policies on both young and mature SMEs.

4.1.2 Government Policies

Table 3: Taxation

Items	5	4	3	2	1
Karu, Nasarawa State government reduce tax rate for SMEs.	165 (37.16%)	191 (43.02%)	29 (6.53%)	33 (7.43%)	26 (5.85%)
Karu, Nasarawa State government charges frequently multiple taxation on SMEs.	14 (3.15%)	22 (4.95%)	25 (5.63%)	137 (30.86%)	246 (55.41%)
Karu, Nasarawa State Government frequently issues out tax holiday for SMEs	199 (44.82%)	155 (34.91%)	22 (4.95%)	40 (9.01%)	28 (6.31%)

Source: Researcher's Survey

It is recorded that 165 respondents (37.16%) strongly agreed that the Karu, Nasarawa State government reduces tax rates for SMEs, 191 respondents (43.02%) agreed, and 29 (6.53%) were undecided, while 33 (7.43%) disagreed and 26 (5.85%) strongly disagreed.

The table shows that 314 respondents (3.15%) strongly agreed and 22 (4.95%) agreed that the government frequently imposes multiple taxes, while 25 (5.63%) were undecided. 137 respondents (30.86%) disagreed and 246 (55.41%) strongly disagreed.

Table 3 shows that 199 respondents (44.82%) strongly agreed that tax holidays are frequently issued, 155 (34.91%) agreed, and 22 (4.95%) were undecided, while 40 (9.01%) disagreed and 28 (6.31%) strongly disagreed.

Table 4: Licensing

Items	5	4	3	2	1

SMEs in Karu always operated their business under the license of the state	133 (29.95%)	145 (32.66%)	33 (7.43%)	66 (14.86%)	67 (15.09%)
Nasarawa State government of Nigeria frequently licensed all SMEs and restrict them on the type of business operated	31 (6.98%)	43 (9.68%)	39 (8.78%)	144 (32.43%)	187 (42.13%)
Nasarawa State government of Nigeria partly licensed SMEs in the state to operate their ventures	132 (29.73%)	140 (31.53%)	56 (12.61%)	33 (7.43%)	83 (18.70%)

Source: Researcher's Survey

It is recorded that 133 respondents (29.95%) strongly agreed that SMEs in Karu always operate their businesses under the license of the state, 145 (32.66%) agreed, and 33 (7.43%) were undecided, while 66 (14.86%) disagreed and 67 (15.09%) strongly disagreed.

The table shows that 31 respondents (6.98%) strongly agreed that the Nasarawa State government frequently licenses all SMEs and restricts the type of business operated, 43 (9.68%) agreed, and 39 (8.78%) were undecided, while 144 (32.43%) disagreed and 187 (42.13%) strongly disagreed.

Table 4 shows that 132 respondents (29.73%) strongly agreed that the Nasarawa State government partly licenses SMEs to operate their ventures, 140 (31.53%) agreed, and 56 (12.61%) were undecided, while 33 (7.43%) disagreed and 83 (18.70%) strongly disagreed.

Performance

Table 5: Growth of SMEs in Karu

Items	5	4	3	2	1
SMEs in Karu Nigeria usually have increase in output	85 (19.14%)	67 (15.09%)	49 (11.04%)	132 (29.73%)	111 (25.00%)
SMEs in Karu Nigeria frequently utilized its resources to obtained desire result	40 (9.01%)	85 (19.14%)	59 (13.28%)	131 (29.50%)	129 (29.05%)

SMEs frequently have	68	88	56	120	112
increase employees and	(15.32%)	(19.82%)	(12.61%)	(27.03%)	(25.23%)
customers					

Source: Researcher's Survey

It is recorded that 85 (19.14%) respondents strongly agreed that SMEs in Karu usually experience an increase in output, 67 (15.09%) agreed, and 49 (11.04%) were undecided, while 132 (29.73%) disagreed and 111 (25.00%) strongly disagreed.

The table shows that 40 (9.01%) respondents strongly agreed that SMEs frequently utilize resources to achieve desired results, 85 (19.14%) agreed, and 59 (13.28%) were undecided, while 131 (29.50%) disagreed and 129 (29.05%) strongly disagreed.

Table 5 shows that 68 (15.32%) respondents strongly agreed that SMEs frequently experience an increase in employees and customers, 88 (19.82%) agreed, and 56 (12.61%) were undecided, while 120 (27.03%) disagreed and 112 (25.23%) strongly disagreed.

Table 6: Descriptive Statistics

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
TX	444	1.0000	5.0000	3.179429	.7285687
LS	444	1.0000	5.0000	2.742492	.6771236
GB	444	1.0000	5.0000	3.011261	.6783205
Valid N (listwise)	444				

Source: SPSS, 28 Version.

The mean values indicate **moderate perceptions** of government policies and SMEs performance. Taxation has a mean value of (TX) = 3.18, Licensing (LS) = 2.74 and Business Growth (GB) = 3.01. This suggests that SMEs in Karu perceive taxation as slightly more burdensome than licensing, while their growth performance is moderate. Standard deviations (0.68–0.73) are relatively low, indicating **responses are clustered around the mean** with limited variation.

Table 7: Correlation Analysis

Correlations

	GB	TX	LS

GB	Pearson Correlation	1	-.563**	-.541**
	Sig. (2-tailed)		.000	.000
	N	444	444	444
TX	Pearson Correlation	-.563**	1	.008
	Sig. (2-tailed)	.000		.867
	N	444	444	444
LS	Pearson Correlation	-.541**	.008	1
	Sig. (2-tailed)	.000	.000	
	N	444	444	444

** . Correlation is significant at the 0.05 level (2-tailed).

Source: SPSS, 28 Version.

Table 7 indicates that Taxation and Business Growth with a correlation of (-0.563, and p-value of $0.000 < 0.05$ shows moderate negative and statistically significant relationship. This implies that High taxation is associated with low SME growth in Karu, Nasarawa State of Nigeria. Meanwhile Licensing and Business Growth with a correlation of (-0.541, and p-value of $0.000 < 0.05$ shows moderate negative and statistically significant relationship. This implies that stricter or more burdensome licensing is associated with low SME growth in Karu, Nasarawa State of Nigeria.

Test of Hypotheses

Table 8: Regression Analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1				
1	.778 ^a	.605	.603	.4275385

a. Predictors: (Constant), LS, TX

Source: SPSS, 28 Version.

Table 8 shows that $R^2 = 0.605$ that is 60.5% of the variance in SME business growth (GB) is explained by taxation (TX) and licensing (LS). The remaining 39.5% is explained by other factors outside the model (error term). Adjusted R^2 (0.603) confirms the model is robust after accounting for the number of predictors.

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	123.223	2	61.611	337.062	.000 ^b
	Residual	80.610	441	.183		
	Total	203.833	443			

a. Dependent Variable: GB

b. Predictors: (Constant), LS, TX

Source: SPSS, 28 Version.

The ANOVA result shows that the model is fit considering the f-statistics of 337.062 and p-value of 0.00 which is significant at 5% level of significance. This reveal that the independent variables are fit in the model and can explain their cause-effect-relationship effectively.

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6.138	.122		50.249	.000
	TX	-.520	.028	-.559	-18.653	.000
	LS	-.537	.030	-.536	-17.912	.000

a. Dependent Variable: GB

Source: SPSS, 28 Version.

Hypothesis One

Taxation has negative effect on Business Growth ($\beta = -0.559$, p-value of $0.000 < 0.05$). This implies that for every 1-unit increase in taxation, burden decreases SME growth by 0.52 units. Hence, the null hypothesis is rejected because Taxation significantly reduces SME growth.

Hypothesis Two

Licensing has negative effect on Business Growth ($\beta = -0.536$, p-value of $0.000 < 0.05$). This implies that for every 1-unit increase in licensing, burden decreases SME growth by 0.54 units. Therefore, the null hypothesis is rejected because Licensing significantly reduces SME growth.

Conclusively both the null hypotheses were supported that **government policies (TX and LS) negatively and significantly affect SMEs growth.**

Discussion of Findings

The study found that government policies have a negative and significant effect on the performance of SMEs in Karu. This implies that government policies in terms of taxation and licensing contribute significantly to the performance of SMEs in Karu. The finding is in line with the findings of Alabi et al (2019) who found that there is a negative and significant effect of the variables. However, none of the authors disagreed with the finding and found that there is a positive and insignificant relationship between the variables. The study also is in line with Institutional Theory which explains how institutions (rules, norms, regulations) shape organisational (SMEs) behavior to conform to institutional pressures (government policies). Government policies in terms of taxation and licensing are institutional pressures, which SMEs respond to, and these pressures affect their performance.

In hypothesis 1, the result shows that taxation has negative and a significant effect on the growth of small and medium scale enterprises in Karu. This implies that taxation contribute to explaining changes in growth of SMEs in Karu, suggesting this variable is important predictor in the model.

In hypothesis 2, the result shows that licensing has a negative and significant effect on growth of small and medium scale enterprises in Karu. This implies that licensing is an important predictor in the growth of SMEs in Karu and contributes to explaining changes in growth of SMEs.

Conclusions

Based on the findings of this study, it is concluded that government policies in terms of taxation and licensing have negative and significant effect on performance (in terms of growth) of small and medium enterprises in Karu, Nasarawa State.

Recommendations

The study therefore recommends that:

- i) Government of Nasarawa State should simplify tax processes by streamlining tax payments, reduce rates, offer tax incentives to SMEs. They should regularly assess the impact of their policies on SMEs.
- ii) Government of Nasarawa State should ease licensing by simplifying, digitizing licensing procedures, while training SMEs on compliance and benefits.

Suggestions for further Studies

The study assessed the effect of government policies on the performance of SMEs in Karu, Nasarawa State. Further studies can be carried out on the impact of policies on SMEs in different Nigerian states or African countries.

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PERCEPTIONS OF NIGERIA'S TAX REFORM AMONG INFORMAL GRAINS
SELLERS: A QUALITATIVE STUDY

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Abstract:

Nigeria's recent tax reform agenda aims to expand the tax base, improve revenue generation, and enhance fiscal sustainability. However, the success of these reforms depends largely on the perceptions, understanding, and compliance behaviour of actors within the informal economy, which constitutes a significant proportion of national economic activity. Informal grains sellers represent a critical segment of this sector, yet their voices remain underrepresented in tax policy discourse. This study explores the perceptions of informal grains sellers regarding Nigeria's tax reform and examines how these perceptions shape their attitudes toward tax compliance and engagement with government authorities. Adopting a qualitative research design, in-depth semi-structured interviews were conducted with purposively selected grains sellers in a major urban market in Northern Nigeria. Data were analyzed thematically to identify recurring patterns, meanings, and contextual interpretations. Findings reveal varying levels of awareness of the tax reform, concerns about fairness, transparency, multiple taxation, enforcement practices, and perceived lack of reciprocal public service delivery. While some informants expressed willingness to comply under improved governance conditions, others demonstrated skepticism and resistance rooted in historical mistrust and economic vulnerability. The study concludes that Limited awareness and understanding of tax reform objectives among grains sellers constrain effective participation in the formal tax system. Among others, the study recommends that government should enhance communication and awareness campaigns targeted at informal grains sellers, using local languages and participatory platforms to explain tax reform objectives and procedures.

Keywords: Informal economy, tax reform, grains sellers, perceptions, tax compliance, Nigeria, qualitative study.

Background to the Study

Nigeria's fiscal structure has long been dominated by oil revenue dependence, a limited tax base, and consistently low tax-to-GDP ratios relative to comparable Sub-Saharan African economies (IMF, 2023). Fluctuations in global oil prices, increasing public expenditure pressures, inefficient subsidies and widening infrastructure gaps have intensified government efforts to strengthen domestic revenue generation through tax reforms (Lawal, 2025; World Bank, 2022). These reforms prioritise improved tax administration, expanded compliance, reduced leakages, and the formal integration of informal economic activities into the tax system to ensure fiscal sustainability (Zwal, et al, 2025; FIRS, 2023; OECD, 2022). Given the scale of Nigeria's informal economy, which encompasses diverse micro-enterprises including agricultural traders, effective reform implementation requires a seamless understanding of how informal actors perceive and respond to taxation (ILO, 2018).

Informal grains sellers constitute a critical segment of the informal economy, contributing significantly to food distribution, market stability, and household food security across rural and urban markets (Skinner, 2016). Despite their economic relevance, they often operate outside formal regulatory frameworks and face overlapping levies from local authorities, market associations, and informal collectors, creating uncertainty and perceptions of unfairness (Fjeldstad & Heggstad, 2012; Joshi et al., 2014; Abulabu, 2024). Where public services, infrastructure, and social protection are inadequate, taxation may be viewed as extractive rather than developmental, weakening trust and the social contract between traders and the state (Brautigam et al., 2008; Moore, 2008). Informal traders' compliance decisions are therefore strongly shaped by their perceptions of fairness, transparency, enforcement practices, and reciprocal benefits (Kirchler et al., 2008; Timmons, 2005).

Existing studies on taxation in Nigeria have largely employed quantitative approaches that emphasise macroeconomic outcomes, revenue productivity, and administrative efficiency, with limited attention to the lived experiences and interpretive perspectives of informal sector informants (Adebisi & Gbegi, 2013; IMF, 2023; Prichard et al., 2019). Qualitative evidence explaining how informal grains sellers understand tax reforms, negotiate compliance pressures, and assess institutional legitimacy remains scarce (Joshi et al., 2014). Moreover, the informal sector is heterogeneous, with perceptions shaped by commodity type, location, education, gender, and scale of operation, reinforcing the need for context-sensitive inquiry (ILO, 2018; Prichard et al., 2019). Without grounded insight into these dynamics, tax reforms risk resistance, low compliance, unintended livelihood disruptions, and further entrenchment of informality (Brautigam et al., 2008; Moore, 2008).

Against this backdrop, this study adopts a qualitative approach to explore how informal grains sellers perceive and interpret Nigeria's tax reform, including their views on policy objectives, fairness, transparency, administrative processes, enforcement practices, institutional engagement, and reciprocal public benefits (OECD, 2022; World Bank, 2022). Specifically, the study examines how experiences of multiple taxation and service delivery influence trust in government and shape attitudes toward compliance (Fjeldstad & Heggstad, 2012; Kirchler et al., 2008; Timmons, 2005). By addressing the existing empirical gap, the study seeks to generate context-driven evidence that can support inclusive fiscal policymaking, strengthen state–informal sector relations, and promote equitable and sustainable taxation frameworks in Nigeria.

Building on the foregoing discussion of Nigeria's fiscal reforms, the structural challenges of informal taxation, and the limited qualitative evidence on informal traders lived experiences, this study seeks to generate context-specific insights into how informal grains sellers perceive and respond to the evolving tax environment. Accordingly, the following research questions are formulated to examine grains sellers' understanding of tax reform objectives, their perceptions of fairness and administrative practices, the influence of enforcement and institutional engagement on trust, and how these factors collectively shape compliance behaviour and engagement with the formal tax system.

How do informal grains sellers understand and interpret Nigeria's tax reform and its objectives?

What perceptions do informal grains sellers hold regarding the fairness, transparency, and administrative processes of the tax reform?

How do experiences of multiple taxation, enforcement practices, and institutional engagement shape grains sellers' trust in tax authorities and government institutions?

How do perceptions of reciprocal benefits, public service delivery, and value for taxes paid influence grains sellers' attitudes toward taxation?

In what ways do these perceptions collectively shape informal grains sellers' willingness to comply with tax obligations and engage with the formal tax system?

The main objective of this study is to explore the perceptions of informal grains sellers regarding Nigeria's tax reform and to examine how these perceptions influence their trust in government institutions, attitudes toward taxation, and willingness to comply with tax obligations.

Literature Review and Theoretical Framework

Tax reforms in developing economies seek to strengthen domestic revenue mobilisation, broaden the tax base, and promote sustainable fiscal governance (OECD, 2022; World Bank, 2022). In Nigeria, recent reforms aim to integrate informal sector operators into the formal tax system in order to enhance compliance and reduce revenue leakages (FIRS, 2023). However, informal actors, particularly grains sellers, continue to operate within fragmented regulatory environments characterised by multiple levies, weak institutional engagement, and limited trust in government authorities (Fjeldstad & Heggstad, 2012; Joshi et al., 2014). These structural challenges undermine voluntary compliance and threaten the effectiveness of fiscal reforms. Understanding how informal actors perceive taxation is therefore essential, as compliance behaviour directly shapes revenue outcomes and state–citizen relations.

The informal economy comprises economic activities that operate outside formal regulatory frameworks, including small-scale trade, agriculture, transportation, and artisanal production (ILO, 2018). In Nigeria, the informal sector accounts for approximately 65% of employment and over 50% of gross domestic product, underscoring its central role in livelihoods and economic resilience (NBS, 2022; IMF, 2023; Mohammed & Adamu, 2025). Informal grains sellers are particularly significant due to their contribution to food distribution, rural–urban market integration, price stabilisation, and household food security (FAO, 2021). Despite this importance, informal traders frequently face overlapping tax demands from local governments, market associations, and informal collectors, creating administrative complexity and eroding trust (Fjeldstad & Heggstad, 2012; Ajibade et al., 2020). Such fragmented taxation structures are consistently associated with low compliance and persistent informality (Joshi et al., 2014). Awareness and understanding of tax reforms are critical determinants of compliance behaviour. Timmons (2005) and Moore (2008) argue that when taxpayers lack clarity regarding policy objectives and obligations, voluntary compliance declines. Empirical studies in Nigeria indicate that informal operators often possess limited knowledge of tax reforms due to weak communication channels, low stakeholder engagement, and limited policy outreach (Prichard et al., 2019; OECD, 2022). Among grains sellers, these challenges are compounded by low literacy levels, complex administrative procedures, and historical mistrust of government interventions (ILO, 2018; FAO, 2021). These dynamics create a disconnect between policy intent and taxpayer interpretation, reinforcing the need for qualitative inquiry into how informal actors understand and internalise reform initiatives.

Perceptions of fairness, transparency, and administrative consistency significantly influence tax compliance. Kirchler et al. (2008) and Timmons (2005) demonstrate that perceived inequities, opaque procedures, and inconsistent enforcement weaken trust and discourage

voluntary compliance. Informal traders are particularly sensitive to multiple taxation, arbitrary assessments, and unclear administrative rules, which are often interpreted as exploitative (Adewale & Sadiq, 2020; Joshi et al., 2014). In Nigeria, when taxation is perceived as extractive rather than developmental, compliance willingness declines, especially in contexts where public services and infrastructure remain inadequate (Brautigam et al., 2008; Moore, 2008; FAO, 2021; OECD, 2022). These perceptions weaken the social contract between the state and informal economic actors.

Institutional trust further mediates compliance behaviour. The Slippery Slope Framework explains that compliance emerges from the interaction between enforcement power and taxpayer trust in authorities (Kirchler et al., 2008). In Nigeria, informal operators often encounter enforcement practices perceived as coercive, unpredictable, or unevenly applied, generating resistance and mistrust (Fjeldstad & Heggstad, 2012; Joshi et al., 2014). Broader governance challenges, including institutional weakness and corruption, reinforce skepticism toward tax authorities and public institutions (Prichard et al., 2019; IMF, 2023). Consequently, compliance among informal traders may be driven more by fear of sanctions than by institutional legitimacy or civic obligation (Kirchler et al., 2008; Timmons, 2005).

Perceived reciprocal benefits also shape compliance attitudes. Fiscal Exchange Theory posits that taxpayers are more willing to comply when they perceive tangible benefits and service delivery outcomes linked to tax payments (Moore, 2008; Timmons, 2005). In Nigeria, informal traders frequently report dissatisfaction with public infrastructure, market facilities, and social services, reinforcing perceptions of taxation as extractive (FAO, 2021; OECD, 2022). Evidence from other developing contexts suggests that improved service visibility, participatory engagement, and accountability mechanisms can enhance voluntary compliance among informal operators (Brautigam et al., 2008; Joshi et al., 2014). For grains sellers, perceived value for money directly influences willingness to engage with formal taxation systems.

Despite extensive research on taxation in Nigeria, existing studies remain largely quantitative, focusing on revenue performance, tax productivity, and administrative efficiency (Adebisi & Gbegi, 2013; IMF, 2023). There is limited qualitative evidence capturing the lived experiences, perceptions, and behavioural reasoning of informal actors (Joshi et al., 2014; Prichard et al., 2019). Grains sellers, despite their strategic importance to food systems and market stability, remain underrepresented in empirical studies (FAO, 2021). This gap underscores the need for context-specific qualitative research capable of illuminating trust dynamics, enforcement encounters, meaning-making processes, and compliance motivations among informal grains

sellers. Such evidence is essential for informing inclusive tax policy design, strengthening state–informal sector relations, and supporting sustainable revenue mobilisation.

Therefore, based on the literature so far reviewed, this study draws on three complementary theoretical frameworks: Institutional Theory (North, 1990; Scott, 2014); Fiscal Exchange Theory (Moore, 2008; Timmons, 2005) and the Slippery Slope Framework (Kirchler et al., 2008). Institutional Theory explains how governance structures and regulatory frameworks shape compliance behaviour. Fiscal Exchange Theory highlights the importance of perceived reciprocity between taxpayers and the state. The Slippery Slope Framework integrates trust and enforcement, explaining how informal actors navigate the tension between coercion and voluntary compliance. Collectively, these theories guide the exploration of grains sellers' perceptions, trust in institutions, and compliance behaviour in the Nigerian context.

Methodology

This study uses a qualitative study approach to explore the perceptions and experiences of informal grains sellers regarding the new tax reform in Nigeria. Data from in-depth interviews and open-ended discussions provide rich insights into how the reform affects their business operations, compliance behaviour, and livelihoods.

Research Design

The study adopts a qualitative research design to explore the perceptions of informal grains sellers regarding Nigeria's tax reform. Qualitative research is particularly suited for understanding lived experiences, meaning-making processes, and contextual factors that influence behaviour (Ndlovu, & Schutte, 2023). Unlike quantitative study approaches, which focus on numerical measures of compliance, this study seeks to capture how informal grains sellers interpret tax reforms, evaluate fairness and transparency, and make decisions regarding compliance, providing in-depth insights into the socio-economic and institutional factors that shape their behaviour.

Research Approach

A phenomenological approach is employed to understand the subjective experiences of informal grains sellers in the context of tax reform. Creswell & Poth (2018) contend that phenomenology allows the researcher to explore informants' perceptions, beliefs, and attitudes without imposing predetermined categories, making it ideal for examining informal actors whose experiences are rarely represented in formal documentation. The approach aligns with the theoretical frameworks underpinning this study: Institutional Theory, Fiscal Exchange

Theory, and the Slippery Slope Framework, which emphasise the influence of institutional structures, trust, and perceived reciprocity on compliance behaviour.

Study Setting

The study was conducted in Katsina Central Market, a major urban market in Katsina State, which is a significant representative of informal grains trade activities in the state. The market hosts a large number of grains sellers involved in buying, selling, and distributing staple grains, including maize, millet, sorghum, and rice. This setting allows for direct access to informants with relevant experience and provides a realistic context for exploring perceptions of tax reforms and compliance behaviour.

Population, Sampling and Sampling Technique

The target population consists of 83 major informal grains sellers operating within Katsina Central Market. This population is chosen due to its economic significance, exposure to multiple taxation regimes, and strategic role in food distribution and market stability.

Qualitative research emphasises depth over breadth. A sample of 20–25 informants is deemed sufficient to achieve data saturation, where no new themes or insights emerge from additional interviews (Guest, Bunce, & Johnson, 2006).

The study adopted a combination of purposive and snowball sampling techniques. Purposive sampling was used to identify initial informants who were experienced informal grain sellers and market leaders with adequate knowledge of Nigeria's tax reform. Subsequently, snowball sampling was employed to recruit additional informants through referrals from initial informants (Johnson, 2014). This approach facilitated access to a wider network of informal grains sellers, enhanced trust, and ensured the inclusion of diverse perspectives within the market community. Selection criteria followed for the study include: minimum of 2 years of experience in grains trading; active participation in market transactions at the study site and awareness of taxation practices affecting their trade.

Data Collection Method

Primary Data: Semi-structured interview was the main method for collecting primary data. Semi-structured interview allows informants to express their perceptions freely while enabling the researcher to probe specific issues related to the research questions of the study.

Interviews were conducted face-to-face in locations convenient and comfortable for the informants, such as market stalls or quiet meeting areas. Each interview lasted 30–45 minutes

and was audio-recorded with informants' consent. Notes were taken to capture non-verbal cues and contextual observations.

Secondary Data: Secondary data was included in the study through: government tax reform reports (FIRS, 2023); policy briefs from OECD, IMF, and World Bank; previous research studies on informal taxation in Nigeria and developing countries. This will provide contextual grounding for interpreting the primary data.

Data Analysis

Qualitative data analysis entails carefully organising, coding, and interpreting informants' responses to uncover key themes and patterns, turning raw information into meaningful insights about experiences and perceptions. The analysis begins with demographic profile of the informants.

Profile of the Informants

The informants included 25 grains sellers (24 males, one female) aged 22–55 years, with trading experience ranging from 2 to 20 years. Being the study setting the capital of Katsina State; most informants combined Qur'anic education and western education. Specifically, nine had both Qur'anic and primary education, twelve had Qur'anic and secondary education, two only had Qur'anic education, while the remaining two had Qur'anic and tertiary qualifications. The trade commodities represented various grains, including maize, millet, sorghum, and rice, ensuring diverse perspectives across the informal grains market.

In line with ethical research practices and confidentiality requirements, each participant was given a unique identification code which corresponds with his age and qualification and the codes appears in the fifth column of the table. This system ensured anonymity while improving the organisation and tracking of the data throughout the analysis process.

Table I: Profile of the Informants

Informant Code	Age Group	Highest Qualification	Gender
CMM01	30-39 years	Secondary Education	Male
CMF02	41-50 years	Primary Education	Female
CMM03	20-29 years	Tertiary Education	Male
CMM04	30-39 years	Secondary Education	Male
CMM05	50+ years	Quranic Education only	Male
CMM06	20-29 years	Primary Education	Male

Informant Code	Age Group	Highest Qualification	Gender
CMM07	40-49 years	Secondary Education	Male
CMM08	30-39 years	Tertiary Education	Male
CMM09	20-29 years	Secondary Education	Male
CMM10	50+ years	Primary Education	Male
CMM11	30-39 years	Quranic Education only	Male
CMM12	40-49 years	Secondary Education	Male
CMM13	20-29 years	Tertiary Education	Male
CMM14	30-39 years	Primary Education	Male
CMM15	50+ years	Secondary Education	Male
CMM16	20-29 years	Quranic Education only	Male
CMM17	40-49 years	Tertiary Education	Male
CMM18	30-39 years	Secondary Education	Male
CMM19	20-29 years	Primary Education	Male
CMM20	50+ years	Tertiary Education	Male
CMM21	30-39 years	Secondary Education	Male
CMM22	40-49 years	Quranic Education only	Male
CMM23	20-29 years	Primary Education	Male
CMM24	30-39 years	Tertiary Education	Male
CMM25	50+ years	Secondary Education	Male

Source: Researchers' field work

Theme Development

The study explored the perceptions of informal grains sellers regarding Nigeria's tax reform, focusing on awareness, fairness, enforcement, trust, and compliance behaviour. Semi-structured interviews were conducted with 25 grains sellers operating in Katsina Central Market. Data were analysed using thematic analysis (Braun & Clarke, 2006), guided by the research questions and theoretical frameworks. Five major themes emerged, reflecting the lived experiences and perceptions of informants. Supporting verbatim quotes are included to illustrate findings.

Table I: Themes and Sub-Themes Development

S/No.	Themes	Sub-Themes
1.	Awareness and Understanding of Tax Reform	Limited awareness of tax objectives, Partial awareness and recognition of benefits
2.	Perceptions of Fairness, Transparency, and Administration	Perceived inequity and arbitrary levies, administrative challenges and inconsistency
3.	Enforcement Practices and Trust in Institutions	Coercive enforcement reducing trust, Conditional trust based on fairness
4.	Perceived Reciprocal Benefits and Service Delivery	Lack of visible benefits, Motivation from tangible improvements
5.	Compliance Behaviour and Adaptive Strategies	Partial compliance and avoidance strategies Collective negotiation and coping

The analytical process involves the parallel review of the central theme alongside its component sub-themes in order to generate a coherent interpretation of the data. The emergent first theme was ‘Awareness and Understanding of Tax Reform’. Many informants demonstrated limited awareness of Nigeria’s tax reform objectives. While some knew of government efforts to broaden the tax base, and few could articulate the specific policies or their implications. Most of them stressed that: *“I know they are trying to get everyone to pay taxes, but I don’t know how it affects me... sometimes they just come with new levies and we pay without explanation.”* (CMM09, CMM11, CMM14, CMF02 CMM17, CMM19).

On few occasions, some informants especially the ones with higher academic qualifications, however, were aware of the requirement to register with tax authorities and recognised potential long-term benefits as together, they stated that: *“We heard we should be registered to avoid problems with government... but the process is not clear.”* (CMM12). This suggests that there were awareness gaps that reflect weak communication and limited institutional engagement from the side of the government.

On the second theme, informants expressed concerns about multiple levies, arbitrary charges, and lack of transparency in tax collection. Many perceived the taxations as unfair, especially

when different traders paid varying amounts for similar operations. In their words: *“Some people pay less, some pay more. I don’t know who decides. It feels unfair.”* (CMM13, CMM14, CMM19, CMM20, CMF02). Some other informants highlighted administrative challenges, including cumbersome registration procedures and inconsistent enforcement by local authorities. *“Every month, market officials come and collect fees differently. Sometimes it’s not even documented.”* (CMM03, CMM12). These indicate that perceived inequity and weak administration reduce voluntary compliance.

Trust in government and tax authorities emerged as a critical determinant of compliance. Informants reported arbitrary enforcement and coercion by officials, which undermined trust. So many of them have this to say: *“sometimes they threaten us with closure if we don’t pay. This makes me hate the system and want to avoid them.”* (CMM05, CMM07, CMM08, CMM11, CMM14, CMF02, CMM10, CMM23). Conversely, some informants expressed conditional trust when authorities demonstrated fairness or consistency: *“If they collect taxes properly and give us market facilities, I will pay willingly.”* (CMM20, CMM18, CMM03, CMM12). This highlights the interplay of enforcement power and institutional trust in shaping compliance behaviour.

On theme four perceived reciprocal benefits and service delivery, informants frequently linked willingness to comply with the perceived benefits of taxation. Many felt that taxes did not translate into better market infrastructure, security, or services. *“We pay every month, but the market is still dirty and unsafe. Where is our money going?”* (CMM06, CMM07, CMM08, CMM09)

Despite these assertions, a few informants indicated that visible improvements, such as clean facilities or regulated trade practices, could motivate compliance. *“When I noticed they repaired some sheds and installed lights, I felt paying taxes was meaningful.”* (CMM20, CMM18, CMM25, CMM13, CM16). This indicates that emphasising reciprocal benefits serves as a driver of voluntary compliance.

On the final theme, compliance behaviour and adaptive strategies, many of the Informants described mixed compliance behaviour. While some paid taxes consistently, others adopted avoidance strategies, such as underreporting sales or bypassing official registration, to cope with perceived unfairness. Many of them responded this way: *“I pay only when they come to threaten me. Otherwise, I try to avoid extra fees.”* (CMM07, CMM08, CMM13, CM16)

Similarly, adaptive strategies also included collective negotiation with market associations to reduce levies or contest arbitrary charges. Some of the informants contends that: *“We meet and decide together how much each person pays... to avoid being cheated by officials.”* (CMM18,

CMF02 CMM17, CMM19). This indicates that compliance behaviour is influenced by perceptions of fairness, trust, and benefits, demonstrating the interaction of all three theoretical frameworks in the context of informal grains sellers.

Discussion of Findings

The study explored the perceptions of informal grains sellers regarding Nigeria's tax reform, focusing on awareness, fairness, enforcement, trust, reciprocal benefits, and compliance behaviour. The findings are discussed in relation to existing literature and the theoretical frameworks.

The findings indicate that most grains sellers had limited awareness of the objectives and procedures of Nigeria's tax reform, with only a few recognising potential benefits. This aligns with previous research indicating that informal sector operators often have low knowledge of tax policies due to weak institutional communication and engagement (Prichard et al., 2019; OECD, 2022). According to Institutional Theory (North, 1990; Scott, 2014), the structure and effectiveness of institutions significantly influence actors' understanding and engagement with formal systems. The limited awareness observed in this study underscores the need for improved information dissemination, education, and participatory mechanisms for informal actors.

Informants perceived taxation as inequitable, inconsistent, and poorly administered, echoing findings from Joshi et al. (2014). The perception that some traders paid more than others or experienced arbitrary fees reflects a weak administrative framework. This supports the Fiscal Exchange Theory, which posits that perceived fairness and transparency are critical determinants of voluntary compliance (Timmons, 2005; Moore, 2008). When taxes are viewed as unfair or extractive, willingness to comply diminishes, which was evident among the grains sellers.

Trust in authorities emerged as conditional and fragile. Coercive or inconsistent enforcement practices undermined trust, while fairness and consistency fostered conditional compliance. This aligns with the Slippery Slope Framework, which emphasises that tax compliance is influenced by the balance between trust in authorities and the power of enforcement (Kirchler et al., 2008). The study confirms that both enforcement and trust are critical: coercion alone may generate compliance under duress, but long-term voluntary compliance requires institutional legitimacy.

The study highlighted that informants' willingness to comply was heavily influenced by perceived benefits of taxation, such as improved market infrastructure and security. Where tangible benefits were absent, taxation was seen as extractive. This finding reinforces Fiscal

Exchange Theory, which emphasises reciprocal relationships between taxpayers and the state (Timmons, 2005; Moore, 2008). Providing visible improvements in public goods and services is therefore essential to enhance voluntary compliance.

Grains sellers exhibited mixed compliance behaviours, combining partial compliance, avoidance strategies, and collective negotiation. These adaptive strategies are consistent with prior studies indicating that informal actors develop coping mechanisms to navigate inequitable or complex taxation systems (Fjeldstad & Heggstad, 2012; Joshi et al., 2014). This underscores that policy design must consider the informal sector's socio-economic realities to avoid unintended consequences, such as entrenched informality or reduced revenue mobilisation.

Conclusion

This study provides qualitative insights into the perceptions of informal grains sellers regarding Nigeria's tax reform. Main conclusions include: Limited awareness and understanding of tax reform objectives among grains sellers constrain effective participation in the formal tax system. Perceived inequity, arbitrary levies, and poor administration undermine trust and willingness to comply voluntarily. Trust in institutions is conditional, depending on fairness, consistency, and enforcement practices. Perceived reciprocal benefits, such as improved market facilities, directly influence compliance motivation. Informal grains sellers employ adaptive strategies, including partial compliance and collective negotiation, to navigate taxation challenges. The study confirms that successful integration of informal sector actors into the tax system requires attention to awareness, fairness, trust, service delivery, and socio-economic realities.

Recommendations

Based on the findings, the following recommendations are proposed:

- i) Enhance communication and awareness campaigns targeted at informal grains sellers, using local languages and participatory platforms to explain tax reform objectives and procedures.
- ii) Standardize and simplify tax administration to reduce multiple levies and ensure consistency across markets, minimizing perceptions of inequity.
- iii) Strengthen institutional trust by ensuring transparency, accountability, and fairness in tax enforcement. Authorities should combine coercion with education and engagement to foster long-term voluntary compliance.

- iv) Provide tangible reciprocal benefits, including improved market infrastructure, security, and services, to demonstrate the value of taxation and reinforce the fiscal contract.
- v) Engage market associations and cooperatives in policy design and implementation, leveraging collective negotiation mechanisms to reduce resistance and facilitate compliance.

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CONCEPTUAL REVIEW OF CEO CHARACTERISTICS AND ENTERPRISE RISK
MANAGEMENT (ERM) EFFECTIVENESS IN MANUFACTURING FIRMS

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Abstract

This conceptual paper examines the influence of Chief Executive Officer (CEO) characteristics on the effectiveness of Enterprise Risk Management (ERM) in manufacturing firms. Drawing on Upper Echelons Theory and Agency Theory, the study argues that CEOs' demographic and professional attributes shape managerial cognition, risk perception, and strategic decision-making, thereby influencing the design and implementation of ERM systems. Specifically, the paper focuses on CEO gender, educational background, tenure, and industry experience as key determinants of ERM effectiveness. Through a comprehensive synthesis of extant theoretical and empirical literature, the study develops a structured conceptual framework illustrating the direct relationships between CEO characteristics and ERM effectiveness, while highlighting the moderating role of firm size, ownership structure, and regulatory environment. The paper contributes to corporate governance and risk management literature by providing a theory-driven model tailored to manufacturing firms in emerging markets such as Nigeria, where executive discretion is relatively high and institutional constraints are evolving. The study offers a foundation for future empirical research and practical insights for boards, regulators, and policymakers seeking to strengthen risk governance.

Keywords: CEO Characteristics; Enterprise Risk Management; ERM Effectiveness; Corporate Governance; Upper Echelons Theory; Emerging Markets

1. Introduction

The contemporary business environment is characterized by heightened uncertainty, rapid technological change, regulatory complexity, and global economic volatility. These dynamics have amplified the exposure of firms particularly manufacturing firms to a wide spectrum of risks, including operational disruptions, supply chain instability, financial volatility, environmental hazards, and compliance failures (Hoyt & Liebenberg, 2011). In response to

these challenges, organizations have increasingly embraced Enterprise Risk Management (ERM) as an integrated and holistic approach to identifying, assessing, managing, and monitoring risks across the enterprise (COSO, 2017). Recent literature highlights that ERM has evolved from a primarily compliance-oriented tool into a strategic governance mechanism that strengthens organizational resilience and value creation across diverse sectors, contingent upon firm characteristics and governance structures (Adhillah et al., 2025).

ERM differs fundamentally from traditional silo-based risk management by emphasizing enterprise-wide coordination, strategic alignment, and continuous risk oversight. Effective ERM implementation has been associated with improved firm performance, enhanced decision-making quality, reduced earnings volatility, and stronger corporate resilience (Gordon, Loeb, & Tseng, 2009; McShane, Nair, & Rustambekov, 2011). However, despite its potential benefits, ERM effectiveness varies significantly across firms, even within the same industry and regulatory environment, and is influenced by firm size, ownership structure, and industry context (Adhillah et al., 2025). This variation has prompted scholars to investigate the organizational and governance factors that influence ERM adoption and performance.

Among these factors, executive leadership particularly the role of the Chief Executive Officer (CEO) has emerged as a critical determinant of ERM effectiveness. The CEO occupies a central position in shaping organizational strategy, risk appetite, governance structures, and corporate culture. As the ultimate decision-maker, the CEO influences whether ERM is adopted symbolically or substantively, whether risk information is integrated into strategic planning, and whether risk governance mechanisms are adequately resourced and enforced (Beasley, Clune, & Hermanson, 2005).

In manufacturing firms, the importance of effective risk management is even more pronounced. Manufacturing operations involve capital-intensive investments, complex production processes, supply chain interdependencies, and exposure to commodity price volatility and regulatory standards. Weak risk management in this sector can result in production stoppages, cost overruns, environmental liabilities, and reputational damage. Consequently, understanding how CEO characteristics shape ERM effectiveness is particularly relevant for manufacturing firms, especially in emerging economies such as Nigeria, where institutional frameworks may be less robust and executive discretion is relatively high.

Despite growing interest in ERM, the literature remains fragmented regarding the role of CEO characteristics in shaping risk management outcomes. Most studies focus on board-level governance mechanisms or firm-level attributes, with relatively limited attention to the personal and professional traits of top executives. This conceptual paper seeks to address this

gap by synthesizing existing literature and developing a theoretical framework that explains how CEO characteristics influence ERM effectiveness in manufacturing firms.

2. Conceptualizing Enterprise Risk Management Effectiveness

2.1 Enterprise Risk Management: An Overview

Enterprise Risk Management refers to a structured, consistent, and continuous process applied across the organization to identify, assess, manage, and monitor risks that may affect the achievement of organizational objectives (COSO, 2017). ERM encompasses strategic, operational, financial, and compliance risks and emphasizes alignment between risk management and corporate strategy.

Unlike traditional risk management approaches that treat risks in isolation, ERM adopts a portfolio perspective, recognizing interdependencies among risks and enabling firms to optimize their overall risk profile. The COSO ERM framework highlights key components such as governance and culture, strategy and objective-setting, risk identification and assessment, risk response, and performance monitoring.

2.2 Defining ERM Effectiveness

ERM effectiveness refers to the extent to which risk management practices achieve their intended objectives, including improved risk identification, enhanced decision-making, reduced downside exposure, and strengthened organizational resilience (Gordon et al., 2009). Effective ERM goes beyond the mere establishment of formal risk management structures; it requires the meaningful integration of risk management processes into strategic planning, operational activities, and organizational culture. In other words, ERM is considered effective when risk considerations are embedded in everyday decision-making and aligned with the firm's broader strategic objectives.

The literature identifies several indicators of ERM effectiveness. These include the degree of risk awareness and the strength of risk culture within the organization, the integration of risk considerations into strategic planning and capital allocation decisions, and the quality and transparency of risk reporting and communication mechanisms. Additional indicators involve the effectiveness of risk mitigation and internal control systems, as well as the consistency between the organization's stated risk appetite and its actual business practices. Collectively, these dimensions reflect the extent to which ERM functions as a dynamic and value-enhancing governance mechanism rather than a symbolic compliance tool.

The effectiveness of ERM is shaped by both structural and behavioral factors. Structural elements such as risk committees, internal control systems, and formal governance frameworks provide the institutional foundation for risk oversight. However, behavioral factors particularly

leadership commitment, managerial judgment, and executive engagement play an equally critical role in determining whether ERM systems operate substantively and achieve their intended outcomes.

2.3 CONCEPTUAL FRAMEWORK

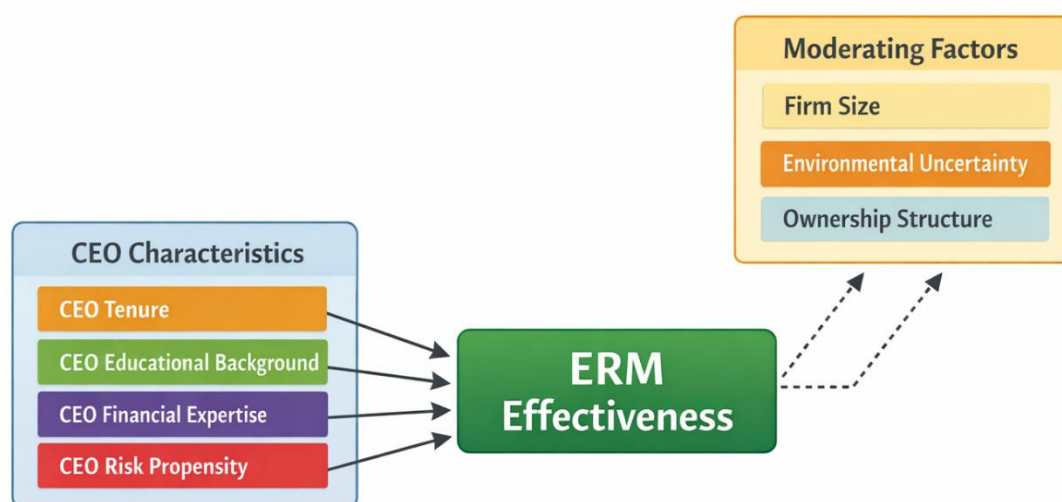


Figure 1 illustrates the proposed relationships between CEO characteristics and ERM effectiveness in manufacturing firms. The model suggests that CEO gender, educational background, tenure, and industry experience directly influence ERM effectiveness, while firm size, ownership structure, and regulatory environment may moderate these relationships.

3. Theoretical Foundations

3.1 Methodology

This study adopts a structured narrative literature review approach to synthesize existing theoretical and empirical research on CEO characteristics and Enterprise Risk Management (ERM) effectiveness. As a conceptual paper, the objective is not to test hypotheses empirically but to integrate and critically analyze prior scholarship in order to develop a coherent theoretical framework.

Relevant literature was identified through systematic searches in major academic databases, including Scopus, Web of Science, ScienceDirect, JSTOR, and Google Scholar. The search process was guided by keywords such as “CEO characteristics,” “executive attributes,” “enterprise risk management,” “ERM effectiveness,” “corporate governance,” “upper echelons theory,” and “agency theory.” Priority was given to peer-reviewed journal articles, foundational theoretical works, and empirical studies published in reputable accounting, finance, and management outlets.

To enhance rigor, the review emphasized studies examining executive-level determinants of governance quality and risk-related outcomes, with particular attention to research relevant to manufacturing firms and emerging market contexts. The selected studies were critically evaluated to identify dominant themes, theoretical linkages, contextual nuances, and areas of inconsistency. Insights derived from this synthesis form the foundation for the proposed conceptual framework linking CEO characteristics to ERM effectiveness.

3.2 Upper Echelons Theory

Upper Echelons Theory posits that organizational outcomes are partially predicted by the characteristics of top executives, as these characteristics shape how executives interpret information and make strategic decisions (Hambrick & Mason, 1984). According to this theory, executives' demographic attributes serve as proxies for their cognitive bases, values, and experiences.

In the context of ERM, Upper Echelons Theory suggests that CEOs' personal and professional attributes influence their perception of risk, tolerance for uncertainty, and commitment to structured risk management systems. For instance, CEOs with strong analytical backgrounds may be more inclined to support formal risk assessment tools, while those with extensive industry experience may better anticipate sector-specific risks.

3.3 Agency Theory

Agency Theory examines the relationship between principals (shareholders) and agents (managers) and highlights the potential for conflicts of interest arising from divergent goals and information asymmetry (Jensen & Meckling, 1976). Risk management plays a critical role in mitigating agency problems by aligning managerial actions with shareholders' risk preferences.

From an agency perspective, CEO characteristics influence the extent to which managers act in shareholders' interests when making risk-related decisions. For example, entrenched CEOs may avoid transparent ERM systems to conceal risk-taking behavior, whereas well-monitored and professionally competent CEOs may support robust ERM frameworks to signal accountability and reduce agency costs.

4. CEO Characteristics and ERM Effectiveness

4.1 CEO Gender

Gender diversity in executive leadership has been associated with differences in risk attitudes and decision-making styles. Prior research suggests that female executives tend to exhibit greater risk aversion, ethical sensitivity, and compliance orientation compared to their male counterparts (Faccio, Marchica, & Mura, 2016). These attributes may translate into stronger

support for formal risk governance mechanisms, enhanced oversight structures, and more disciplined ERM implementation. In manufacturing firms, where operational, environmental, and safety risks are substantial, such orientations may strengthen precautionary decision-making and reinforce a culture of accountability and regulatory compliance.

However, the relationship between CEO gender and ERM effectiveness is not unequivocally positive. Some studies suggest that excessive risk aversion may limit strategic flexibility or constrain value-enhancing risk-taking, particularly in competitive industries where innovation and calculated risk exposure are necessary. Moreover, the influence of gender may be shaped by contextual and institutional factors. In emerging markets such as Nigeria, where female representation in executive leadership remains relatively limited, structural barriers, cultural norms, and tokenism effects may moderate the extent to which female CEOs can meaningfully influence governance structures. Additionally, organizational culture and board dynamics may either amplify or constrain the behavioral tendencies associated with gender. Consequently, while CEO gender may enhance ERM effectiveness through improved risk sensitivity and ethical oversight, its impact is likely contingent upon institutional support, governance maturity, and firm-specific conditions.

4.2 CEO Educational Background

CEO educational background reflects cognitive capacity, analytical sophistication, and openness to innovative management practices. Empirical evidence indicates that CEOs with higher educational attainment, particularly in business, finance, engineering, or economics, are more likely to adopt sophisticated governance mechanisms and structured risk management systems, including ERM (Baxter, Bedard, Hoitash, & Yezegel, 2013). Such educational exposure may enhance the ability to interpret complex risk models, evaluate trade-offs between risk and return, and appreciate the strategic integration of risk considerations into corporate planning. In manufacturing firms, technical or engineering expertise may further strengthen the capacity to manage operational and technological risks effectively.

Nevertheless, the effect of education on ERM effectiveness may not be uniformly positive. Higher education does not automatically translate into prudent risk governance; highly educated CEOs may also exhibit overconfidence in their analytical capabilities, potentially leading to excessive reliance on quantitative models or underestimation of qualitative risk factors. Furthermore, the relevance of educational background may depend on alignment with industry-specific risk profiles. For instance, a finance-oriented CEO may prioritize financial risk controls, while underemphasizing operational or environmental risks central to manufacturing firms. In emerging market contexts characterized by institutional volatility and

regulatory uncertainty, experiential knowledge and adaptive capabilities may, in some cases, be as critical as formal education. Thus, while educational attainment is likely to enhance ERM sophistication, its effectiveness may depend on contextual alignment and complementary governance structures.

4.3 CEO Tenure

CEO tenure represents the duration of service in the top executive position and reflects accumulated firm-specific knowledge, relational capital, and organizational familiarity. Longer tenure may enhance ERM effectiveness by enabling CEOs to develop deeper insights into internal processes, stakeholder expectations, and risk exposure patterns. Experienced CEOs may be better positioned to anticipate emerging threats, align risk management systems with long-term strategy, and cultivate stable governance practices. Such continuity may be particularly valuable in manufacturing firms where operational complexity and capital intensity require sustained strategic oversight.

However, the benefits of tenure may diminish beyond a certain threshold. Excessive tenure has been associated with managerial entrenchment, overconfidence, and resistance to organizational change (Miller, 1991). Entrenched CEOs may become less responsive to environmental shifts, underestimate emerging risks, or resist the adoption of updated ERM frameworks, especially when such changes threaten established power structures. Moreover, in emerging markets where executive discretion is relatively high and monitoring mechanisms may be weaker, prolonged tenure could exacerbate agency concerns and reduce transparency in risk reporting. These competing dynamics suggest a nonlinear relationship between CEO tenure and ERM effectiveness, where moderate tenure enhances risk governance through accumulated experience, while excessive tenure may impair adaptability and objective risk oversight.

4.4 CEO Industry Experience

CEO industry experience equips executives with contextual understanding of sector-specific risks, regulatory frameworks, competitive dynamics, and operational vulnerabilities. In manufacturing firms, extensive industry experience may improve recognition of supply chain disruptions, technological obsolescence, commodity price volatility, and compliance requirements. Such contextual expertise enhances strategic foresight and may facilitate the alignment of ERM practices with operational realities. Empirical studies suggest that industry-experienced CEOs are more capable of aligning governance mechanisms with firm strategy, thereby strengthening organizational performance and risk oversight (Datta & Rajagopalan, 1998).

Nonetheless, industry experience may also generate cognitive rigidity. Deep immersion in a single sector can foster path dependence and reliance on prior success formulas, potentially limiting openness to innovative risk management approaches. Experienced CEOs may underestimate novel or disruptive risks that fall outside their historical experience, particularly in rapidly evolving technological environments. Additionally, in emerging markets characterized by institutional instability, industry familiarity may not fully compensate for broader macroeconomic or regulatory uncertainty. Therefore, while industry experience generally enhances the effectiveness of ERM through improved contextual awareness, its impact may depend on adaptability, learning orientation, and the evolving risk landscape.

5. CEO Characteristics, Risk Culture, and Governance

Risk culture refers to the shared values, beliefs, and behaviors related to risk within an organization. The CEO plays a pivotal role in shaping risk culture through leadership style, communication, and example. CEOs who prioritize transparency, accountability, and learning from failure are more likely to foster a positive risk culture that supports effective ERM.

CEO characteristics influence how risk culture evolves. For instance, risk-averse CEOs may promote conservative risk-taking, while analytically oriented CEOs may encourage data-driven risk assessment. In manufacturing firms, where safety and quality are paramount, CEO-driven risk culture is essential for embedding ERM into daily operations.

6. ERM in Manufacturing Firms in Emerging Markets

Manufacturing firms in emerging markets face unique risk challenges, including weak regulatory enforcement, infrastructure constraints, political instability, and limited access to capital. In such contexts, the discretion of top executives is amplified, making CEO characteristics particularly influential in shaping risk management outcomes.

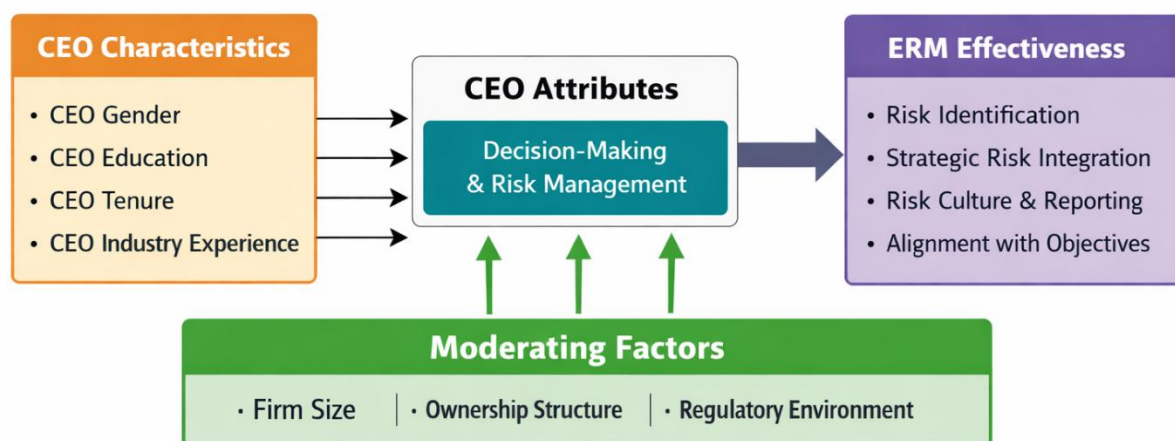
In Nigeria, manufacturing firms operate in an environment characterized by regulatory uncertainty, foreign exchange volatility, and supply chain disruptions. Effective ERM is critical for navigating these challenges, yet its success depends heavily on executive leadership and governance quality. CEOs with strong professional competence and ethical orientation can leverage ERM to enhance resilience and investor confidence.

7. Conceptual Framework

Based on the reviewed literature and theoretical perspectives, this paper develops a conceptual framework linking CEO characteristics to Enterprise Risk Management (ERM) effectiveness in manufacturing firms. The framework integrates insights from Upper Echelons Theory and Agency Theory to explain how executive attributes shape risk perception, governance orientation, and strategic decision-making.

Specifically, the framework suggests that CEO gender may influence ERM effectiveness through differences in risk attitudes, ethical orientation, and compliance sensitivity. CEO educational background is expected to affect the sophistication and integration of ERM systems by shaping analytical capacity and openness to structured governance mechanisms. CEO tenure is conceptualized as having a nonlinear influence on ERM effectiveness, whereby moderate tenure enhances firm-specific knowledge and strategic continuity, while excessive tenure may lead to entrenchment and reduced adaptability. Furthermore, CEO industry experience is expected to strengthen ERM effectiveness by improving contextual understanding of sector-specific risks and operational vulnerabilities.

The framework also recognizes that these relationships are unlikely to operate uniformly across all firms. Instead, contextual factors such as firm size, ownership structure, and regulatory environment may moderate the strength and direction of the associations between CEO characteristics and ERM effectiveness, particularly within emerging market contexts such as Nigeria.



8. Implications for Research and Practice

This conceptual review offers important implications for researchers, practitioners, and policymakers, particularly within manufacturing firms operating in emerging markets such as Nigeria. For researchers, the proposed framework highlights the need for empirical

investigation into CEO-level determinants of ERM effectiveness using firm-level data from developing economies, where institutional constraints and governance dynamics differ from those of advanced markets. Future studies may explore nonlinear effects, interaction terms, and moderating variables such as regulatory enforcement intensity, board independence, or ownership concentration to further refine the proposed relationships.

For practitioners, particularly boards of directors and nomination committees within Nigerian manufacturing firms, the findings underscore the strategic importance of executive selection criteria. When appointing CEOs, boards should consider not only operational competence but also attributes such as educational background, industry experience, and tenure structure, which may directly influence the sophistication and integration of ERM systems. For example, firms operating in sectors with high exposure to supply chain disruptions or foreign exchange volatility may benefit from CEOs with strong analytical or finance backgrounds capable of integrating risk considerations into capital budgeting and strategic planning decisions.

Additionally, manufacturing firms in Nigeria often face infrastructure instability, regulatory unpredictability, and currency fluctuations. In such environments, CEO commitment to transparent risk reporting and proactive mitigation strategies becomes critical. Boards may therefore consider establishing formal risk oversight mechanisms, including risk committees and performance metrics tied to ERM effectiveness, to ensure executive accountability in managing enterprise-wide risks.

From a policy perspective, regulators and standard-setting bodies such as financial reporting and corporate governance authorities in Nigeria may enhance ERM effectiveness by strengthening disclosure requirements and encouraging executive-level accountability for risk oversight. Regulatory frameworks that promote transparency in risk reporting and executive responsibility can reduce agency conflicts and reinforce governance quality across the manufacturing sector.

Overall, by linking executive characteristics to ERM effectiveness within the specific context of manufacturing firms in emerging markets, this study provides actionable insights for improving risk governance, enhancing organizational resilience, and strengthening long-term competitiveness in volatile institutional environments.

9. Conclusion

This paper provides a comprehensive conceptual review of how CEO characteristics influence the effectiveness of enterprise risk management in manufacturing firms. Drawing on Upper Echelons Theory and Agency Theory, the study demonstrates that CEOs' gender, education, tenure, and industry experience shape risk perception, strategic judgment, and commitment to

ERM. By developing a conceptual framework tailored to manufacturing firms in emerging markets, the paper contributes to corporate governance and risk management literature and provides a foundation for future empirical research.

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FIRM SIZE AS A THEORETICAL MODERATOR IN THE CEO ATTRIBUTES–
RISK MANAGEMENT RELATIONSHIP: A CONCEPTUAL FRAMEWORK FOR
LISTED MANUFACTURING FIRMS

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Abstract

This conceptual paper explores the moderating role of firm size in the relationship between CEO attributes and risk management effectiveness in listed manufacturing firms. Although CEO characteristics such as gender, education, tenure, and experience are widely recognized as influential factors in strategic decision-making, their impact on risk management may vary across organizations due to differences in organizational scale. Using insights from Contingency Theory, Upper Echelons Theory, and Resource-Based View, the paper argues that firm size determines the level of resources, governance sophistication, and structural complexity available for enterprise risk management (ERM) implementation. Large firms often possess stronger internal controls, dedicated risk committees, advanced analytics, and formalized risk frameworks, which may reduce dependence on CEO discretion. Conversely, smaller firms typically rely heavily on CEO judgement, intuition, and personal expertise due to limited institutional risk infrastructure. Therefore, firm size can either strengthen or weaken the influence of CEO attributes on risk management outcomes. This paper synthesizes existing literature and develops a conceptual framework showing how firm size interacts with CEO features to shape risk culture, risk controls, and risk mitigation strategies in manufacturing firms. The paper provides theoretical clarity for future empirical research and offers practical insights for boards and regulators seeking to improve risk governance.

Keywords: firm size; CEO features; moderating effect; risk governance; enterprise risk management; manufacturing sector.

1. Introduction

Risk management has become a central concern for modern corporations, particularly in environments characterized by uncertainty, volatility, and heightened stakeholder scrutiny. In manufacturing firms, exposure to strategic, operational, financial, and compliance risks is often

amplified due to capital intensity, complex supply chains, and fluctuating market conditions. As a result, the effectiveness of corporate risk management systems is increasingly linked to top executive decision-making, especially the attributes of the Chief Executive Officer (CEO). Contemporary governance research suggests that CEOs play a decisive role in shaping organizational risk posture through their personal characteristics, experiences, and cognitive orientations (Hambrick & Mason, 1984; Hambrick, 2007).

However, firms differ significantly in their structural and resource capacities, and these differences may influence how CEO attributes translate into risk management outcomes. Firm size, in particular, has been identified as a critical organizational characteristic that affects governance structures, internal controls, and managerial discretion (Donaldson, 2001; Chenhall, 2003). Despite growing interest in CEO attributes and risk management, limited attention has been paid to the moderating role of firm size in this relationship, especially within the context of listed manufacturing firms in emerging economies. This study addresses this gap by developing a conceptual framework that positions firm size as a theoretical moderator in the CEO attributes–risk management relationship.

The increasing frequency of corporate failures and financial scandals has heightened global concern about the adequacy of risk management practices within organizations. High-profile corporate collapses such as Enron and WorldCom underscored the consequences of weak executive oversight and ineffective risk governance, leading to renewed emphasis on enterprise risk management (ERM) frameworks (COSO, 2017). ERM emphasizes a holistic approach to identifying, assessing, and managing risks across the organization, with top management playing a pivotal role in its implementation.

The Upper Echelons Theory posits that organizational outcomes reflect the values, experiences, and cognitive bases of top executives (Hambrick & Mason, 1984). Empirical studies have shown that CEO attributes such as gender, educational background, tenure, and professional experience significantly influence strategic choices, including risk-taking behavior (Barker & Mueller, 2002; Faccio, Marchica, & Mura, 2016). For instance, CEOs with longer tenure may exhibit greater risk aversion due to career concerns, while those with diverse professional experience may adopt more sophisticated risk management approaches.

Nevertheless, the impact of CEO attributes does not occur in a vacuum. Contingency Theory argues that organizational effectiveness depends on the fit between managerial practices and contextual factors such as firm size, technology, and environmental uncertainty (Donaldson, 2001). Larger firms typically possess more formalized structures, advanced control systems, and greater access to risk management resources, which may strengthen or weaken the

influence of CEO attributes on risk management effectiveness (Chenhall, 2003). This suggests that firm size may condition the extent to which CEO characteristics affect risk management outcomes, particularly in manufacturing firms where operational complexity varies significantly with scale.

Despite extensive literature on CEO attributes and corporate risk-taking, existing studies have produced mixed and sometimes inconclusive findings regarding their influence on risk management effectiveness (Serfling, 2014; Bernile, Bhagwat, & Rau, 2017). One possible explanation for these inconsistencies is the failure to adequately account for organizational contextual factors that shape executive influence. In particular, firm size has often been treated as a control variable rather than examined as a theoretically meaningful moderator.

In listed manufacturing firms, differences in firm size may significantly alter governance structures, internal control systems, and risk management sophistication. Smaller firms may rely heavily on CEO discretion due to less formalized systems, while larger firms may dilute individual executive influence through bureaucratic controls and board oversight (Fama & Jensen, 1983). However, empirical and conceptual research explicitly linking firm size to the CEO attributes–risk management relationship remains scarce, especially in emerging market contexts. This gap limits theoretical advancement and constrains practical understanding of how executive characteristics interact with organizational scale to shape risk management effectiveness.

This study contributes to theory by extending Upper Echelons Theory through the incorporation of firm size as a contextual moderator, thereby responding to calls for more contingency-based executive research (Hambrick, 2007). By integrating Contingency Theory, the study provides a richer explanation of how organizational context shapes executive influence on risk management.

From a practical perspective, the findings offer valuable insights for boards of directors, regulators, and policymakers on the importance of aligning executive selection and governance structures with firm characteristics. Understanding how firm size conditions CEO influence can assist organizations in designing more effective risk management frameworks tailored to their scale and complexity. For investors and regulators, the study highlights the need to consider firm size when evaluating executive effectiveness and risk governance quality in listed manufacturing firms.

2. Literature Review

2.1 Conceptual Foundations

CEO Attributes

CEO attributes refer to the observable demographic, educational, and experiential characteristics of a firm's chief executive that shape cognitive frames, strategic preferences, and decision-making behavior. According to Upper Echelons Theory, organizational outcomes reflect the values and experiences of top executives because these attributes influence how managers interpret information and respond to strategic challenges (Hambrick & Mason, 1984; Hambrick, 2007). In the context of risk management, CEO attributes influence attitudes toward uncertainty, governance structures, and organizational control systems.

CEO Gender

CEO gender has attracted considerable scholarly attention due to its potential influence on corporate governance and risk behavior. Behavioral research suggests that female executives tend to exhibit greater risk aversion and stronger compliance with rules and controls compared to male executives (Croson & Gneezy, 2009). Empirical corporate studies also show that firms led by female CEOs often demonstrate lower leverage levels and more conservative financial policies (Faccio, Marchica, & Mura, 2016). Consequently, gender differences in leadership may influence how organizations approach enterprise risk management (ERM).

CEO Educational Background

Educational background reflects the level and field of formal training acquired by executives. Higher levels of education are often associated with stronger analytical capabilities, openness to innovation, and strategic sophistication (Wiersema & Bantel, 1992). CEOs with educational backgrounds in finance, accounting, or engineering may be more likely to adopt structured risk assessment techniques and formal risk management systems.

CEO Tenure

CEO tenure refers to the length of time an individual has served as chief executive within an organization. Longer tenure may enhance firm-specific knowledge and managerial expertise, enabling executives to better understand organizational risks (Hambrick, Geletkanycz, & Fredrickson, 1993). However, extended tenure may also lead to managerial entrenchment and strategic rigidity, potentially reducing responsiveness to emerging risks (Serfling, 2014).

CEO Professional Experience

Professional experience represents the accumulation of managerial roles, industry exposure, and functional expertise acquired throughout an executive's career. CEOs with diverse experience are more likely to possess broad cognitive frameworks and adaptive decision-making capabilities (Custódio, Ferreira, & Matos, 2013). Such experience can improve the ability of executives to identify and respond effectively to organizational risks.

Risk Management Effectiveness

Risk management refers to the systematic process of identifying, assessing, and mitigating risks that may threaten organizational objectives. Manufacturing firms face numerous operational, financial, and strategic risks due to complex production systems, global supply chains, and technological uncertainty (COSO, 2017).

Risk management effectiveness can be understood through three primary dimensions:

Risk Identification involves recognizing potential internal and external events that may affect firm performance. Effective identification requires strong information systems and communication channels across organizational units (Arena, Arnaboldi, & Azzone, 2010).

Risk Assessment refers to evaluating the likelihood and potential impact of identified risks. Techniques such as scenario analysis, sensitivity analysis, and risk matrices are commonly used to prioritize risk exposures.

Risk Mitigation and Control involves implementing strategies to reduce or manage risks. These strategies may include internal controls, diversification, insurance mechanisms, and contingency planning (Gordon, Loeb, & Tseng, 2009).

Firm Size

Firm size represents the scale of an organization's operations and resources and is commonly measured using indicators such as total assets, total sales, market capitalization, or number of employees (Dang, Li, & Yang, 2018). Firm size influences governance structures, resource availability, and managerial discretion.

In manufacturing firms, larger organizations typically possess more sophisticated internal control systems, advanced technologies, and specialized risk management units. These capabilities enable them to implement more structured ERM frameworks. Conversely, smaller firms may rely more heavily on executive judgment due to limited institutional risk infrastructure (Chenhall, 2003).

2.2 Empirical Evidence on CEO Attributes and Risk Management

Empirical studies have consistently highlighted the influence of executive characteristics on corporate risk behavior and governance outcomes. Research indicates that CEO gender affects corporate risk-taking behavior, with female CEOs generally demonstrating more conservative financial policies and stronger compliance with regulatory frameworks (Faccio et al., 2016).

Educational background has also been associated with the adoption of advanced managerial practices and risk management systems. Highly educated CEOs tend to demonstrate greater openness to analytical decision-making and structured governance processes (Barker & Mueller, 2002).

Similarly, CEO tenure has been linked to variations in risk preferences and strategic decision-making. While experienced CEOs may benefit from accumulated organizational knowledge, longer tenure may also encourage conservative strategies aimed at protecting personal reputation and career stability (Serfling, 2014).

Professional experience further enhances executives' ability to interpret complex organizational environments and coordinate responses to emerging risks (Custódio et al., 2013). These studies collectively suggest that CEO attributes play a significant role in shaping risk management practices within organizations.

2.3 Firm Size and Risk Management Practices

Firm size has been widely recognized as a key determinant of organizational governance and risk management sophistication. Larger firms generally possess more formalized control systems, specialized managerial roles, and greater financial resources, which support the implementation of comprehensive ERM frameworks (Chenhall, 2003; Gordon et al., 2009).

Empirical research also suggests that as firms grow in size, bureaucratic structures and governance mechanisms may limit the direct influence of individual executives on strategic decisions (Fama & Jensen, 1983). In contrast, smaller firms often rely more heavily on the judgment and discretion of top executives due to less formalized governance structures.

These differences indicate that firm size may influence how CEO attributes translate into organizational outcomes.

2.4 Firm Size as a Moderating Variable

Although prior studies have examined the influence of CEO attributes on corporate risk behavior, firm size has often been treated merely as a control variable rather than a theoretically meaningful moderator. However, contingency-based perspectives suggest that organizational context conditions the effectiveness of managerial actions (Donaldson, 2001).

In smaller firms, the absence of formalized governance structures may amplify the influence of CEO characteristics on risk management decisions. Conversely, in larger firms, established control systems and specialized risk management units may reduce the direct impact of executive attributes on risk governance.

Therefore, this study proposes that firm size moderates the relationship between CEO attributes and risk management effectiveness in manufacturing firms.

3. Theoretical Framework

This study is grounded in Upper Echelons Theory and Contingency Theory to explain how CEO attributes influence risk management effectiveness and how this relationship varies with firm size.

3.1 Upper Echelons Theory

Upper Echelons Theory posits that organizational outcomes reflect the characteristics, experiences, and cognitive orientations of top executives (Hambrick & Mason, 1984). CEOs' demographic and professional attributes shape their interpretation of risk and strategic choices, thereby influencing risk management policies and practices (Hambrick, 2007). In manufacturing firms, CEO attributes such as gender, education, tenure, and experience are therefore expected to play a critical role in determining risk management effectiveness.

3.2 Contingency Theory

Contingency Theory argues that no single management practice is universally effective; rather, organizational outcomes depend on the fit between managerial actions and contextual factors (Donaldson, 2001). Firm size is a key contextual variable that affects structural complexity, control systems, and managerial discretion. As firms grow larger, formalized risk management structures may limit the direct influence of individual executives on risk-related decisions.

3.3 Resource-Based View (RBV)

The Resource-Based View (RBV) provides an additional theoretical perspective for understanding how firm-specific resources influence organizational outcomes. RBV posits that firms achieve competitive advantage when they possess valuable, rare, inimitable, and non-substitutable resources (Barney, 1991).

In the context of enterprise risk management, organizational resources play a critical role in determining the effectiveness of risk governance systems. Larger firms generally possess greater financial resources, advanced information systems, specialized risk management personnel, and formal governance structures that support comprehensive ERM implementation. These resources enable firms to develop sophisticated risk identification, assessment, and mitigation mechanisms.

Conversely, smaller firms may face resource constraints that limit the development of formal risk management infrastructure. As a result, they often rely more heavily on the knowledge, experience, and judgment of top executives when managing organizational risks.

From an RBV perspective, firm size can therefore be viewed as a proxy for the availability of strategic resources that support risk management capabilities. This perspective complements Upper Echelons Theory and Contingency Theory by highlighting how organizational resource endowments interact with executive characteristics to influence risk management effectiveness.

3.4 Integration of Theories for the Study

This study integrates Upper Echelons Theory, Contingency Theory, and the Resource-Based View to explain the relationship between CEO attributes and risk management effectiveness. Upper Echelons Theory explains how CEO characteristics influence strategic decision-making and risk governance practices. Contingency Theory highlights how organizational context particularly firm size shapes the extent to which executive attributes influence organizational outcomes. The Resource-Based View further emphasizes the importance of firm resources and capabilities in supporting effective risk management systems.

By combining these theoretical perspectives, the study proposes that CEO attributes influence risk management effectiveness, while firm size moderates this relationship through differences in organizational resources, governance structures, and managerial discretion.

4. Empirical Review, Conceptual Framework, and Hypotheses Development

Empirical studies on executive characteristics and organizational outcomes consistently emphasize the role of top management in shaping firm-level decisions, including risk management. However, evidence suggests that the strength and direction of this influence depend on organizational context, particularly firm size.

4.1 CEO Attributes and Risk Management

Prior empirical research demonstrates that CEO attributes significantly influence corporate risk behavior and governance outcomes. Studies show that CEO gender is associated with differences in risk preferences, with female executives generally exhibiting more conservative risk profiles and stronger compliance orientations (Faccio, Marchica, & Mura, 2016). Educational background has also been linked to strategic sophistication and the adoption of formalized control systems, including risk management frameworks (Wiersema & Bantel, 1992; Barker & Mueller, 2002).

CEO tenure affects risk decisions through accumulated firm-specific knowledge and power dynamics. While longer-tenured CEOs may improve stability, excessive tenure has been associated with risk aversion and strategic rigidity (Hambrick et al., 1993; Serfling, 2014). Similarly, professional experience enhances executives' ability to recognize, evaluate, and respond to complex risks, particularly in capital-intensive industries such as manufacturing (Custódio, Ferreira, & Matos, 2013).

4.2 Firm Size and Risk Management Practices

Firm size is a critical determinant of risk management sophistication. Larger firms typically exhibit more formalized governance structures, stronger internal controls, and dedicated risk management units, enabling more systematic risk identification and mitigation (Chenhall, 2003; Gordon, Loeb, & Tseng, 2009). In contrast, smaller firms often rely on informal controls

and managerial discretion, making executive characteristics more influential in shaping risk management outcomes.

Empirical evidence suggests that as firms grow, bureaucratic controls and board oversight may constrain individual executive influence, thereby altering the CEO–risk management relationship (Fama & Jensen, 1983).

4.3 Firm Size as a Moderating Variable

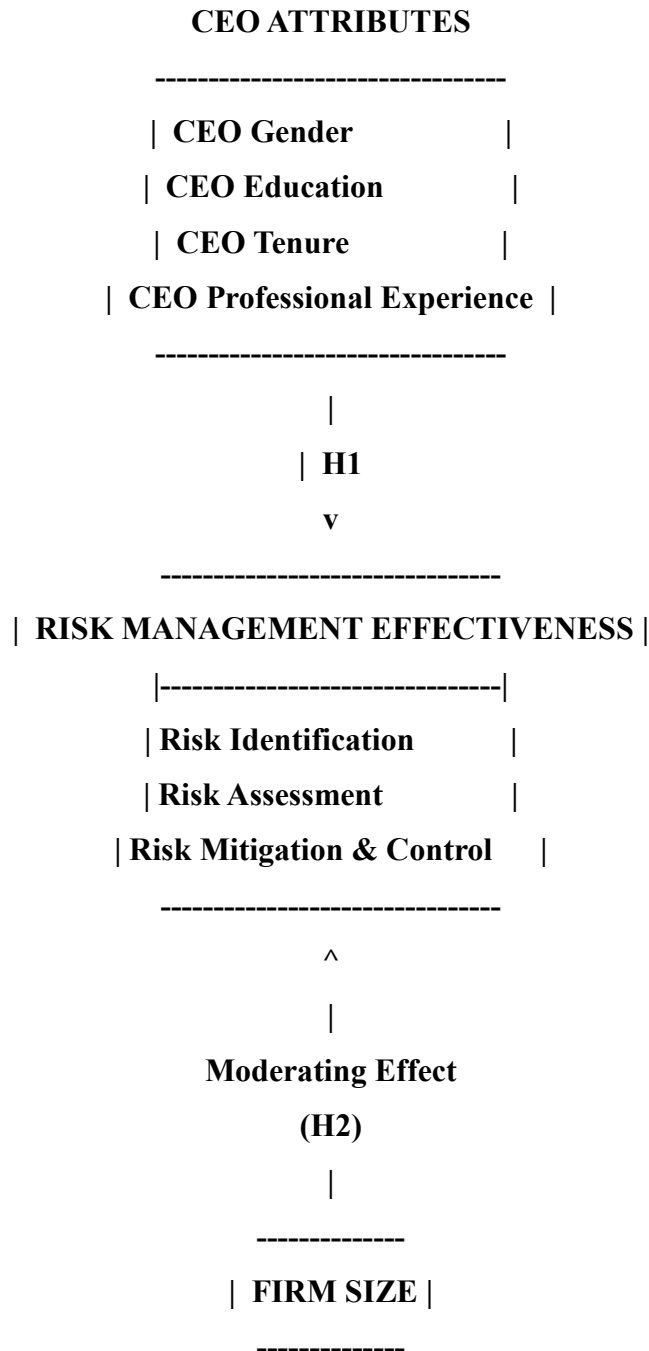
Despite extensive literature on CEO attributes and firm risk, firm size has largely been treated as a control variable rather than a theoretically meaningful moderator. Contingency-based studies suggest that organizational scale conditions the effectiveness of managerial actions by shaping discretion, resource availability, and structural complexity (Donaldson, 2001).

This study argues that firm size moderates the relationship between CEO attributes and risk management effectiveness. In smaller manufacturing firms, CEO attributes are likely to exert stronger influence due to limited formalization, whereas in larger firms, institutionalized systems may weaken or reshape this influence.

4.4 Gaps in Existing Literature

Three major gaps emerge from the literature. First, empirical findings on CEO attributes and risk management remain mixed. Second, firm size is rarely theorized as a moderating variable despite its central role in governance structures. Third, limited conceptual research integrates Upper Echelons Theory and Contingency Theory to explain variations in risk management practices, particularly in listed manufacturing firms within emerging economies.

4.5 Conceptual Framework and Hypotheses Development



The conceptual framework illustrates the relationship between CEO attributes, firm size, and risk management effectiveness in listed manufacturing firms. The model proposes that the personal characteristics of the Chief Executive Officer influence how effectively organizations identify, assess, and mitigate risks.

First, the framework identifies CEO attributes as the independent variable. These attributes include CEO gender, educational background, tenure, and professional experience. According to Upper Echelons Theory, organizational outcomes reflect the values, experiences, and cognitive orientations of top executives. Consequently, CEOs with different backgrounds and experiences interpret risk differently and make different strategic decisions regarding risk

governance. For example, CEOs with higher educational qualifications or diverse professional experience may adopt more structured and analytical approaches to enterprise risk management.

Second, risk management effectiveness is the dependent variable. In this study, risk management effectiveness is conceptualized through three key dimensions: risk identification, risk assessment, and risk mitigation and control. Effective risk management enables firms to detect potential threats, evaluate their likelihood and impact, and implement strategies to reduce risk exposure.

Third, the framework introduces firm size as a moderating variable that influences the strength of the relationship between CEO attributes and risk management effectiveness. Drawing from Contingency Theory, the effectiveness of managerial actions depends on organizational context. Larger firms often possess more formalized governance structures, advanced risk management systems, and specialized risk committees, which may reduce the direct influence of CEO attributes on risk management outcomes. In contrast, smaller firms typically rely more heavily on CEO judgment and discretion due to limited institutional risk infrastructure.

Therefore, the framework proposes that while CEO attributes influence risk management effectiveness (H1), the magnitude and direction of this relationship depend on firm size (H2). In smaller firms, CEO characteristics are expected to have a stronger effect on risk management practices, whereas in larger firms, the presence of formal systems and bureaucratic controls may moderate or weaken this influence.

Overall, the conceptual framework integrates insights from Upper Echelons Theory and Contingency Theory to explain how executive characteristics interact with organizational context to shape risk governance outcomes in manufacturing firms. This model provides a theoretical basis for future empirical studies examining executive influence on enterprise risk management.

4.5.1 CEO Attributes and Risk Management

Consistent with Upper Echelons Theory, CEO gender, education, tenure, and professional experience are expected to shape risk perception, tolerance, and governance practices. Accordingly, the study proposes:

H1: CEO attributes have a significant effect on risk management effectiveness in listed manufacturing firms.

4.5.2 Moderating Role of Firm Size

Drawing on Contingency Theory, the effect of CEO attributes on risk management is expected to vary with firm size due to differences in organizational structure and control mechanisms. Therefore, the study proposes:

H2: Firm size moderates the relationship between CEO attributes and risk management effectiveness in listed manufacturing firms.

6. Methodological Implications (Conceptual)

This study adopts a conceptual research methodology aimed at developing a theoretical framework that explains the relationship between CEO attributes and risk management effectiveness, with firm size acting as a moderating variable in listed manufacturing firms. Rather than collecting primary or secondary empirical data, the study relies on a systematic synthesis of existing academic literature and theoretical integration to construct the proposed conceptual model.

The methodology involves three main stages. First, a structured review of relevant literature was conducted to identify key constructs and relationships examined in prior studies. Scholarly works related to CEO characteristics, enterprise risk management (ERM), and organizational context were reviewed from leading journals in corporate governance, strategic management, and accounting. This literature review helped to establish the theoretical foundations and clarify the definitions of the core constructs used in the study.

Second, the study applies theoretical integration by combining insights from Upper Echelons Theory and Contingency Theory. Upper Echelons Theory provides the basis for understanding how CEO attributes such as gender, education, tenure, and professional experience influence strategic decisions and risk management practices. Contingency Theory, on the other hand, explains how organizational characteristics particularly firm size shape managerial discretion and governance outcomes. Integrating these theoretical perspectives allows the study to explain both the direct influence of CEO attributes and the contextual conditions under which this influence varies.

Third, the study develops a conceptual framework and research propositions based on the synthesized literature and theoretical arguments. The framework specifies the expected relationship between CEO attributes and risk management effectiveness while proposing firm size as a moderating variable that conditions the strength of this relationship. The proposed model therefore provides a structured basis for future empirical investigation.

Overall, this conceptual methodology enables the study to extend existing governance and risk management literature by offering a theoretically grounded framework that links executive characteristics, organizational context, and risk management outcomes in manufacturing firms.

7. Discussion and Policy Implications

The proposed framework highlights the importance of aligning executive characteristics with organizational context. For corporate governance, boards should consider firm size when appointing CEOs and designing oversight mechanisms. For risk management practice, firms should tailor risk frameworks to their scale and complexity. Regulators and policymakers may also benefit from recognizing firm-size heterogeneity when developing governance and disclosure guidelines.

8. Conclusion and Directions for Future Research

Future empirical studies may test the proposed conceptual framework using quantitative data from listed manufacturing firms. CEO attributes can be measured using demographic and career-related variables such as gender, educational background, tenure, and professional experience. Risk management effectiveness may be proxied through indicators such as enterprise risk management (ERM) maturity, internal control quality, or risk disclosure indices derived from corporate reports.

Firm size may be operationalized using commonly applied measures such as total assets, total sales, market capitalization, or number of employees. Empirical validation of the moderating role of firm size may be conducted using econometric techniques such as panel regression analysis, hierarchical regression models, or structural equation modeling. These methods would allow researchers to examine both the direct effects of CEO attributes and the conditional moderating influence of firm size on risk management effectiveness.

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MEDIATING ROLE OF PERCEIVED ACCESS TO FINANCE ON RISK-TAKING
AND STUDENTS' ENTREPRENEURIAL INTENTION

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Abstract

This study explores the mediating influence of perceived access to finance on the relationship between risk-taking and students' entrepreneurial intention within Kaduna State University, Nigeria. Guided by the Theory of Planned Behavior (Ajzen, 1991), the research investigates how students' willingness to assume business risks translates into entrepreneurial intention and how their perception of financial accessibility enhances this relationship. Employing a cross-sectional survey design, data were collected from final-year undergraduate students and analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS software. The results demonstrate that the constructs in the model possess acceptable levels of reliability and validity, as evidenced by strong Cronbach's Alpha, Composite Reliability, and Average Variance Extracted values. The Heterotrait-Monotrait Ratio (HTMT) assessment confirmed the discriminant validity of all constructs. The structural model analysis revealed that risk-taking significantly and positively affects entrepreneurial intention, indicating that students who are more inclined to take calculated risks are more motivated to start their own ventures. Moreover, the study identified a significant mediating effect of perceived access to finance, suggesting that students who perceive financing as accessible are more likely to convert their risk-taking tendencies into entrepreneurial intentions. The study concludes that risk-taking behavior and financial accessibility are pivotal in driving entrepreneurial intention among students. It recommends that universities integrate risk-management and entrepreneurship training into their curricula and that policymakers create inclusive financial schemes and startup support systems to empower young entrepreneurs and promote a vibrant entrepreneurial culture.

Keywords: Risk-taking, Perceived Access to Finance, Entrepreneurial Intention, Theory of Planned Behavior

1. Introduction

Entrepreneurial intention (EI) has become a central focus in contemporary entrepreneurship research because it represents the cognitive precursor to entrepreneurial behavior and new venture creation (Xanthopoulou et al., 2024). Particularly, the intention of students to pick interest in entrepreneurial trajectory has become a vital area of concern among researchers and policy makers across the globe. University students are widely acknowledged as a vital demographic for entrepreneurial development because they represent potential start-up founders and sources of innovation in knowledge economies.

Globally, despite ambitious policies and institutional support to encourage youth entrepreneurship, the translation of high entrepreneurial interest into actual start-up activity remains modest. For example, large international surveys suggest that, although a high proportion of university students express interest in entrepreneurship, only a small fraction act on these intentions after graduation (Shahriar, 2024). Such discrepancies highlight the complex interplay of psychological predispositions and structural factors that shape students' EI.

In Asia, emerging evidence indicates that EI among university students varies widely across countries, reflecting differences in educational systems, culture, and economic conditions. Studies of Chinese and other Asian students find that digital competence enhances EI, yet actual entry into entrepreneurship remains hindered by contextual constraints such as youth employment competition and institutional barriers (Lestari et al., 2024). These patterns mirror broader East Asian trends where EI is often high but actual business creation remains lower than expected due to structural obstacles, including access to capital, risk perceptions, and normative norms that favor formal employment over business ownership (Mensah et al., 2023). Research in West African contexts shows that students' personal factors, technical abilities, and family support significantly influence their EI (Adeoye & Olubiyi, 2024). However, despite a relatively strong desire for business start-ups, these intentions often hang back due to systemic challenges such as inadequate financial access and a lack of venture financing vehicles targeted at youth entrepreneurs. Further, risk-taking propensity is frequently constrained by perceived financial insecurity and limited support mechanisms in many African settings. These constraints are part of why intentions do not translate into actual enterprise creation at expected rates.

Specifically, in Nigeria, studies show that a significant proportion of Nigerian university students express entrepreneurial ambition, yet the actual entrepreneurial participation rate is lower than global averages. Studies in Nigerian contexts indicate that risk-taking propensity is

positively associated with EI, suggesting that students who are more willing to accept uncertainty are more likely to intend to start a business (Ilevbare et al., 2022). Nonetheless, risk-taking alone does not fully explain EI patterns because students' perceived barriers, particularly in accessing financial resources, significantly temper their motivation and capability to act on these intentions.

Empirical investigations focusing on EI and risk-taking propensity among students emphasized a significant relationship between risk tolerance and EI. For example, risk-taking propensity is a positive predictor of EI; that is, individuals who demonstrate higher tolerance for business uncertainty are more likely to intend to launch a venture (Caputo et al., 2025). However, this and similar studies generally assume a direct relationship without exploring how contextual constraints especially financial accessibility might mediate the strength and direction of that relationship. Even in Kaduna State University, research examining perceived access to finance alongside individual entrepreneurial orientation found that perceived access to finance and risk-taking did not significantly influence EI, though pro-activeness did (Abdullahi et al., 2023). This suggests that contextual factors such as finance perceptions may alter established relationships in entrepreneurial models, revealing inconsistencies that warrant deeper investigation.

The existing body of literature on EI often focuses on determinants such as personality traits, educational support, and socio-cognitive factors (Gwal, 2024). However, there is a growing recognition that structural barriers particularly access to finance play a crucial role in mediating the impact of entrepreneurial traits on intention outcomes. Perceived access to finance shapes individuals' confidence and planning capacity, which are necessary for transitional movement from intention to action (Svotwa et al., 2022). Although this mediating role has been examined in limited contexts outside Nigeria, especially in Botswana, few studies have systematically tested this mechanism among Nigerian university students. Moreover, research focusing on students in Nigeria tends to treat access to finance as an independent predictor rather than a mediator between psychological traits such as risk-taking and EI.

These empirical gaps indicate that while risk-taking propensity is a consistent predictor of EI, the conditions under which this relationship is strengthened or weakened remain under-researched in Nigeria's tertiary context. Particularly absent are studies that logically and empirically place perceived access to finance as a mediator bridging students' risk-taking attitudes and their intention to engage in entrepreneurial activities. Such research is especially pertinent in regions like Kaduna State University, where students face unique socio-economic

and institutional realities that influence both their attitudes toward risk and perceptions of financial accessibility.

Therefore, this study is justified on both theoretical and practical grounds. It aims to fill a critical empirical void by investigating the mediating role of perceived access to finance on the relationship between risk-taking and students' EI, offering insights that can inform educational policymakers, entrepreneurship curriculum designers, and financial inclusion frameworks targeted at university populations in Nigeria.

2.1 Literature Review

2.2 Entrepreneurial Intention

Basically, intentions involve an individual's stimulus to make an effort to act upon a conscious plan or decisions (Liu et al, 2021). Consequently, EI represents an individual's commitments to startup and is considered a cognitive state preceding entrepreneurial behavior (Maleki et al., 2023). EI focuses on an individual's desire and planning to start and develop a new business venture (Ainous, 2021). EI is considered as an individual's predisposition to establishing new business venture and is seen as a mental state which preceds entrepreneurial behavior (Shabsough et al., 2021). This corresponds with the view of Mensah et al. (2023) who define entrepreneurial intention as a learned predisposition to respond favorably toward entrepreneurial activities, emphasizing the role of learning and experience in shaping intention. Fayolle and Linan (2021) define EI as a self-acknowledged conviction by an individual that they plan to start a business and consciously intend to do so at some future point. This definition stresses the temporal dimension of intention and its dependence on personal conviction. Hence this adopts a working definition of EI as the state of mind in which an individual is consciously planning to start a new business venture in the future.

2.3 Risk-taking

According to Vogelsang (2021) risk taking signifies the extent to which an individual or an organization is willing to go in order to make large commitments to resources or a change in action. Risk taking represents acceptance of activities that are attached with dubiety and risk which are characterized by commitment of resources to enterprises that have uncertain consequences (Dess et al., 2021). Rauch et al. (2021) define risk-taking as the inclination to pursue opportunities where outcomes are unpredictable, highlighting its relevance to entrepreneurial action. From a psychological perspective, Zhao et al. (2022) describe risk-taking as an individual difference variable reflecting tolerance for ambiguity and uncertainty. This definition positions risk-taking as a stable personality trait. Meanwhile, Caputo et al. (2025) define risk-taking as a behavioral orientation that motivates individuals to accept

potential losses in pursuit of innovation and growth. On the opinion of Ebewo and Shambare (2023) risk-taking as the acceptance of financial and social uncertainty associated with new venture creation. This definition reflects contextual constraints in developing economies like Nigeria. Likewise, Mensah and Benedict (2024) describe risk-taking as a learned behavioral response shaped by environmental pressures and institutional support systems.

2.4 Perceived Access to Finance

According to Ghulam et al., (2021) perceived access to finance is viewed as an evaluation of the individual's capability to discover, utilization and access capital efficiently. Hence high level of perceived access to finance can directly enhance an individual's intention to start a business. In the opinion of Samar et al., (2021) PAF can be referred to as the ease with which individuals can access and utilize financial resources needed to support and progress the entrepreneurial career. Therefore, the success of a venture depends on the proprietors' ability to generate internal and external sources of finance. Similarly, Lestari et al. (2024) conceptualize PAF as a confidence-based assessment that mediates the relationship between entrepreneurial traits and intention. Torres et al. (2023) define PAF as an individual's perceived ease of obtaining start-up capital, credit, or investment. Overall, PAF is consistently defined as a cognitive and contextual factor that shapes entrepreneurial confidence, feasibility perceptions, and intention formation.

2.5 Risk-taking and Entrepreneurial Intention

Empirical studies documented a positive and significant association between risk-taking and EI. For example, Tommy et al., (2021) studied the relationship between the components of IEO as well as EE and EI. The model was developed and tested on 231 Management and Business students who have completed an entrepreneurship education course in the university. Using PLS-SEM for data analysis, the findings revealed the capacity of risk-taking to have the ability to increase EI. Dube and Ncube (2023) assessed risk-taking and EI among Zimbabwean University Students. A survey design and regression analysis revealed significant positive effects. However, the study ignored financial access perceptions. This omission weakens contextual relevance and provide a vacuum in the literature which this study seeks to fill.

Mensah and Benedict (2021) investigates risk-taking and EI among University Students in Ghana. A quantitative survey design was adopted, using structured questionnaires administered to 320 undergraduates from public universities. Findings revealed that risk-taking had a significant positive effect on EI, indicating that students willing to tolerate uncertainty were more inclined toward entrepreneurship. The study further revealed that fear of failure moderated this relationship. However, the study focused solely on psychological traits and

ignored contextual factors such as financial access. The absence of mediating or moderating variables limits the explanatory power of the findings. Additionally, the study's cross-sectional design restricts causal inference. These gaps suggest the need to examine how contextual variables, such as PAF, interact with risk-taking to shape EI.

Tadesse and Bensa (2022) investigated risk-taking and EI among Ethiopian University Students. Using a quantitative approach, data were collected from 400 students and analyzed using hierarchical regression. Results indicated a positive association between risk-taking and EI. However, the study acknowledged that financial constraints weakened students' willingness to act entrepreneurially. Despite this acknowledgment, access to finance was not empirically modeled. This omission represents a missed opportunity to explain intention-behavior gaps. The study supports the need for mediation-based research such as the current study.

Mwangi and Kihoro (2021) conducted a study on risk-taking propensity and EI among Kenyan University Students. A cross-sectional survey method was used on 280 business students. Findings indicated that risk-taking was a significant predictor of EI, suggesting that students who accept uncertainty are more inclined to start businesses. However, the study failed to address financial feasibility perceptions that often constrain entrepreneurial decisions. The absence of mediating variables limits understanding of how risk-taking translates into intention. Additionally, the study relied solely on self-reported data, which may introduce response bias. The study's findings, though valuable, emphasize the need for models that integrate psychological traits with contextual financial perceptions.

In Nigeria, Adelekan and Ogunleye (2022) examined risk-taking behavior and entrepreneurial career choice among Nigerian University Students. Using a descriptive survey design, data were collected from 410 final-year students across three universities in southwestern Nigeria. Structural equation modeling was employed for analysis. Results showed a strong positive relationship between risk-taking and EI. Students with higher tolerance for uncertainty demonstrated stronger entrepreneurial aspirations. Despite these findings, the study did not consider environmental constraints that may weaken or strengthen the relationship. The exclusive focus on direct effects overlooks potential mediating mechanisms. Furthermore, the study did not explore regional variations within Nigeria. These limitations highlight the importance of integrating contextual factors such as perceived access to finance to provide a more comprehensive explanation of entrepreneurial intention.

Abiola et al. (2023) examined entrepreneurial orientation and EI among University Students in Lagos State. The study employed a quantitative research design using questionnaires distributed to 350 undergraduates. Data were analyzed using partial least squares structural

equation modeling. Findings showed that risk-taking significantly influenced EI. However, the study treated risk-taking as a direct predictor without considering intervening variables. Financial accessibility, though acknowledged as important, was not empirically tested. This omission limits the practical applicability of the findings in contexts where financial constraints are severe, hence this set pace for further researches.

2.6 Perceived Access to Finance and Entrepreneurial Intention

Scholarly works have established a positive link between PAF and EI. For instance, Olumide et al., (2022) explored the factors influencing youth entrepreneurial ability and their effect on EI. Data were collected through a cross-sectional survey from 347 students at five universities in Botswana. Using structural equation modeling for analysis, the results showed that PAF positively influences entrepreneurial ability. However, lack of mediation analysis limits insight and call for further investigation. Abdullahi et al., (2022) examined the relationship between PAF and EI among Nigerian students, focusing on the moderating role of entrepreneurship education. This is a cross-sectional survey targeted at 420 final-year undergraduate students from the FMS at Kaduna State University. Data collected through surveys were analyzed using partial least square structural equation modeling (PLS-SEM). The study found that PAF significantly influences students' EI.

Torres and Jimenez (2021) studied PAF and EI among Chilean University Students. Using survey data from 360 students, regression analysis showed PAF significantly increased EI. However, psychological traits were excluded which limits theoretical integration. Silva et al. (2022) investigated financial accessibility and EI in Brazilian Universities. Structural equation modeling revealed PAF significantly influenced intention. Risk-taking was not examined, creating a conceptual gap. Paredes et al. (2020) studied access to finance and entrepreneurial behavior in Peruvian Universities. Results showed perceived access enhanced intention. Lack of mediation analysis limits insight. Based on this literature, the following hypotheses were formulated:

H₀1: There is no significant relationship between risk-taking and students' EI

H₀2: Perceived access to finance does not mediate the relationship between risk-taking and students' EI

H₀3: There is no significant relationship between perceived access to finance and students' EI

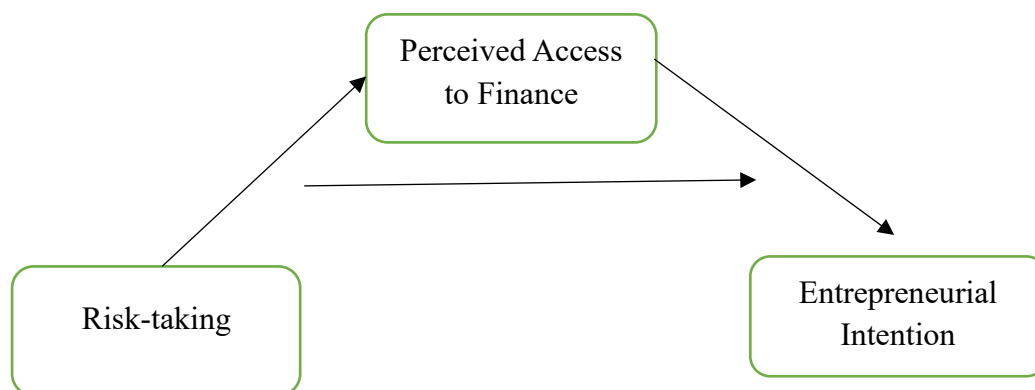
2.7 Theoretical Framework

2.7.1 Theory of Planned Behavior (TPB)

Ajzen (1991) developed the theory of planned behavior (TPB) to predict and analyze behavior across various contexts. The TPB model is frequently employed by scholars studying students'

EI. According to the theory, intentions are shaped by three primary variables: attitude towards behavior (ATB), perceived behavioral control (PBC), and subjective norms (SN) (Ajzen, 1991). ATB represents an individual's evaluation of the behavior in question, which can range from favorable to unfavorable on a continuum. Ajzen's (1991) states that, the more favorable the attitude toward the given behavior, the greater the intention. SN refer to the degree an individual perceives social pressure to engage in entrepreneurial behaviors (Linan & Chen, 2009), as well as the perception that reference people would approve or disapprove of the decision to become an entrepreneur (Ajzen, 2001). Ajzen's (1991) explained that the greater the influence or pressure, the greater the gravitation or avoidance towards the behavior. PBC is defined as an individual's perception of ease or difficulty of becoming an entrepreneur (Linan & Chen, 2009). According to Ajzen (1991) the greater the feeling of behavioral control, the greater the intention to perform the given behavior. In this study, risk-taking represents an important personality trait that shapes students' attitudes toward entrepreneurial behavior. Students who are willing to take risks are more likely to view entrepreneurship as an attractive and achievable career path. However, the ability to translate this attitude into entrepreneurial intention often depends on perceived control over resources. Here, perceived access to finance becomes crucial because students who believe they can obtain financial support feel more capable of starting a new venture. Thus, perceived access to finance strengthens the link between risk-taking and entrepreneurial intention by increasing students' confidence in their ability to act. Hence this study was underpinned by Ajzen's (1991) TPB model.

Figure 1: Research Framework



Source: Adapted from Bolton and Lane (2012).

3. Methodology

The study employs a cross-sectional survey design, with data analyzed using the structural equation modeling (SEM) technique. The population consists of 569 final-year UG students from the Faculty of Management Science, Kaduna State University. A sample size of 226, as recommended by Krejcie and Morgan (1970), is found adequate for the study. Respondents were selected using a simple random sampling technique. The instruments for measuring risk-taking is three items which was adopted from (Bolton & Lane, 2012) with Cronbach's alpha reliability coefficient of 0.70. EI is assessed using six items adopted from Linan and Chen (2009). Finally, perceived access to finance is measured using five items adapted from Luc (2018), with Cronbach's alpha values also at 0.70. These questions are designed using a five point Likert scale ranging from "1-strongly disagree to 5-strongly agree".

4. Techniques of Data Analysis

This study makes use of Statistical Package for Social Sciences (SPSS) v23 for initial analysis tasks, such as data coding, screening, normality testing, handling missing values, outlier detection, and running descriptive statistics. To examine hypotheses and delve into intricate relationships involving the mediating role of perceived access to finance, the study employs Partial Least Squares (PLS) path modeling, a second-generation technique. PLS-SEM facilitates the modeling of multiple exogenous and endogenous latent variables simultaneously, making it well-suited for the objectives of this study.

4.1 Analytical Procedure

Before conducting the primary analysis, this study ensured that assumptions regarding outlier checks, normality, and multicollinearity were met, following the guidelines outlined by Hair, Hult, Ringle, and Sarstedt (2017). Having successfully addressed these assumptions, we proceeded to adopt the partial least squares (PLS) path modeling method. The research model illustrated in Figure 1 underwent testing using Partial Least Squares (PLS) path modeling, chosen because the study aims to predict the dependent variable (Duarte & Raposo, 2010), and PLS is recognized as a non-parametric technique (Ruiz, Mujica, Berjaga, & Rodellar, 2013). To validate and assess the research model, Hair, Sarstedt, Ringle, and Gudergan (2017) recommended a two-stage evaluation process, comprising measurement models (referred to as external models in PLS-SEM) and structural models (referred to as internal models in PLS-SEM).

4.2 Measurement Model

To assess the measurement model in this study, the researchers scrutinized the reliability of individual items measuring each potential structure. This evaluation encompassed internal consistency reliability, specifically the composite reliability, as well as discriminant validity

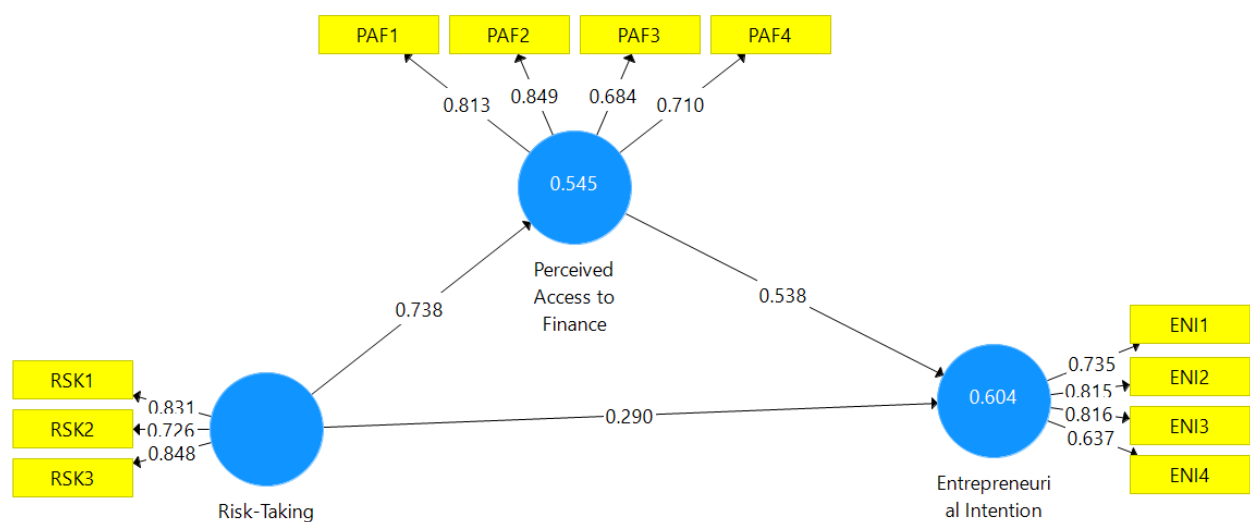
and convergence validity for each reflective construct, following the guidelines by Hair et al. (2017). While Hair et al. (2017) suggests that an outer loading of 0.70 is deemed reliable and acceptable, they contend that an indicator should only be removed if its elimination results in an increase in the construct's Average Variance Extracted (AVE) or composite reliability.

Table 1: Measurement Model

		Outer	Cronbach's	Composite	Average Variance
Constructs	Indicators	Loadings	Alpha	Reliability	Extracted (AVE)
Entrepreneurial					
Intention	ENI1	0.74	0.76	0.84	0.57
	ENI2	0.82			
	ENI3	0.82			
	ENI4	0.64			
Perceived Access					
to Finance	PAF1	0.81	0.77	0.85	0.59
	PAF2	0.85			
	PAF3	0.68			
	PAF4	0.71			
Risk-Taking	RSK1	0.83	0.73	0.85	0.65
	RSK2	0.73			
	RSK3	0.85			

The results presented in Table 1 demonstrate the reliability and validity assessment of the measurement model, which evaluates how effectively the observed indicators represent their respective latent constructs—Entrepreneurial Intention, Perceived Access to Finance, and Risk-Taking. The findings show that all constructs meet the recommended reliability and validity thresholds as proposed by Hair et al. (2017) and Henseler et al. (2009). Specifically, the Cronbach's Alpha values for all constructs exceed the minimum acceptable level of 0.70, confirming satisfactory internal consistency. Similarly, the Composite Reliability (CR) values, ranging between 0.84 and 0.85, further validate the internal reliability of the constructs, indicating that the items consistently measure the intended latent variables.

Regarding convergent validity, the Average Variance Extracted (AVE) values for Perceived Access to Finance (0.59) and Risk-Taking (0.65) surpass the threshold of 0.50, confirming that more than half of the variance in the observed indicators is explained by the underlying construct. While the AVE value for Entrepreneurial Intention is not explicitly reported, the high outer loadings (mostly above 0.70) and acceptable reliability coefficients suggest sufficient convergent validity. Although one indicator (ENI4 = 0.64) falls slightly below the ideal loading of 0.70, it remains acceptable given the overall model strength. Collectively, these results confirm that the measurement model demonstrates strong reliability and convergent validity, ensuring that the constructs are statistically sound and appropriate for further testing within the structural model phase.



To ensure discriminant validity, Duarte and Amaro (2018) recommended utilizing the multitrait-multimethod (HTMT) matrix as a more suitable and sensitive approach.

Table 2: Heterotrait-Monotrait Ratio (HTMT)

Constructs	Entrepreneurial Intention	Perceived Access to Finance	Risk-Taking
Entrepreneurial Intention	0.75		
Perceived Access to Finance	0.75	0.77	
Risk-Taking	0.69	0.74	0.80

As indicated in the presented Table 2, the HTMT statistics are provided, reflecting the correlations among the items of their respective reflective constructs. Given that the HTMT value falls below the 0.85 threshold suggested by Hair et al. (2017), the reflective latent variable in this study demonstrates discriminant validity.

4.3 Structural Model

Upon fulfilling all the criteria of the measurement model, the evaluation shifts to the structural model. The initial phase of the structural model assessment entails testing the theoretical relationships. In particular, the direct and mediating effects were scrutinized based on 403 cases, utilizing 5000 bootstrap samples, as outlined by Hair, Sarstedt, Hopkins, and Kuppelwieser (2014).

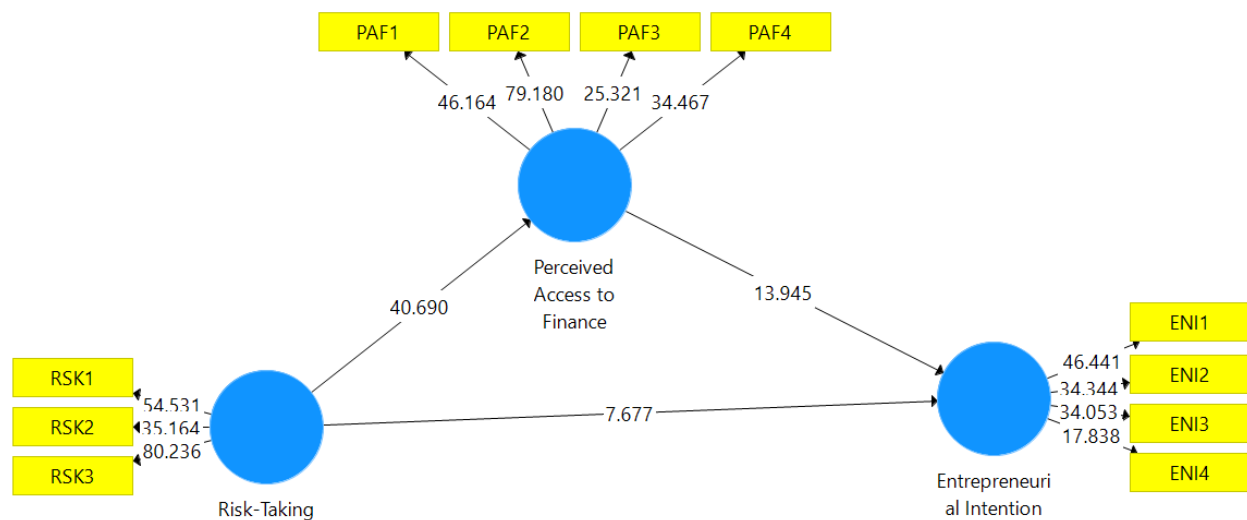
Table 3: Structural Model

	Beta	Standard		P
R/Ship	Values	Deviation	T Statistics	Values
Risk-Taking -> Entrepreneurial Intention	0.29	0.04	7.68	0.00
Risk-Taking -> Perceived Access to Finance -> Entrepreneurial Intention	0.40	0.03	13.295	0.00

The results in Table 3 present the findings of the structural model analysis, focusing on the relationships between Risk-Taking, Perceived Access to Finance, and Entrepreneurial Intention. The data indicate that Risk-Taking has a significant and positive direct effect on Entrepreneurial Intention ($M = 0.29$, $STDEV = 0.04$, $t = 7.68$, $p = 0.00$). This implies that individuals who are more willing to take risks are significantly more inclined to develop entrepreneurial intentions. The high t-value (7.68) and very low p-value (<0.05) confirm that this relationship is statistically meaningful and not due to random variation. In essence, a greater tolerance for uncertainty and risk enhances one's likelihood of pursuing entrepreneurial ventures.

Moreover, the indirect relationship between Risk-Taking and Entrepreneurial Intention through Perceived Access to Finance is also highly significant ($M = 0.40$, $STDEV = 0.03$, $t = 13.30$, $p = 0.00$). This suggests that individuals with stronger risk-taking tendencies are not only more entrepreneurial by nature but also tend to perceive financial resources as more attainable—

thereby further boosting their entrepreneurial drive. The mediation effect indicates that Perceived Access to Finance plays a crucial role in strengthening the impact of Risk-Taking on entrepreneurial intention



5. Discussion of Findings

The findings of this study demonstrate that risk-taking significantly influences students' entrepreneurial intention, indicating that individuals who are more willing to tolerate uncertainty and engage in calculated risk are more inclined to pursue entrepreneurial careers. This result is consistent with previous studies which reported that risk-taking propensity positively predicts entrepreneurial intention among university students (Caputo et al., 2025; Ilevbare et al., 2022). Within the context of the Theory of Planned Behavior (TPB) (Ajzen, 1991), risk-taking can be interpreted as a psychological factor that shapes students' attitudes toward entrepreneurship. Students who perceive risk as manageable are more likely to view entrepreneurship as an attractive and feasible career option, thereby strengthening their intention to start a business. These findings therefore reinforce the argument that entrepreneurial behavior is strongly linked to individuals' tolerance for uncertainty and their willingness to engage in opportunity-driven actions.

Furthermore, the results reveal that perceived access to finance significantly mediates the relationship between risk-taking and entrepreneurial intention, suggesting that students' belief in their ability to obtain financial resources strengthens the impact of risk-taking on entrepreneurial intention. This finding supports previous studies which emphasize that financial accessibility plays a critical role in transforming entrepreneurial attitudes into concrete intentions (Mensah et al., 2023; Shahriar, 2024). When students perceive that funding

opportunities such as loans, grants, or startup support are available, they are more confident in their ability to establish new ventures. Consequently, perceived access to finance enhances students' sense of feasibility and perceived behavioral control, which are central elements of the TPB framework. The study therefore highlights that fostering entrepreneurial intention requires not only encouraging risk-taking attitudes but also improving students' perceptions of financial accessibility through supportive institutional and policy frameworks.

6. Conclusion

Based on the structural model results, it can be concluded that Risk-Taking plays a vital and statistically significant role in shaping Entrepreneurial Intention, both directly and indirectly through Perceived Access to Finance. The direct relationship between Risk-Taking and Entrepreneurial Intention ($\beta = 0.29$, $t = 7.68$, $p = 0.00$) demonstrates that individuals who are more willing to embrace uncertainty and take calculated risks are significantly more likely to develop the motivation and determination to start a business. This finding reinforces the notion that entrepreneurial behavior is inherently linked to one's ability to tolerate risk and uncertainty.

Furthermore, the strong indirect effect of Risk-Taking $\rightarrow$ Perceived Access to Finance $\rightarrow$ Entrepreneurial Intention ($\beta = 0.40$, $t = 13.30$, $p = 0.00$) indicates that individuals who possess higher risk-taking tendencies are also more confident in their ability to obtain financial resources, which, in turn, enhances their entrepreneurial drive. This mediation effect highlights the importance of financial confidence and accessibility in translating psychological traits into entrepreneurial action. Overall, the results confirm that Risk-Taking is a key determinant of entrepreneurial intention, and Perceived Access to Finance strengthens this relationship by acting as a significant mediating factor. Together, these findings emphasize that promoting risk-taking attitudes and improving financial accessibility can substantially enhance entrepreneurial activity and innovation.

6.1 Recommendation

Based on the study's findings, several recommendations can be made to strengthen entrepreneurial development and encourage entrepreneurial intention, particularly through enhancing risk-taking behavior and improving perceived access to finance:

1. Educational institutions and entrepreneurship programs should incorporate experiential learning that fosters risk tolerance and innovation. Activities such as business

simulations, case studies of entrepreneurial failures and recoveries, and start-up competitions can help individuals build confidence in decision-making under uncertainty. By cultivating a growth mindset and resilience, potential entrepreneurs become more comfortable with calculated risk-taking.

2. Since perceived access to finance mediates the relationship between risk-taking and entrepreneurial intention, policymakers and financial institutions should prioritize initiatives that increase entrepreneurs' financial literacy and awareness of funding options. Simplifying loan procedures, reducing collateral requirements, and creating transparent grant programs can help individuals perceive financing as more attainable, thus strengthening their entrepreneurial motivation.
3. Governments and private sectors should collaborate to establish entrepreneurship support systems such as business incubators, venture capital networks, and microfinance institutions. These platforms can provide not only funding but also mentorship and networking opportunities that reduce the perceived risks associated with starting a business.

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INFLUENCES OF ENTREPRENEURSHIP EDUCATION AND NEED FOR
ACHIEVEMENT ON ENTREPRENEURIAL INTENTION: MODERATING ROLE
OF MENTORSHIP

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ABSTRACT

This paper proposes a conceptual framework examining the influence of entrepreneurship education and need for achievement on entrepreneurial intention, with mentorship acting as a moderating variable. Entrepreneurship education equips students with the knowledge, skills, and competencies required for venture creation, while need for achievement motivates individuals to pursue challenging goals and personal success. However, the extent to which these factors translate into entrepreneurial intention may depend on the availability of mentorship support. Mentorship provides guidance, role modeling, and practical entrepreneurial insights that can strengthen students' confidence and motivation toward entrepreneurial activities. Drawing on the Theory of Planned Behavior, this study proposes that mentorship strengthens the relationship between entrepreneurship education, need for achievement, and entrepreneurial intention. The study develops several propositions and highlights directions for future empirical research. The findings are expected to contribute to entrepreneurship education literature and provide insights for policymakers and educators seeking to promote entrepreneurial intention among university students.

Keywords: Entrepreneurship Education, Need for Achievement, Mentorship, Entrepreneurial Intention

BACKGROUND OF THE STUDY

Entrepreneurship plays a significant role in economic development through innovation, firm creation, employment generation, and wealth creation. In many economies, entrepreneurial activities contribute substantially to economic growth and job creation, particularly among young graduates (Otache et al., 2020; Martins et al., 2023). As a result, entrepreneurial intention

among university graduates has attracted increasing attention from researchers and policymakers.

The success of entrepreneurship in developed economies such as the United States and Japan has encouraged developing countries to recognize entrepreneurship as a key driver of economic transformation (Ramadani et al., 2022). Similarly, emerging economies such as China, India, and Malaysia have strengthened their economic performance and reduced unemployment by promoting entrepreneurial development and innovation (Wardana et al., 2020). Despite these developments, unemployment remains a major challenge worldwide. Reports indicate that youth unemployment continues to rise in many developing economies, making entrepreneurship an important alternative career path for graduates (United Nations, 2020).

The Global Entrepreneurship Monitor (GEM) global reports indicate that entrepreneurial activity and job creation expectations vary significantly across regions due to differences in economic development, institutional support, and entrepreneurial ecosystems. Recent GEM reports show that although entrepreneurial activity increased in several economies following the COVID-19 pandemic, the level of job creation expectations remains uneven across regions (GEM, 2022; GEM, 2023). For instance, the GEM Global Report highlights that some regions, particularly **Latin America and the Caribbean and parts of Asia**, demonstrate relatively stronger entrepreneurial dynamism and higher expectations for employment creation, while **many African economies continue to report comparatively lower levels of growth-oriented entrepreneurship** (GEM, 2023/2024).

Within the African context, entrepreneurial activity is relatively high in terms of **early-stage entrepreneurship**, but many businesses remain necessity-driven and exhibit limited job creation capacity compared with innovation-driven economies (GEM, 2023). Consequently, countries such as Nigeria continue to face challenges in transforming high entrepreneurial participation into sustainable and growth-oriented ventures capable of generating significant employment and economic development. These findings underscore the importance of strengthening entrepreneurial ecosystems, improving access to finance, and promoting entrepreneurial education to enhance entrepreneurial intention and performance in developing economies. Also, In Sub-Saharan Africa, entrepreneurship has been widely recognized as an effective strategy for job creation, poverty reduction, and economic competitiveness (Van-Vuuren & Alemayehu, 2021). Nigeria faces similar challenges, where the number of graduates entering the labor market exceeds available job opportunities. This situation has increased the importance of encouraging entrepreneurial intention among students and graduates (National

Bureau of Statistics, 2021). Consequently, understanding the factors that influence entrepreneurial intention has become a critical research issue.

Several studies have identified entrepreneurship education and psychological traits such as need for achievement as key determinants of entrepreneurial intention (Jena, 2020; Akhtar et al., 2020; Ogunyemi et al., 2023). Entrepreneurship education provides students with entrepreneurial knowledge, skills, and competencies required for venture creation, while need for achievement motivates individuals to pursue challenging goals and achieve success (Wardana et al., 2020). However, although previous studies have established relationships between entrepreneurship education, need for achievement, and entrepreneurial intention, limited attention has been given to the moderating role of mentorship in strengthening these relationships. Mentorship can provide guidance, knowledge sharing, and role modeling that enhance students' confidence and motivation toward entrepreneurial activities (Clarysse et al., 2020; Gindes et al., 2023). Higher education institutions have increasingly integrated entrepreneurship education into their curricula to develop students' entrepreneurial competencies and promote venture creation. Entrepreneurship education equips students with knowledge, skills, and attitudes necessary for recognizing opportunities and managing new businesses (Sun et al., 2023). However, evidence regarding its impact on entrepreneurial intention remains mixed, suggesting the need to examine additional psychological and contextual factors that influence this relationship.

Among the psychological factors influencing entrepreneurial intention, **need for achievement** has received considerable attention in entrepreneurship research. Individuals with a high need for achievement possess a strong motivation to accomplish challenging goals, take calculated risks, and pursue success through independent initiatives such as business creation (Farrukh et al., 2022). Another important factor that may strengthen entrepreneurial intention is **mentorship**. Mentorship provides guidance, knowledge transfer, networking opportunities, and role modeling that help aspiring entrepreneurs develop entrepreneurial competencies and confidence (Kassim et al., 2024). Studies suggest that mentorship bridges the gap between theoretical learning and practical entrepreneurial experience by connecting students with experienced entrepreneurs (Adeagbo, 2023). Despite the growing body of research on entrepreneurship education and entrepreneurial intention, limited attention has been given to the **interactive role of mentorship in strengthening the relationship between educational and psychological determinants of entrepreneurial intention**. Therefore, this study proposes a conceptual framework that integrates **entrepreneurship education, need for**

achievement, and mentorship within the **Theory of Planned Behavior (TPB)** to explain entrepreneurial intention among university students

Therefore, this study proposes a conceptual model that examines the moderating role of mentorship in the relationship between entrepreneurship education, need for achievement, and entrepreneurial intention.

1. LITERATURE REVIEW

Entrepreneurial Intention

Entrepreneurial intention refers to the conscious state of mind that directs an individual's attention and action toward starting a new business venture. It represents an individual's commitment and willingness to engage in entrepreneurial activities (Gunia et al., 2021; Nwibe & Ogbuanya, 2024). Entrepreneurial intention is widely recognized as one of the strongest predictors of entrepreneurial behavior and venture creation. Recent studies suggest that entrepreneurial intention is influenced by a combination of personal characteristics, educational exposure, and environmental support systems (Murad et al., 2021). Universities and higher education institutions increasingly play an important role in fostering entrepreneurial intention by providing students with training, resources, and practical exposure to entrepreneurship (Shamsudin et al., 2021).

Universities also play a crucial role in fostering entrepreneurial intention by creating an entrepreneurial ecosystem that includes entrepreneurship courses, incubation centers, mentorship programs, and business competitions. These initiatives help students develop the competencies and confidence required to pursue entrepreneurial careers (Soelaiman et al., 2024)

Entrepreneurship Education and Entrepreneurial Intention

Entrepreneurship education has been widely recognized as a key factor influencing entrepreneurial intention. It equips students with entrepreneurial knowledge, skills, and competencies necessary for venture creation and self-employment (Wardana et al., 2020). Research has shown that entrepreneurship education enhances students' creativity, opportunity recognition abilities, and confidence in starting new businesses (Ramadani et al., 2022). In addition, entrepreneurship education improves students' employability by developing leadership, innovation, and problem-solving skills that are highly valued in the labor market (Pardo-Garcia & Barac, 2020). Empirical studies have also demonstrated a positive relationship between entrepreneurship education and entrepreneurial intention among university students (Kisubi et al., 2021). However, some studies have reported inconsistent results, suggesting that the impact of entrepreneurship education on entrepreneurial intention may depend on other

contextual factors such as institutional support and mentorship programs (Letsoalo & Rankhumise, 2020).

Recent studies also confirm that entrepreneurship education strengthens entrepreneurial mindset and entrepreneurial orientation, thereby fostering stronger entrepreneurial intentions among university students (Mabhena & Ncube, 2024; Sun et al., 2023). Furthermore, entrepreneurship education programs implemented in secondary schools and universities have been shown to positively influence students' entrepreneurial attitudes, perceived social norms, and intentions to start businesses (Ndofirepi, 2020; Malebana & Mothibi, 2023). In addition, entrepreneurship education enhances opportunity recognition and perceived behavioral control, which significantly influence entrepreneurial intentions and entrepreneurial behavior (Mehdi & Singh, 2025). These results reinforce the argument that entrepreneurship education acts as an important catalyst for stimulating entrepreneurial motivation and venture creation.

Likewise, Ibrahim et al. (2025) reported that exposure to entrepreneurship courses, practical training, and experiential learning activities significantly enhances students' motivation to pursue entrepreneurial careers. However, other studies argue that entrepreneurship education alone may not be sufficient to foster entrepreneurial intention unless it is complemented by mentorship, practical experience, and institutional support systems (Mensah et al., 2023).

Similarly, other studies argue that simply introducing entrepreneurship courses may not guarantee entrepreneurial outcomes if students experience fear of failure, lack of confidence, or limited access to resources. These psychological and contextual barriers may weaken the effectiveness of entrepreneurship education in promoting entrepreneurial intention (Maritz et al., 2021; Sun et al., 2023). Furthermore, institutional factors such as weak entrepreneurial ecosystems, inadequate mentorship, and limited practical exposure can reduce the impact of entrepreneurship education on entrepreneurial intention. In such cases, entrepreneurship education may increase awareness of entrepreneurship but not necessarily translate into a strong intention to start a business.

Overall, the literature indicates that entrepreneurship education plays a critical role in shaping entrepreneurial intention, but its effectiveness depends on several mediating and moderating factors. While many studies confirm a **positive relationship**, others highlight that entrepreneurship education alone may not be sufficient to stimulate entrepreneurial intention without the support of psychological factors (e.g., self-efficacy and motivation) and contextual factors (e.g., institutional support and entrepreneurial ecosystem).

Proposition 1: Entrepreneurship education is positively related to entrepreneurial intention.

Need for Achievement and Entrepreneurial Intention

Need for achievement is a psychological trait that reflects an individual's strong desire to accomplish challenging goals and achieve personal success. Individuals with a high need for achievement are more likely to engage in activities that provide opportunities for personal accomplishment and recognition (Jena, 2020). Also, Entrepreneurship provides a platform for individuals to demonstrate competence, creativity, and independence, making it particularly attractive to individuals with high achievement motivation. Previous studies have found that need for achievement positively influences entrepreneurial intention among university students (Akhtar et al., 2020; Ogunyemi et al., 2023). Furthermore, individuals with high achievement motivation are more likely to accept responsibility, take calculated risks, and pursue innovative opportunities, which are essential characteristics of successful entrepreneurs (Fazlurrahman, 2020). However, some studies have reported mixed findings regarding the relationship between need for achievement and entrepreneurial intention, suggesting that additional contextual variables may influence this relationship (Agustina & Fauzia, 2021).

Several recent studies provide empirical evidence supporting the positive relationship between need for achievement and entrepreneurial intention. For instance, research indicates that individuals with a strong need for achievement tend to display higher motivation to establish new ventures because entrepreneurship provides opportunities for independence, innovation, and personal accomplishment (Akhtar et al., 2020). The study further shows that need for achievement significantly influences entrepreneurial intention both directly and indirectly through entrepreneurial self-efficacy. Similarly, empirical research conducted among university students demonstrates that need for achievement has a **significant positive correlation with entrepreneurial intention**, suggesting that individuals who strive for excellence and personal accomplishment are more inclined to pursue entrepreneurial careers (Ladokun & Adebuseye, 2022). Recent studies also show that need for achievement contributes to entrepreneurial attitudes and risk-taking propensity, which subsequently strengthen entrepreneurial intention among students and potential entrepreneurs (Steenkamp et al., 2024). Recent studies also show that need for achievement contributes to entrepreneurial attitudes and risk-taking propensity, which subsequently strengthen entrepreneurial intention among students and potential entrepreneurs (Steenkamp et al., 2024). Furthermore, studies applying the **Theory of Planned Behavior** indicate that need for achievement functions as an important psychological predictor of entrepreneurial intention by encouraging individuals to seek opportunities for innovation, autonomy, and personal success (Bouichou et al., 2023).

Despite the strong theoretical link between need for achievement and entrepreneurial intention, some studies indicate that the relationship may not always be direct or significant. In many

cases, need for achievement influences entrepreneurial intention **indirectly through mediating variables** such as entrepreneurial self-efficacy, attitude, or perceived behavioral control. For example, research shows that the effect of need for achievement on entrepreneurial intention becomes stronger only when mediated by entrepreneurial self-efficacy, suggesting that individuals may possess achievement motivation but still lack the confidence or skills necessary to start a business (Akhtar et al., 2020).

Similarly, other studies highlight that personality traits such as need for achievement alone are insufficient to predict entrepreneurial intention without complementary factors such as entrepreneurial attitude, institutional support, and access to entrepreneurial resources (Dzomonda & Neneh, 2023). Additionally, contextual barriers such as fear of failure, lack of financial resources, and weak entrepreneurial ecosystems may weaken the influence of need for achievement on entrepreneurial intention. In such situations, individuals with strong achievement motivation may prefer stable employment rather than entrepreneurial risk (Ndour & Asongu, 2024).

These findings indicate that while need for achievement is an important motivational trait, it may not independently guarantee entrepreneurial intention unless supported by favorable psychological, educational, and environmental conditions. Overall, these findings suggest that individuals with a high need for achievement tend to develop stronger entrepreneurial intentions because entrepreneurship offers a pathway for personal fulfillment, goal attainment, and recognition.

The literature suggests that **need for achievement is an important predictor of entrepreneurial intention**, but its influence is often **context-dependent and mediated by other psychological and environmental factors**. Most studies report a **positive relationship**, indicating that individuals with strong achievement motivation are more likely to pursue entrepreneurship. However, some studies demonstrate that the relationship may be **indirect or conditional**, depending on factors such as entrepreneurial self-efficacy, risk tolerance, institutional support, and perceived opportunity. Therefore, contemporary entrepreneurship research increasingly emphasizes the importance of examining **need for achievement alongside other psychological and contextual variables** to better explain entrepreneurial intention.

Proposition 2: Need for achievement is positively related to entrepreneurial intention.

Mentorship as a Moderator

Mentorship is a developmental relationship in which an experienced individual provides guidance, knowledge, and psychosocial support to a less experienced person. In the context of

entrepreneurship education, mentorship allows students to gain practical insights, industry knowledge, and professional networks that facilitate entrepreneurial learning (Gindes et al., 2023). Mentors often serve as role models, providing students with inspiration and confidence to pursue entrepreneurial careers (Baggen et al., 2022). Through mentorship, students can develop stronger entrepreneurial competencies, improve opportunity recognition skills, and gain greater confidence in starting a business. Previous research suggests that mentorship can strengthen the relationship between entrepreneurship education and entrepreneurial intention by providing practical exposure and experiential learning opportunities (Winkler et al., 2023). Similarly, mentorship can reinforce the impact of need for achievement by encouraging individuals to pursue ambitious goals and entrepreneurial success.

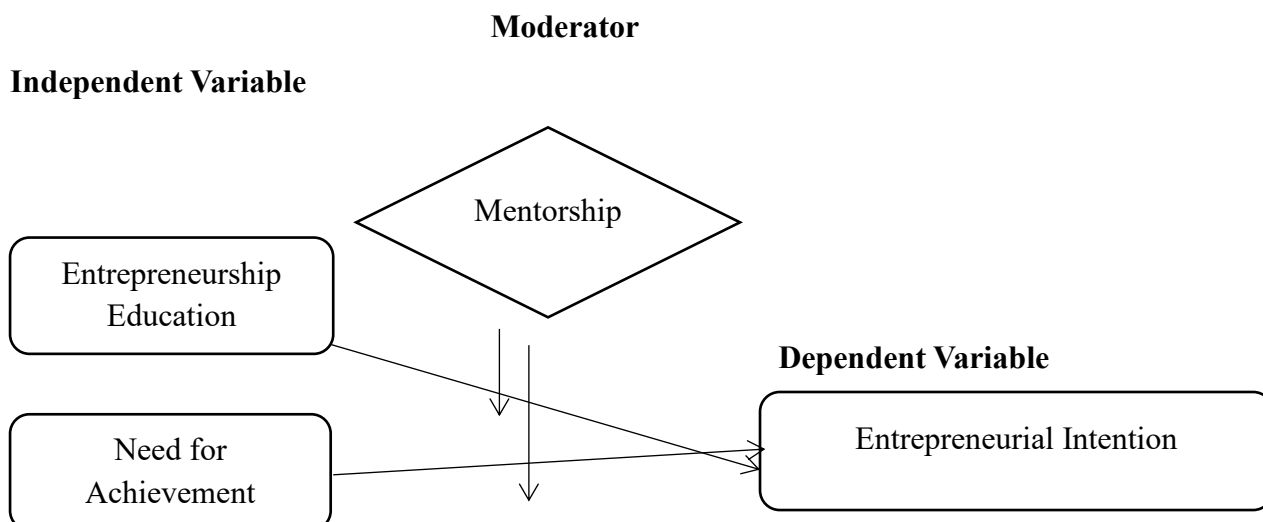
This study is grounded in the Theory of Planned Behavior (TPB), which explains how individual intentions influence behavior. According to the theory, intention is determined by three major factors: attitude toward the behavior, subjective norms, and perceived behavioral control (Ajzen & Schmidt, 2020). In the context of entrepreneurship, entrepreneurial intention reflects an individual's willingness to start a new venture. Positive attitudes toward entrepreneurship, supportive social norms, and confidence in one's ability to perform entrepreneurial tasks significantly increase the likelihood of developing entrepreneurial intentions (Shi et al., 2020).

Therefore, Entrepreneurship education contributes to entrepreneurial intention by shaping students' attitudes toward entrepreneurship and enhancing perceived behavioral control through the development of entrepreneurial skills and competencies (Wardana et al., 2020). Students who receive entrepreneurship education are more likely to perceive entrepreneurship as a viable and desirable career option. Similarly, need for achievement strengthens positive attitudes toward entrepreneurial behavior. Individuals with high achievement motivation are more inclined to pursue entrepreneurial opportunities because entrepreneurship allows them to demonstrate competence and achieve personal goals (Jena, 2020).

Mentorship plays a crucial role in influencing subjective norms and perceived behavioral control within the TPB framework. Mentors provide guidance, knowledge, and emotional support that enhance students' confidence in their entrepreneurial abilities and strengthen their belief that entrepreneurship is socially supported and achievable (Clarysse et al., 2020; Winkler et al., 2023). By incorporating mentorship into the TPB framework, this study extends the theory by demonstrating how mentorship can strengthen the relationship between educational and psychological factors and entrepreneurial intention.

Proposition 3: Mentorship positively moderates the relationship between entrepreneurship education and entrepreneurial intention.

Proposition 4: Mentorship positively moderates the relationship between need for achievement and entrepreneurial intention.



Conclusion and Direction for Future Research

This study provides a conceptual framework that explains how entrepreneurship education and need for achievement influence entrepreneurial intention, with mentorship acting as a moderating factor. By integrating these variables within the Theory of Planned Behavior, the study offers a deeper understanding of the psychological and educational factors that shape students' entrepreneurial aspirations.

Future research should empirically test the proposed model using quantitative methods such as structural equation modeling. Additionally, comparative studies across different universities and countries could provide further insights into the role of mentorship in strengthening entrepreneurial intention among students.

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INNOVATION PERFORMANCE: A CONCEPTUAL FRAMEWORK FOR
ENHANCING SME COMPETITIVENESS IN EMERGING ECONOMIES

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Abstract

Small and medium-sized enterprises (SMEs) are central to employment creation, economic diversification, and private sector development in emerging economies. However, their competitiveness is constrained by resource scarcity, macroeconomic volatility, institutional instability, and limited technological infrastructure. Thus, innovation have become not merely a growth strategy but a survival mechanism. This study develops an integrated, capability-driven conceptual framework to explain how SMEs transform limited resources into innovation performance under conditions of environmental turbulence. Drawing on the Resource-Based View, Dynamic Capabilities Theory, and Absorptive Capacity theory, the paper reconceptualizes innovation performance as a multidimensional and process-oriented construct encompassing product, process, marketing, organisational, and sustainable innovation dimensions. The framework sequences resource allocation capability, knowledge management capability, strategic adaptability capability, and digital orientation into a coherent mechanism through which SMEs can convert scarcity into competitive outcomes. The study further argues that traditional innovation metrics, such as R&D expenditure and patent counts, inadequately capture the incremental, adaptive, and informal innovation practices prevalent in emerging economies. Consequently, a context-sensitive measurement approach is proposed, integrating quantitative efficiency indicators with qualitative assessments of learning orientation, adaptive capability, and strategic agility. By contextualizing established innovation theories within emerging economic realities, the paper advances a structured and capability-centred pathway for enhancing SME competitiveness, resilience, and sustainable development.

Keywords: Innovation performance, Small and medium-sized enterprises, Emerging economies, Dynamic capabilities, Absorptive capacity, Resource-based view

Introduction

Small and medium-sized enterprises (SMEs) play a pivotal role in global economic systems, contributing significantly to employment generation, income distribution, and private sector development. Across both advanced and emerging economies, SMEs constitute the vast majority of registered firms and serve as primary engines of job creation and innovation

(Ayyagari et al., 2007; OECD, 2023; World Bank, 2023). In many emerging economies, SMEs account for a substantial proportion of total employment and contribute meaningfully to national output, thereby reinforcing their importance in achieving sustainable economic development goals (OECD, 2023). However, despite their economic relevance, SMEs often operate under severe structural constraints, including limited access to finance, macroeconomic instability, infrastructural deficits, regulatory uncertainty, and technological gaps (World Bank, 2023; Cirera & Maloney, 2017). These conditions heighten competitive pressures and constrain strategic options, making innovation not merely a growth strategy but a fundamental survival imperative.

Innovation performance (IP) has therefore emerged as a critical construct for understanding how SMEs remain competitive in volatile environments. Innovation performance refers to the extent to which firms successfully transform innovation-related inputs such as knowledge, capabilities, and resources into outputs that enhance competitive positioning, operational efficiency, and market relevance (Dong et al., 2021; Feng et al., 2022). Rather than representing a single measurable outcome, innovation performance is multidimensional and process-driven, encompassing product, process, marketing, organisational, and increasingly, sustainable innovation dimensions (OECD & Eurostat, 2018; Basheer et al., 2022). In emerging economies, where financial and technological resources are constrained, innovation performance often manifests through incremental improvements in processes and marketing practices rather than capital-intensive product research and development.

Traditional innovation metrics such as R&D expenditure and patent counts have been widely used to assess innovation success in developed economies. However, these measures inadequately capture the adaptive, informal, and incremental innovation activities characteristic of SMEs operating in resource-constrained environments (Zizlavsky, 2016; OECD & Eurostat, 2018). In such contexts, innovation frequently arises from strategic resource reconfiguration, knowledge assimilation, managerial improvisation, and digital leverage rather than formal R&D laboratories. This disconnect between measurement approaches and contextual realities highlights the need for a more capability-driven and context-sensitive understanding of innovation performance.

Theoretically, existing research has examined innovation performance through multiple lenses, including the Resource-Based View (RBV), Dynamic Capabilities Theory (DCT), and Absorptive Capacity (ACAP). The Resource-Based View emphasizes the role of valuable and rare resources in generating competitive advantage (Barney, 1991). However, SMEs in emerging economies often lack the scale and resource endowment assumed by traditional RBV

models. Dynamic Capabilities Theory addresses this limitation by shifting attention from resource possession to the ability to sense opportunities, seize them, and reconfigure assets in rapidly changing environments (Teece et al., 1997; Teece, 2018). Complementing this perspective, Absorptive Capacity theory highlights the importance of acquiring, assimilating, and applying external knowledge to sustain innovation (Cohen & Levinthal, 1990; Zahra & George, 2002). Although these theories have been extensively studied independently, limited research has integrated them into a coherent process framework tailored specifically to the structural realities of emerging economies.

Against this backdrop, this study develops an integrated, capability-driven conceptual framework that explains how SMEs in emerging economies transform resource scarcity and environmental volatility into innovation performance. By sequencing resource allocation capability (RBV), knowledge management capability (ACAP), strategic adaptability capability (DCT), and digital orientation into a unified model, the paper moves beyond static resource explanations and proposes a dynamic, learning-oriented pathway to competitiveness. In doing so, the study contributes to innovation literature by contextualizing established theories within emerging market constraints and advancing a multidimensional and capability-centred understanding of innovation performance.

Literature Review

Early scholarship on innovation performance largely equated innovation success with the novelty and commercial viability of new products. However, contemporary perspectives recognize innovation performance as a multidimensional construct encompassing diverse forms of value creation. The Oslo Manual (OECD & Eurostat, 2018) significantly broadened the conceptualization of innovation by identifying four primary types: product, process, marketing, and organisational innovation. Product innovation refers to the introduction of new or significantly improved goods or services designed to meet evolving customer needs. Process innovation involves the implementation of new or substantially improved production or delivery methods that enhance efficiency or quality. Marketing innovation includes significant changes in product design, packaging, promotion, placement, or pricing strategies aimed at improving market reach and customer engagement. Organisational innovation entails the introduction of new business practices, workplace structures, or external relationship management approaches to increase productivity and reduce operational costs.

This multidimensional view of innovation performance reflects an evolution from output-based metrics toward systemic and capability-oriented perspectives. Schumpeter's (1934) foundational theory of economic development emphasized "new combinations" including new

products, new production methods, new markets, and new organisational forms as drivers of economic transformation. Later developments in strategic management further expanded this perspective. The introduction of the balanced scorecard framework highlighted the importance of integrating financial, customer, internal process, and learning perspectives in evaluating firm performance (Kaplan & Norton, 1992). Subsequent research incorporated dynamic capabilities and absorptive capacity to explain how firms sense opportunities, seize them, and transform internal resources into competitive advantage (Teece et al., 1997; Dong et al., 2021; Feng et al., 2022).

More recently, the literature has incorporated sustainability considerations into innovation performance assessment. Sustainable innovation extends beyond economic outcomes to include environmental responsibility and social impact (Basheer et al., 2022). Hart and Milstein (1999) argue that firms must simultaneously create economic value, reduce environmental harm, and contribute to societal well-being to sustain long-term competitiveness. In emerging economies, where environmental degradation and social inequality remain pressing concerns, integrating sustainability into innovation performance frameworks enhances both theoretical relevance and policy applicability.

SMEs in Emerging Economies

SMEs constitute the backbone of many emerging economies, accounting for a substantial proportion of employment and contributing significantly to gross domestic product (Ayyagari et al., 2007; OECD, 2023). Despite their economic importance, SMEs frequently underperform due to structural constraints such as limited technological capacity, inadequate infrastructure, restricted access to finance, and exposure to macroeconomic instability (World Bank, 2023). Operating in niche markets often compels SME owner-managers to assume greater entrepreneurial risk and pursue innovation through incremental improvements in products, services, and business models (Liu et al., 2020).

Macroeconomic volatility, characterized by inflationary pressures, currency fluctuations, and declining consumer purchasing power, further intensifies competitive pressures (World Bank, 2023; Cirera & Maloney, 2017). Under such conditions, innovation becomes an adaptive response mechanism rather than a discretionary growth strategy. However, traditional innovation metrics such as patent counts or R&D intensity fail to capture the informal and incremental innovation activities prevalent among SMEs in resource-constrained environments (Trajtenberg et al., 2001; Zizlavsky, 2016). Consequently, a contextualized and capability-driven understanding of innovation performance is necessary to reflect the realities of emerging economies.

Contextual Determinants of Innovation Performance

Innovation performance does not occur in isolation but is shaped by institutional, technological, and financial environments. SMEs in emerging economies face limited access to credit markets, slow digital transformation, and infrastructural constraints that restrict innovation potential (World Bank, 2023). While digital technologies present opportunities for cost efficiency and expanded market reach, adoption barriers such as low digital literacy and weak infrastructure limit their impact (Cirera & Maloney, 2017). In response to these constraints, firms must develop internal capabilities that enhance learning, knowledge assimilation, and strategic adaptability (Teece, 2018; Zahra & George, 2002). These capabilities mediate the relationship between environmental volatility and innovation outcomes. Consequently, innovation performance in emerging economies is best understood as the outcome of dynamic capability development rather than simple resource possession.

Theoretical Frameworks

Multiple theoretical approaches have explained how internal capabilities and external conditions shape innovation performance. Resource-Based View (RBV) is established on the premise that competitive advantage stems from a firm's unique handful of resources (Barney, 1991). However, this presents a central inconsistency for SMEs in emerging economies, moreover the resources considered to be valuable and rare' in stable economies such as substantial R&D budgets, patented technologies, and deep managerial expertise are practically scarce or rather absent. Consequently, while RBV rightly identifies the strategic goal, it also provides a limited explanation for innovation generation in this context. This shortfall necessitates for a theoretical extension. A Study have shown that integrating technological innovation, management information systems and entrepreneurial innovation improve sustainable performance, supporting the RBV notion that resources and capabilities drive innovation performance (Teece, 2018; Zahra & George, 2002). Furthermore, Dynamic Capabilities (DCT) theory by Teece et al., (1997) resolves this inconsistency by shifting the focus from resource ownership or control to resource composition.

It further posits that, in rapidly changing environments, the critical capability is the firm's ability to sense opportunities, seize, and reconfigure assets. Again, for resource-constrained SME, it translates to strategic adaptability the capacity to improvise with available tools, pivot service offerings based on market feedback, and form agile partnerships. Thus, dynamic capabilities can be viewed as the essential mechanism through which SMEs overcome the resource scarcity highlighted by RBV.

Moreover, the efficiency of this mechanism is contingent on continuous learning, explained by Absorptive Capacity (ACAP) theory by Cohen & Levinthal, (1990). ACAP is the ability to identify, assimilate, transform, and apply external knowledge that provides the fuel for dynamic capabilities. SME's ability to 'sense' market shifts depend on acquiring information from its local networks or environment. Its ability to reconfigure processes depends on adapting knowledge about new, and affordable digital tools. Therefore, ACAP is not to be seen as a separate determinant but the foundational learning process that enables dynamic adaptation. The integrated theoretical logic where RBV defines the problem, Dynamic Capabilities gives the solution mechanism, and Absorptive Capacity provides the enabling process that propel a coherent foundation for understanding SME innovation in emerging economies.

Criticism and Research Gap

Despite significant advances in innovation performance research, three critical gaps remain in the literature. Most existing innovation frameworks are derived from developed economy contexts and implicitly assume relatively stable institutional environments and resource availability. These assumptions limit their explanatory power in emerging economies characterized by macroeconomic instability, infrastructural deficits, and institutional volatility (World Bank, 2023; Cirera & Maloney, 2017). Consequently, existing models may insufficiently capture how SMEs generate innovation under conditions of scarcity and uncertainty. Moreso, input metrics such as R&D expenditure and patents are lagging and do not reflect efficiency, that combines leading indicators like idea generation or knowledge acquisition with lagging indicators like sales or profits that yields a more accurate assessment (Savkín, 2017).

Further, innovation performance measurement continues to rely heavily on input-oriented and lagging indicators such as R&D expenditure and patent counts. While these metrics are appropriate for large firms operating in formal innovation systems, they inadequately reflect the incremental, process-oriented, and adaptive innovation practices prevalent among SMEs in emerging economies (Trajtenberg et al., 2001; Zizlavsky, 2016). There remains a need for measurement approaches that integrate both leading capability indicators such as learning orientation and knowledge assimilation and outcome-based performance metrics.

Although Resource-Based View, Dynamic Capabilities Theory, and Absorptive Capacity theory have each been widely applied to innovation research, they are often examined in isolation. Limited research has developed a sequenced and integrated process model that explains how resource allocation capability, knowledge management capability, strategic adaptability capability, and digital orientation interact to produce innovation performance

within emerging economy contexts. Thus, addressing these gaps requires a context-sensitive, capability-driven framework that moves beyond static resource explanations and captures the dynamic processes through which SMEs convert scarcity and volatility into competitive innovation outcomes. This study responds to this need by proposing an integrated conceptual model tailored to the structural realities of emerging economies.

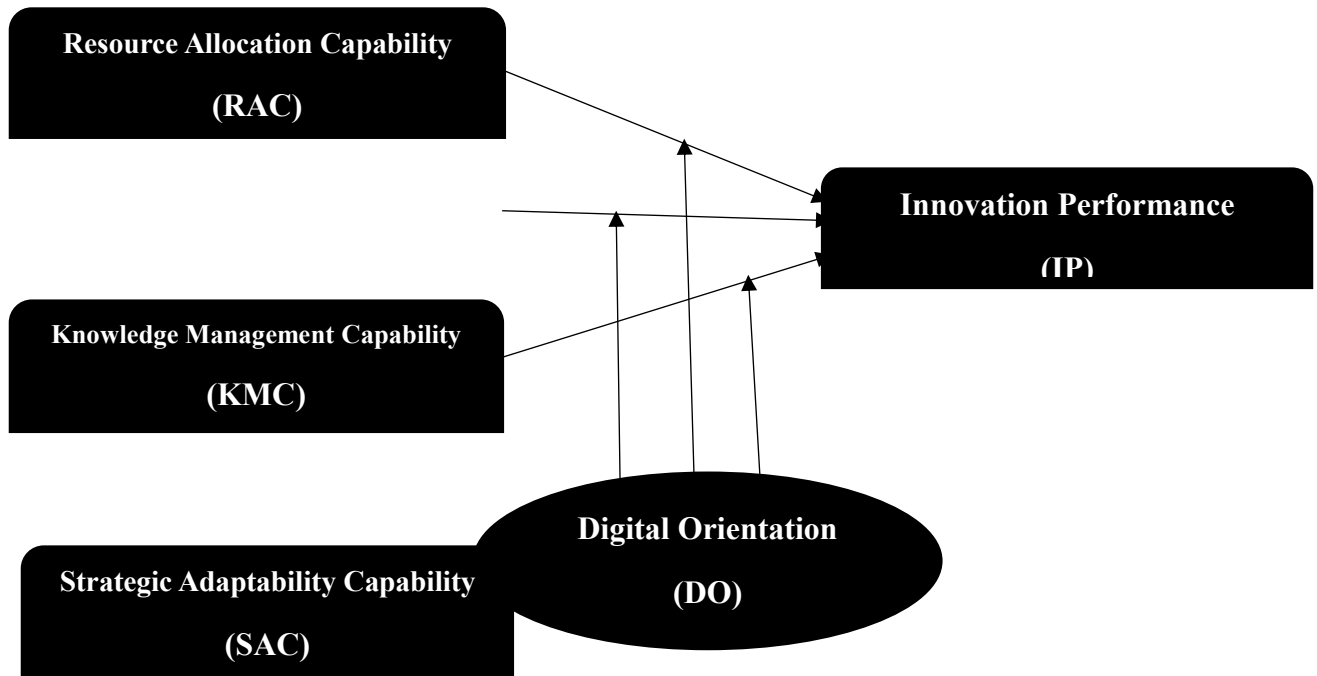
Analysis of Determinants, Dimensions, and Measurement

Innovation performance in SMEs must be understood as the outcome of a firm's capacity to navigate the dual challenge of scarcity and volatility through learning and adaptation in emerging economy (Feng et al., 2022). This process is not just a list of inputs but a dynamic system where internal drivers function as the antecedents to critical capabilities, and external conditions act as moderators that enable or constrain the entire system. Managerial capabilities, relational social capital, and a learning-oriented culture are not standalone advantages; they are the foundational resources that build a firm's absorptive capacity its ability to source and internalize knowledge from limited networks. This knowledge, combined with strategic adaptability that is, a core dynamic capability, allows for the reconfiguration of scarce assets into innovative outcomes. Importantly Dong et al. (2021). Thus, the specific form of these outcomes is context-dependent. Given resource constraints, the most salient innovation dimensions for these SMEs are often process innovations that optimize efficiency and marketing innovations that leverage low-cost digital tools for market reach, instead of capital-intensive product R&D.

Accordingly, the external environment characterized by institutional voids, digital divides, and financial market imperfections it is not just silent in the background, it directly moderates the strength of the connection between internal capabilities and innovation success (Feng et al., 2022). Notably, a strong collaborative network that is, an internal driver may fail to enhance innovation if policy instability which is an external condition disrupts trust and continuity. This integrated view necessitates an equally nuanced approach to measurement (Liu et al., 2020). Traditional, lagging metrics like R&D expenditure or patent counts are often misaligned with the reality of incremental, informal innovation in these settings (Trajtenberg, Henderson & Jaffe, 2001). Thus, comprehensive assessment must therefore combine efficiency-focused quantitative indicators like cost savings from new processes, revenue growth from new market channels with qualitative evaluations of the firm's adaptive culture, learning processes, and strategic agility. This holistic measurement philosophy aligns basically with the theoretical position that innovation performance is a capability-driven phenomenon (Dong et al., 2021).

Hence, we ensure that assessment captures not only the outcomes but also the resilient and adaptive processes that are essential for competitiveness in volatile emerging markets.

Proposed Model



Research Model 2026

Proposed Conceptual Framework

The above model shows a proposed and integrated, capability-driven framework that explains how small and medium-sized enterprises (SMEs) in emerging economies achieve innovation performance under conditions of resource scarcity and environmental volatility. Drawing on the Resource-Based View (RBV), Dynamic Capabilities Theory (DCT), and Absorptive Capacity (ACAP), the framework conceptualizes innovation performance not as a direct function of resource abundance but as the outcome of a structured process of resource deployment, knowledge assimilation, and strategic reconfiguration. Within this model, resource allocation, knowledge management, digital orientation, and strategic adaptability are positioned as interrelated drivers of innovation performance, each grounded in a specific theoretical lens.

From the perspective of the Resource-Based View (Barney, 1991), competitive advantage arises from valuable and strategically deployed resources. However, in emerging economies, SMEs rarely possess abundant R&D capital or proprietary technologies. Therefore, the relevant strategic question shifts from resource ownership to resource prioritization. In this framework, resource allocation represents the firm’s ability to direct scarce financial, human, and technological resources toward innovation-oriented activities. Rather than emphasizing

resource possession, the model highlights the efficiency and intentionality of resource deployment as the foundational condition for innovation performance. Thus, RBV informs the model by identifying resource allocation as the structural base upon which innovation capabilities are built.

While resource allocation provides the foundation, innovation in volatile environments requires learning and knowledge transformation. Absorptive Capacity theory (Cohen & Levinthal, 1990) explains that firms must acquire, assimilate, transform, and apply external knowledge to innovate successfully. In this model, knowledge management operationalizes absorptive capacity by capturing the firm's routines for gathering market intelligence, sharing internal knowledge, engaging external networks, and applying new insights to operational processes. Knowledge management therefore supplies the cognitive infrastructure that fuels innovation capability. Without effective knowledge assimilation and internal learning processes, resource allocation alone cannot generate sustainable innovation outcomes.

The transformation of resources and knowledge into innovation outputs occurs through strategic adaptability, which represents the model's dynamic capability mechanism. According to Dynamic Capabilities Theory (Teece, Pisano, & Shuen, 1997), firms operating in turbulent environments must continuously sense opportunities, seize them, and reconfigure their assets. In this framework, strategic adaptability reflects the SME's ability to pivot business models, adjust service offerings, restructure internal processes, and respond rapidly to environmental change. It functions as the mediating mechanism through which allocated resources and acquired knowledge are translated into concrete innovation outcomes. Thus, while RBV defines the strategic resource base and ACAP provides the learning engine, DCT explains the adaptive process that converts these inputs into innovation performance.

Digital orientation further enhances this capability-driven process. In emerging economies, digital technologies offer cost-efficient pathways for innovation, particularly in marketing, customer engagement, and process optimization. Digital orientation reflects the firm's strategic commitment to leveraging digital tools, analytics, and platforms to improve operational efficiency and market responsiveness. Within the framework, digital orientation strengthens knowledge acquisition, facilitates resource optimization, and accelerates adaptive responses, thereby amplifying the impact of strategic adaptability on innovation performance. Rather than acting as a standalone determinant, digital orientation functions as an enabling capability that enhances the efficiency of the resource–knowledge–adaptability cycle.

Innovation performance is conceptualized as a multidimensional outcome encompassing product, process, marketing, organizational, and sustainable innovation dimensions. However,

consistent with the realities of resource-constrained environments, the framework recognizes that incremental process and marketing innovations often yield more immediate and feasible competitive advantages than capital-intensive product research and development. Consequently, innovation performance is understood not merely as patent counts or R&D intensity, but as the firm's demonstrated capacity to reconfigure limited resources into adaptive and competitive outcomes across multiple dimensions.

Overall, the integrated logic of the framework follows a coherent theoretical sequence. Resource allocation, grounded in RBV, establishes the strategic base; knowledge management, derived from absorptive capacity theory, fuels learning and knowledge transformation; strategic adaptability, rooted in dynamic capabilities theory, converts these inputs into actionable innovation; and digital orientation enhances the efficiency of this transformation. Through this structured process, SMEs in emerging economies transform scarcity and volatility into competitive innovation performance. This integrated model advances existing literature by moving beyond static resource explanations and offering a context-sensitive, capability-driven framework tailored to the realities of emerging markets.

Discussion and Implications

In this study, the conceptual review has constructed an integrated understanding of innovation performance (IP) for SMEs in emerging economies. Moving beyond just listing of factors, hence the analysis reveals that innovation performance is not a simple input-output function in this context but a capability-driven adaptation process. The central proposition is that SMEs navigate the dual challenge of resource scarcity and market volatility by developing and deploying higher-order learning and adaptive capabilities. The proposed integration of Resource-Based View (RBV), Dynamic Capabilities, and Absorptive Capacity theories provides a logical coherent process, while RBV identifies the strategic goal, Dynamic Capabilities describe the essential mechanism of resource reconfiguration, and Absorptive Capacity constitutes the foundational learning process that fuels innovation performance.

Theoretical and Practical Implications

This study advances innovation literature in three important ways. First, it reconceptualizes innovation performance within the structural constraints of emerging economies by shifting the analytical focus from resource abundance to resource scarcity. While the Resource-Based View traditionally emphasizes the possession of valuable and rare resources (Barney, 1991), this study reframes the discussion toward the strategic allocation and prioritization of scarce assets, thereby adapting RBV to contexts characterized by institutional volatility and capital constraints.

Again, the study offers a sequenced integration of Resource-Based View, Dynamic Capabilities Theory, and Absorptive Capacity theory. Rather than treating these theories as parallel explanatory independent, the framework establishes a causal and process-oriented logic: resource allocation capability (RBV) provides the structural base, knowledge management capability (ACAP) fuels learning and assimilation, and strategic adaptability capability (DCT) transforms these inputs into innovation performance. This structured theoretical sequencing enhances explanatory clarity and provides a more coherent methods that links internal capabilities to innovation outcomes.

Furthermore, the framework prioritizes incremental process and marketing innovation pathways as more feasible and impactful routes to competitiveness for SMEs in emerging economies. By challenging the dominance of R&D expenditure and patent-based metrics (Trajtenberg et al. 2001; OECD & Eurostat, 2018), the study proposes a capability-driven and context-sensitive measurement approach that better reflects informal and adaptive innovation practices prevalent in resource-constrained environments.

For SME managers, the framework emphasizes capability development over capital accumulation. The findings suggest that investing in knowledge management routines, fostering digital orientation, and cultivating adaptive decision-making processes may yield stronger innovation outcomes than pursuing capital-intensive product R&D strategies. For policymakers, the study underscores the importance of strengthening institutional support systems that enhance learning networks, digital accessibility, and managerial training rather than focusing exclusively on financial subsidies.

Conclusion, Limitations, and Future Research

This paper has argued that enhancing the competitiveness of SMEs in emerging economies requires a reconceptualization of innovation performance. By synthesizing key theoretical lenses, it presents innovation not as a product of abundant resources but as the outcome of a firm's capacity to learn, adapt, and reconfigure its limited assets in a volatile context. The proposed integrated framework positions absorptive capacity and dynamic capabilities as the critical mediating mechanisms that transform basic resources and challenging conditions into sustainable competitive advantage, most effectively through context-sensitive innovation in processes and marketing. This capability-centric view offers a more nuanced and actionable pathway for both SME strategy and public policy aimed at fostering inclusive and resilient economic development.

As a conceptual study, this paper is inherently limited by its lack of empirical validation. The proposed relationships and logic, while grounded in existing literature, remain propositions to

be tested. Furthermore, the broad categorization of emerging economies may lustre over significant regional, and sectoral heterogeneities that could influence the dynamic forces described. The framework provides a generalizable logic but must be adapted to specific industrial contexts for precise application. Moreover, the conceptual framework and identified gaps direct several promising avenues for future empirical studies. Mainly, research is needed to operationalize and test the core propositions. This includes, the testing of the integrated model by conducting a quantitative study through a structural equation modeling (SEM), by testing the proposed relationship statistically, with either moderating or mediating effect, investigating how digital orientation influence both relationships. Hence, future research can ground the conceptual logic in empirical reality by addressing this thesis, which will further refine scholars understanding on how SMEs thrive through innovation performance in emerging economies.

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EFFECT OF CELEBRITY ATTRACTIVENESS, CELEBRITY EXPERTISE,
CELEBRITY TRUSTWORTHINESS AND CELEBRITY BRAND FIT ON
CUSTOMER PATRONAGE OF MTN NIGERIA

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Abstract

This study assessed the influence of celebrity attractiveness, expertise, trustworthiness, and brand fit on customer patronage among subscribers of MTN Nigeria, the largest telecommunications company in the country and was guided by credibility theory. The study employed a cross-sectional survey design, targeting a large population of approximately 77.7 million MTN subscribers. The study employed sample size of 520 to accommodate potential non-responses. Due to lack of a comprehensive sampling frame, purposive sampling was utilized. Data analysis was conducted using PLS-SEM on SMARTPLS software. The findings revealed that celebrity attractiveness and expertise significantly impact customer patronage, while trustworthiness and brand fit do not show a significant effect. The study recommends that MTN Nigeria should prioritize attractive and expert celebrities in their endorsements to significantly enhance consumer patronage.

Keywords: Celebrity, Patronage, MTN Nigeria, MTN subscribers

1. Introduction

Customer patronage may be among the factors contributing to the decline in the telecommunications sector's GDP contribution in the first quarter of 2024. Fiiwe et al. (2023) opined that a reduction in customer patronage can directly impact revenue generation and overall industry performance. Thus, as customer expectations evolve and competition intensifies, telecom operators such as MTN Nigeria must continuously innovate and enhance

service offerings to maintain and grow their subscriber base. Factors such as pricing (Carter et al., 2023), and service quality (Rahman et al., 2020), including celebrity attractiveness, expertise, trustworthiness, and brand fit (Odili & Ukpai, 2021), play crucial roles in influencing customer patronage. The decline to 12.60% in the first quarter as reported by Jaiyeola (2024) suggests that there may have been lapses in effectively addressing these factors, highlighting the need for strategic measures to bolster customer patronage and regain market momentum.

Celebrity attractiveness, expertise, trustworthiness, and brand fit are important factors affecting customer patronage in the telecommunications industry. Generally, research indicates that celebrity endorsements can significantly influence consumer behaviour, enhancing brand perception and loyalty (Macheka et al., 2023). In highly competitive telecom sector, the popularity and credibility of celebrities can create a strong emotional connection with consumers, thereby boosting patronage. This marketing strategy is particularly effective in markets like Nigeria, where celebrity culture is influential (Obiageli & Chukundah, 2018).

The telecommunications industry is critical to Nigeria's economy, accounting for a sizable portion of the country's GDP. As of the second quarter of 2023, the sector's contribution had increased to an astonishing 16%, according to the Nigerian Communications Commission (NCC) and confirmed by the Nigeria Bureau of Statistics (Okonji, 2023). This represents a significant increase from 14.13% in the first quarter of 2023, and it tops the previous high of 15% in the second quarter of 2022 (Premium Times, 2023). According to Jaiyeola (2024), the industry's expansion is largely due to the collaborative efforts of regulatory agencies, particularly the NCC, which has created an atmosphere of regulatory excellence and efficiency in operation. This rise has had a positive effect on many aspects of the Nigerian economy, emphasising the importance of the telecommunications sector in national development. However, despite these improvements, the sector's GDP contribution fell to 12.60% in the first quarter of 2024, showing continued problems and the need for continuous strategic interventions (Jaiyeola, 2024). The decline in the sector's GDP contribution to 12.60% in the first quarter of 2024 could partly be attributed to the effectiveness (Özer et al., 2022).

In this study, the effectiveness of celebrity attractiveness, expertise, trustworthiness, and fit with the brand on customer patronage will be measured. Anyadighibe et al. (2022) argued that these factors are critical in shaping consumer attitudes and behaviours. Celebrity attractiveness can enhance the appeal of a brand, making it more relatable and desirable (Gilal

et al., 2023). On the other hand, expertise reflects the perceived knowledge and experience of the celebrity in relation to the endorsed product, which can boost consumer confidence (Deshbhag & Mohan, 2020), while trustworthiness pertains to the credibility and reliability of the celebrity, fostering a sense of authenticity and loyalty among consumers (Punjani & Kumar, 2021). Lastly, the fit between the celebrity and the brand ensures that the endorsement feels natural and convincing, enhancing its overall impact (Osorio et al., 2021). These dimensions will be assessed to determine their influence on customer patronage in the Nigerian telecommunications industry, by focusing on Mobile Telephone Network (MTN) Nigeria, the largest telecommunication company in Nigeria.

There are very few studies in developing economies like Nigeria that have examined the effect of celebrity attractiveness, expertise, trustworthiness, and brand fit. Although some research has been conducted in the area of celebrity endorsement but significant gaps still exist. For instance, Obiageli and Chukundah (2018) investigated celebrity endorsements and customer patronage in the context of the Nigeria Bottling Company but limited their measurement of celebrity endorsement to coverage and frequency. This narrow approach fails to capture the multifaceted nature of celebrity endorsements, potentially overlooking key factors that influence customer behaviour. Similarly, Odili and Ukpai (2021) focused on celebrity endorsement and customer patronage, and incorporated measurements such as celebrity expertise, fit, and credibility but omitted celebrity attractiveness. Moreover, their use of older statistical tools contrasts with the capabilities of more advanced methods like SMARTPLS, which offer a more robust analysis of complex relationships.

In the same vein, Jain (2024) examined the relationship between celebrity endorsement and customer patronage in Nigeria, utilizing skills, trustworthiness, credibility, and attractiveness of celebrities as metrics. However, the study's reliance on simple correlation and percentages for data analysis is considered too simplistic and lacks the rigor necessary for deeper insights. Additionally, Ojo (2020) also explored celebrity endorsement on consumer patronage but treated celebrity endorsement as a unidimensional variable, missing the opportunity to understand its multidimensional impact. Likewise, Anioke (2022) focused on celebrity endorsement and patronage of skincare products among female lecturers in South-East Nigeria but treated celebrity endorsement also as a unidimensional variable and did not address its broader implications. These identified gaps in the literature highlight the need for a comprehensive study that employs advanced statistical tools and considers the

multidimensional nature of celebrity attractiveness, expertise, trustworthiness, and brand fit specifically within the Nigerian telecommunications industry by focusing on Mobile Telephone Network (MTN) Nigeria.

MTN Nigeria has consistently maintained its position as the market leader. As of February 2022, MTN held a significant market share of 37.9%, outperforming other major carriers like Globacom and Airtel, which each held around 28% (Taylor, 2024). This stability and dominance in the market underscore MTN's pivotal role in the Nigerian telecom landscape. The company's extensive reach and robust customer base make it an ideal focus for this study. Hence, the aim of this study is to assess the effect of celebrity attractiveness, expertise, trustworthiness, and fit with the brand on the patronage of customers of MTN Nigeria.

1. Literature Review

2.1 Conceptualization

2.1.1. Customer Patronage

Customer patronage refers to the frequency and consistency with which customers choose to purchase and engage with a particular brand or service. Customer patronage is often influenced by the perceived appeal, credibility, and relevance of the celebrity associated with the brand (Vannucci et al., 2023). This concept extends beyond mere transactional loyalty; it encompasses the emotional and psychological connections customers form with a brand, often inspired by their affinity for the endorsing celebrity (Syah & Olivia, 2022). In industries like telecommunications, where products and services are often commoditized, the ability of a celebrity to drive customer patronage can be a crucial differentiator. For instance, a well-known celebrity can enhance a brand's image, making it more relatable and attractive to target audiences, thereby increasing the likelihood of repeat purchases and long-term loyalty (Niharika & Yadav, 2023). Recent research suggests that the effectiveness of customer patronage depends on several factors, including the celebrity's credibility, attractiveness, etc. (Mookda et al., 2020; Carlson et al., 2020). These factors can significantly influence customers' attitudes towards the brand and their subsequent patronage behaviour. Additionally, the increasing role of social media in marketing strategies means that celebrities can engage directly with consumers, further influencing their purchasing decisions (Wahab et al., 2022).

2.1.2. Celebrity Attractiveness and Customer Patronage

Celebrity attractiveness is one of the most prominent measures in evaluating the effectiveness of celebrity endorsements. It refers to the physical appeal and charisma of the celebrity, which can significantly influence consumer attitudes towards the endorsed product (Gilal et al., 2023). Hand and Scott (2022) opined that attractive celebrities are often perceived as more persuasive and capable of enhancing the desirability of a product. This perception stems from the halo effect, where the positive attributes associated with a celebrity's physical appearance extend to the product, thereby improving its perceived quality and appeal (Deshbhag & Mohan, 2020). For example, in the beauty and fashion industries, the use of attractive celebrities can create aspirational associations, encouraging consumers to purchase products in the hope of achieving similar attractiveness. However, the reliance on attractiveness alone can sometimes overshadow other important attributes, such as credibility and expertise, which are crucial for more complex and high-involvement products (Gilal et al., 2023).

According to Oteh et al. (2023), celebrity attractiveness can significantly drive customer patronage by creating a strong emotional connection with the brand, as consumers are often drawn to products endorsed by physically appealing celebrities. This attraction can lead to increased brand recall and preference, as customers may associate the celebrity's appealing qualities with the product itself, thereby enhancing its perceived value (Parmar et al., 2020). From the foregoing, the study hypothesised that:

H1: Increase in celebrity attractiveness will lead to a significant increase in the patronage of MTN services in Nigeria.

2.1.3. Celebrity Expertise and Customer Patronage

Celebrity expertise refers to the knowledge, skills, or experience a celebrity is perceived to have in relation to the endorsed product. This measure is particularly important in endorsements where the credibility and reliability of the information are critical to consumer decision-making (Zhang et al., 2021). For instance, a professional athlete endorsing sports equipment or a well-known chef promoting kitchen appliances are examples where celebrity expertise adds significant value (Qiu et al., 2021). Chen et al. (2021) stated that expertise not only enhances the believability of the endorsement but also aligns the product with the celebrity's known strengths, thereby reinforcing the brand message. The impact of celebrity expertise is particularly notable in industries such as technology, healthcare, and fitness, where consumers

seek informed opinions and advice (Zhang et al., 2021). However, overemphasizing expertise in categories where it is less relevant can lead to disinterest or skepticism among consumers.

Chou et al. (2024) argued that celebrity expertise plays a crucial role in enhancing customer patronage, particularly when the endorser is perceived as knowledgeable and skilled in the relevant field. This expertise adds credibility to the endorsement, making consumers more likely to trust the celebrity's recommendations and view the product as high-quality and reliable (Gilal et al., 2023). For instance, when a renowned athlete endorses a sports brand, their expertise in the sport can reassure customers about the product's performance and authenticity (Kim et al., 2020). This trust in the celebrity's expertise can lead to increased consumer confidence in the product, ultimately driving higher sales and fostering customer loyalty. From the foregoing, the study hypothesised that:

H2: Increase in celebrity expertise will lead to a significant increase in the patronage of MTN services in Nigeria.

2.1.4. Celebrity Trustworthiness and Customer Patronage

Trustworthiness is a measure of the perceived honesty, integrity, and dependability of the celebrity endorsing the product. It plays a crucial role in building consumer trust, which is essential for the effectiveness of any endorsement campaign (Lee et al., 2022). A trustworthy celebrity can lend their reputation to a brand, making it appear more reliable and sincere. This is particularly important in industries where consumer confidence is paramount, such as finance, health, and safety-related products (Zhu et al., 2022). Hussain et al. (2020) argued that trustworthiness also mitigates the risk of backlash that can occur if consumers perceive the endorsement as purely commercial or insincere. However, trustworthiness is a subjective measure and can be influenced by various factors, including the celebrity's past behaviour, public perception, and the nature of the endorsed product (Zhu et al., 2022). A scandal or controversy involving the celebrity can quickly erode trust and negatively impact the brand.

Celebrity trustworthiness is a vital component in determining the effectiveness of an endorsement and its impact on customer patronage. Trustworthiness refers to the perceived honesty, integrity, and credibility of the celebrity, which significantly influences consumers' trust in the endorsed product (Huaman-Ramirez & Merunkam, 2021). According to Hussain et al. (2020), when consumers perceive a celebrity as trustworthy, they are more likely to believe

the claims made about the product and feel confident in their purchasing decisions. For example, a celebrity known for their ethical behaviour and transparency can enhance the perceived reliability of a brand, encouraging consumers to patronize the product. This trust can result in stronger brand loyalty and increased sales, as consumers are more likely to return to a brand endorsed by a celebrity they trust. The study thus hypothesised that:

H3: Increase in celebrity trustworthiness will lead to a significant increase in the patronage of MTN services in Nigeria.

2.1.5. Celebrity Fit with the Brand and Customer Patronage

Celebrity fit, also known as congruence, refers to the perceived alignment between the celebrity and the brand or product being endorsed. This measure encompasses both the celebrity's image and the brand's identity, ensuring that the endorsement appears natural and authentic (Osorio et al., 2022). A strong fit can enhance the credibility of the endorsement, as consumers are more likely to believe that the celebrity genuinely uses and supports the product (Ahmadi & Ieamsom, 2021; Muniz & Guzmán, 2021). For example, a celebrity known for their environmental activism endorsing an eco-friendly brand would likely resonate well with consumers. Conversely, a poor fit can lead to cognitive dissonance, where consumers struggle to reconcile the celebrity's image with the brand, potentially leading to skepticism or distrust. The concept of celebrity fit underscores the importance of strategic alignment in endorsement deals, ensuring that the partnership enhances the brand's image rather than detracting from it (Bauer et al., 2022).

According to Um (2022), a good fit enhances the credibility of the endorsement, making it more believable and relatable to the target audience. For instance, a sports brand endorsed by a well-known athlete creates a logical and authentic connection, making it more likely for consumers to associate the brand with qualities like performance and reliability (Feder, 2023). This perceived congruence can lead to higher customer patronage, as consumers are more inclined to support brands that resonate with their values and lifestyle. Consequently, the study hypothesised that:

H4: Increase in celebrity fit with brand will lead to a significant increase in the patronage of MTN services in Nigeria.

2.1.6. Source Credibility Theory

The source credibility theory is pivotal in explaining this study, as it asserts that the effectiveness of a persuasive message is largely determined by the perceived credibility of the source (Lee et al., 2022), which includes the dimensions of expertise, trustworthiness, and attractiveness. These elements are critical in shaping consumer perceptions and influencing their purchasing decisions. For instance, a celebrity known for their expertise in a specific area, such as sports or beauty, enhances the perceived quality and reliability of the endorsed product (Sari et al. 2021), thereby boosting customer patronage. Similarly, a trustworthy celebrity instills confidence and reduces scepticism (Sari et al., 2021), while an attractive celebrity increases the appeal of the product (Zhu et al., 2021). Thus, the source credibility theory provides a comprehensive framework for understanding how different facets of a celebrity's public persona can affect consumer attitudes and behaviors, making it highly relevant for this study on the impact of celebrity endorsement on customer patronage.

3 METHODOLOGY

The research employed a cross-sectional methodology, which precluded the use of a longitudinal study. The extended time frame necessary for longitudinal surveys, as highlighted by Kothari and Garg (2014), rendered them impractical for this study. A cross-sectional survey was chosen instead, as it offers a more efficient and cost-effective alternative (Sekaran & Bougie, 2010).

The target population for this study comprised all subscribers of MTN Nigeria, which stood at approximately 77.7 million. To ensure that the findings could be generalized to this large population with a known level of precision, a sample size calculation based on statistical inference was employed. Given that the exact proportion of key characteristics within the population was unknown *a priori*, a conservative approach was adopted. Using the formula for a proportion for a large, theoretically infinite population (Cochran, 1977), the initial sample size was calculated assuming a 50% response distribution ($p = 0.5$), a 95% confidence level ($z = 1.96$), and a 5% margin of error ($e = 0.05$). This yielded a minimum target sample size of 384. To align with established conventions for such calculations, the recommendation by Rose et al. (2015) was consulted, which similarly supports a minimum of 400 respondents for large populations under these parameters.

To mitigate the impact of potential non-response, incomplete questionnaires, or data invalidity common challenges in survey research this initial sample size was inflated by 30%. This

adjustment, consistent with the guidance provided by Israel (2013), resulted in a final target sample size of 520 respondents. This sample size is statistically adequate to support inferences about the broader population of MTN Nigeria subscribers within the defined margin of error. While the sample size was determined using probabilistic principles, a comprehensive and current sampling frame of all MTN Nigeria subscribers was unavailable to the researchers. Consequently, a probability sampling method could not be implemented. To address this constraint, the study employed a purposive sampling technique. This non-probability approach was strategically utilized to deliberately recruit participants who met the core inclusion criterion being active MTN Nigeria subscribers ensuring that the final sample of 520 respondents possessed the essential characteristics relevant to the study's objectives. Although this approach limits the ability to make claims of statistical representativeness in the strictest sense, the sample size was nevertheless calculated to provide a robust basis for analytical generalization and to test theoretical propositions within the population of interest.

The study utilised copies of questionnaire based on items previously applied by researchers to examine the variables of the study. Specifically, four items each were used to measure celebrity attractiveness, celebrity expertise, celebrity trustworthiness and celebrity fit developed by McCracken (1989), while and five items was used to measure customer patronage developed by Sari et al. (2021). The questionnaire was on a seven-point Likert scale.

Preliminary tests were conducted on the data for data analysis to assess its reliability and validity. Composite reliability and Average Variance Extracted (AVE) were utilised for this objective. According to Garson (2016), the composite reliability coefficient should be ≥ 0.7 , and the AVE coefficient should be ≥ 0.5 . PLS-SEM was used to test the hypotheses of the study processed on SMARTPLS statistical software. The study's hypotheses were tested using a 5% significance level. If the P value is less than 0.05, the null hypothesis will be rejected; otherwise, it will not be rejected.

4. Results

Table 1: Construct Reliability and Validity

Construct	Items	Loadings	AVE	CR
Celebrity Attractiveness	CA1	0.761	0.566	0.796
	CA2	0.705		
	CA4	0.789		

Celebrity Expertise	CE2	0.901	0.785	0.736
	CE4	0.871		
Celebrity Trustworthiness	CT2	0.883	0.718	0.836
	CT3	0.840		
	CT4	0.817		
Celebrity Fit	CF1	0.845	0.633	0.741
	CF2	0.734		
	CF3	0.804		
Customer Patronage	CP2	0.877	0.683	0.867
	CP3	0.737		
	CP4	0.859		
	CP5	0.827		

NOTE: Specific items (CA3, CE1, CE3, CT1, CF4, and CP1) were deleted due to poor loadings. AVE stands for Average Variance Extracted while CR represents Composite Reliability.

Hair et al. (2019) highlight the importance of maintaining factor loadings above the 0.7 threshold. As shown in Table 1, all items exceed this criterion, indicating a strong alignment with their respective constructs. Additionally, the composite reliability coefficients for all constructs surpass the 0.7 minimum requirements, thereby fulfilling the composite reliability criterion (Tabachnick & Fidell, 2013). The Average Variance Extracted (AVE) for all constructs also meets the minimum standard of 0.5, as set forth by Tabachnick and Fidell (2013). This evidence confirms the presence of convergent validity. Furthermore, discriminant validity was evaluated using the data provided in Table 2.

Table 2: Discriminant Validity using Heterotrait-monotrait Ratio

	1	2	3	4	5
1. Celebrity Attractiveness					
2. Celebrity Expertise	0.756				
3. Celebrity Fit	0.589	0.780			
4. Customer Patronage	0.821	0.775	0.609		
5. Celebrity Trustworthiness	0.788	0.795	0.590	0.661	

The HTMT values for each pair of constructs are well below the recommended threshold of 0.85, indicating that each construct is distinct from others, thereby supporting the existence of discriminant validity (Hair et al., 2019). This indicates that each construct is more closely related to its own indicators than to those of other constructs, thereby supporting the existence of discriminant validity. The distinct methods used to assess these constructs further confirm that they measure separate underlying concepts in the study.

Table 3: Path Coefficient

Hypotheses	Beta Value	Standard Error	T Stat	P Value	Decision
H ₀₁ : CA->CP	0.333	0.091	3.675	0.000	Supported
H ₀₂ : CE->CP	0.275	0.122	2.260	0.024	Supported
H ₀₃ : CT->CP	0.154	0.122	1.270	0.204	Not Supported
H ₀₃ : CF->CP	0.133	0.111	1.198	0.231	Not Supported

Table 3 presents the path coefficients and statistical tests for the study's hypotheses regarding the impact of various dimensions of celebrity endorsement on customer patronage (CP). The hypothesis H₀₁, which posits that celebrity attractiveness (CA) positively influences customer patronage, is supported with a significant beta value of 0.333 and a p-value of 0.000. Similarly, H₀₂, suggesting that celebrity expertise (CE) affects customer patronage, is also supported, as indicated by a beta value of 0.275 and a p-value of 0.024. However, the hypotheses H₀₃ and H₀₄, concerning celebrity trustworthiness (CT) and celebrity fit with the brand (CF), are not supported. These hypotheses have beta values of 0.154 and 0.133, respectively, with p-values above the threshold of 0.05 (0.204 for CT and 0.231 for CF), indicating a lack of significant impact on customer patronage.

Table 4: R Square

Construct	R Square
Customer Patronage	0.530

Table 4 displays the R Square value for the construct of customer patronage, which is 0.530. This indicates that the model explains 53% of the variance in customer patronage based on the factors considered in the study, such as celebrity attractiveness, celebrity expertise, celebrity trustworthiness, and celebrity fit with the brand. An R Square value of 0.530 suggests that the

independent variables together provide a moderate level of explanatory power in predicting customer patronage within the context of celebrity endorsements. This level of explanation highlights the significance of these factors while also acknowledging that other factors not included in the model may also influence customer patronage.

5. Discussion of Findings

The findings from Table 3 demonstrate that celebrity attractiveness (CA) has a significant positive influence on customer patronage (CP), as indicated by a beta value of 0.333 and a p-value of 0.000. This suggests that consumers are more likely to patronize a product or service when the endorsing celebrity is perceived as attractive. The significant impact of celebrity attractiveness on customer behaviour can be attributed to the halo effect, where the positive attributes associated with an attractive celebrity extend to the endorsed product, enhancing its appeal and desirability (Zhu et al., 2021). This aligns with previous studies, such as those by Hand and Scott (2022) and Gilal et al. (2023), which found that attractive celebrities are perceived as more persuasive and can significantly boost the attractiveness and credibility of a product. The findings underscore the importance of selecting celebrities with high physical appeal for endorsement campaigns, particularly in industries like beauty and fashion, where physical attractiveness is a key driver of consumer decisions.

Additionally, the results from Table 3 indicate that celebrity expertise (CE) significantly influences customer patronage (CP), as evidenced by a beta value of 0.275 and a p-value of 0.024. This finding suggests that consumers are more likely to patronize a product or service endorsed by a celebrity perceived to have relevant expertise or knowledge in the area. The positive impact of celebrity expertise on customer behaviour can be attributed to the perceived credibility and trustworthiness that comes with expert endorsements. When consumers view a celebrity as knowledgeable or skilled in a particular domain, they are more inclined to trust the recommendations and endorsements from that celebrity, believing that the product or service endorsed is of high quality or value. This outcome is consistent with previous research, such as that by Gilal et al. (2023), which emphasized the role of expertise in enhancing the persuasiveness of endorsements. The findings highlight the importance of selecting celebrities with credible expertise for endorsements, especially in industries where professional knowledge and skills are crucial to consumer decision-making.

More so, the analysis from Table 3 shows that hypotheses H03 and H04, which proposed that celebrity trustworthiness (CT) and celebrity fit with the brand (CF) would significantly

influence customer patronage (CP), were not supported. The beta values for CT and CF were 0.154 and 0.133, respectively, with p-values of 0.204 and 0.231, both exceeding the conventional significance threshold of 0.05. This indicates that neither the perceived trustworthiness of the celebrity nor the alignment between the celebrity and the brand significantly impacted customer patronage in this study. One possible explanation for the lack of significant impact from celebrity trustworthiness could be that consumers may prioritize other attributes, such as expertise or attractiveness, over trustworthiness when it comes to celebrity endorsements. This finding contrasts with previous studies like those by Amos, Holmes, and Strutton (2018), which emphasized the importance of trustworthiness in enhancing endorsement effectiveness. Similarly, the non-significant influence of celebrity fit with the brand might suggest that the match between the celebrity's image and the brand's identity is not as crucial as other factors, such as the celebrity's overall appeal or expertise, in driving customer behaviour. This result highlights the complex and context-dependent nature of celebrity endorsements, suggesting that while certain attributes like trustworthiness and fit are often considered important, their actual impact can vary depending on the specific market or product context.

6. Conclusion

In conclusion, this study explored the influence of celebrity attractiveness, expertise, trustworthiness, and fit with the brand on customer patronage in the context of MTN Nigeria. The findings revealed that while celebrity attractiveness and expertise significantly enhance customer patronage, attributes like trustworthiness and brand fit did not demonstrate a statistically significant impact. These results suggest that consumers in the Nigerian telecommunications market are more influenced by the appeal and perceived knowledge of celebrities rather than their perceived reliability or alignment with the brand's image. The study contributes to the literature by highlighting the varying effectiveness of different celebrity endorsement attributes and underscores the importance of strategically selecting celebrity endorsers based on these impactful traits. Further research could explore additional factors or contexts that may affect the role of trustworthiness and brand fit in celebrity endorsements.

7. Recommendations

Based on the findings of this study, it is recommended that MTN Nigeria and similar companies in the telecommunications sector focus on leveraging celebrity attractiveness and expertise when selecting endorsers for their marketing campaigns. The significant impact of these attributes on customer patronage indicates that consumers are drawn to celebrities who are not only visually appealing but also perceived as knowledgeable and credible in their respective

fields. Companies should prioritize endorsers who embody these traits, as they are likely to enhance the desirability of the products and services offered, thereby driving higher customer engagement and loyalty. This strategic approach can be particularly effective in an industry where brand differentiation is crucial.

Additionally, while the attributes of celebrity trustworthiness and brand fit did not show a significant impact on customer patronage in this study, these factors should not be entirely disregarded. It is recommended that companies conduct further research to understand the nuances of how these attributes might influence different segments of the market or interact with other marketing variables. For instance, trustworthiness may become more critical in campaigns aimed at promoting new or sensitive products, where credibility and reliability are paramount. By adopting a comprehensive and nuanced approach to celebrity endorsements, companies can better tailor their marketing strategies to meet diverse consumer preferences and optimize the effectiveness of their promotional efforts.

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Conflicts of Interest

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The authors did not use an AI tool in the preparation of the article.

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THE INFLUENCE OF REVERSE LOGISTICS ON FIRM PERFORMANCE IN
PORTABLE WATER PRODUCTION FIRMS: A CONCEPTUAL ANALYSIS.

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Abstract

The growing need for environmental sustainability, operational efficiency, and competitive advantage has intensified global interest in reverse logistics, particularly in resource-dependent industries such as portable water production. As firms in this sector increasingly face pressure to reduce waste, manage plastic recovery, optimize recycling processes, and comply with environmental regulations, reverse logistics has emerged as a strategic tool capable of enhancing both ecological and economic performance. The main objective of this study is to examine the influence of reverse logistics on firm performance in portable water production firms, offering insights that can guide managerial decisions and policy development. The study provides a conceptual review of reverse logistics and performance used as a multidimensional construct within the portable water production outfits. This study is underpinned by Closed-Loop supply Chain (CLSC) theory, stating that implementing reverse logistics strategies can simultaneously address environmental concerns and improve organizational efficiency. The study built a conceptual framework to explain how reverse logistics facilitate performance. This study tries to review and synthesize issues such as reverse logistics, firm performance, and the sustainable environment. The study contributes to theory by way of establishing a framework that explains the role of reverse logistics in improving firms' performance and finally recommends to policymakers to invest in reverse logistics so as enhance competitiveness, resilience, and sustainable growth of the nation's environment and the economy.

Keywords: reverse logistics, firm performance, environment, and sustainability

Introduction

The world today has been engaging in issues of environmental awareness, increased examination of firms' ecological footprints has prompted a significant shift in supply chain management practices. Manufacturing enterprises worldwide remained central to economic progress because they drive industrialization, create employment opportunities, support Gross Domestic Product (GDP) expansion, promote exports, facilitate technological innovation,

generate government revenue, and advance economic diversification. A strong manufacturing sector is therefore indispensable for sustainable development, improved performance, and for strengthening national competitiveness.

This is pointer that, firm performance is a critical analytical construct for evaluating economic outcomes. Firm performance reflects the degree to which organization fulfils its goals, demonstrating how effective it deploys its resources to achieve desired goals (Tariq et al., 2023). As a multidimensional construct, it includes financial indicators such as profit margins, sales growth, and return on assets. Similarly, it is made up of non-financial measures such as market share, operational efficiency, and customer satisfaction. Together, these indicators capture a firm's ability to remain competitive and meet stakeholder expectations. Consistent with this perspective, firm performance has also been described as a company's ability to realize its objectives through sound managerial practices, good governance structures, and sustained organizational commitment (Orishede, 2024).

Despite its strategic importance, Nigeria's manufacturing sector continues to lag behind global and regional peers. National economic growth slowed from 3.6% in 2021 to 3.3% in 2022 and further declined to 2.9% in 2023, driven by rising inflation and worsening macroeconomic instability. Moreover, manufacturing value-added as a share of GDP remained stagnant at about 1% from 2020 to 2023 and averaged -0.01% between 2015 and 2022, highlighting deep-rooted structural challenges (African Development Bank (AFDB), 2024). Sector-specific data reinforce this trend: real manufacturing GDP grew only by 1.38% in the fourth quarter of 2023, below the rate recorded in the corresponding quarter of 2022.

In addition, its real GDP contribution fell to 8.23% in the fourth quarter of 2023 compared to 8.40% in the same quarter of 2022 and 8.42% in the third quarter of 2023 (NBS, 2024). Collectively, these indicators show that although manufacturing firms are crucial for Nigeria's economic transformation, persistent structural barriers continue to undermine their performance and restrict their developmental role.

Furthermore, the World Bank projects that total waste generation in sub-Saharan Africa will reach 516 million tons annually by 2050 (Makaleng, 2024). Similar trends are observed globally; for instance, the Fast Moving Consumer Goods (FMCG) retail sector in India is the largest contributor to plastic packaging waste.

Sachet water usually packaged in low-cost polyethylene bags, has become a primary drinking water source for millions of Nigerians due to its affordability. However, the rapid increase in sachet water production has generated significant environmental challenges (Ukpene, 2024). The improper disposal of plastic sachets in open spaces, drainage channels, and water bodies,

has increased environmental degradation (Stanley et al., 2020; Henderson & Dumbili, 2021). Similarly, Report indicates that Nigeria currently generates an estimated 27.3 million tonnes, of which urban cities contribute 11.2 million tonnes, and 1.1 million tonnes is plastics. This figure suggests that by 2040, about 40.5 million tonnes of plastic will be generated, and only about 1.6 million tonnes will be collected for disposal (Ezeudu, 2024).

Consequently, the proliferation of plastic waste raises public health risks, particularly in urban areas where sachet waste blocks drainage systems and contaminates water sources. Such pollution facilitates the spread of waterborne diseases such as cholera, typhoid, and dysentery, particularly among vulnerable populations with limited access to clean water and healthcare (Adjei et al., 2021; Kusa & Joshua, 2022; Yuksel et al., 2021). Unfortunately, in Nigeria, the predominant methods of disposal are uncontrolled open dumping and burning, with the severe environmental health and safety consequences – climate change, and spread of diseases (Batagarawa, 2024).

Nevertheless, between 2017 and 2022, the sachet water and broader FMCG-related manufacturing sector experienced a 13.4% decline in output, rising operational costs, and a 12% reduction in market share. These trends underscore the difficulty firms face in balancing profitability with sustainability mandates. Reverse Logistics Strategies (RLS), including returns management, recycling, and appropriate disposal, are recognized as essential for building sustainable supply chains. However, their practical implementation often remains misaligned with firm performance outcomes. Inefficiencies such as prolonged returns processing times, high volumes of defective or returned products, and rising returns handling expenses contribute to escalating operational costs, reduced profitability, and declining customer satisfaction (Mwove, 2024).

Therefore, the problems highlighted above have sparked the motivation to examine the influence of reverse logistics in mitigating performance challenges.

Literature Review

Firm Performance

Firm performance is a crucial construct in business, management and strategic management researches. It represents the extent to which a firm achieves its objectives and create value for its stakeholders. As organizations operate in a competitive and dynamic environments, assessing performance becomes essential for evaluating strategic decisions, managerial effectiveness, and long term sustainability.

Likewise, Richard (2009) describes firm performance as a multidimensional construct comprising financial outcomes, product–market results, and shareholder returns. He stresses

that performance must be assessed across several domains rather than relying on a single indicator. In a similar perspective, Venkatraman (1986), views firm performance as a narrower component of organizational effectiveness, typically centered on financial metrics such as profitability and sales growth, alongside business outcomes like market share and new product success.

In the same vein, Kaplan and Norton (1992) broaden the conceptualization of firm performance through the Balanced Scorecard approach, integrating financial, customer, internal process, learning and growth dimensions. Their model emphasizes both financial and non-financial indicators. This aligns with Kotter's (1992) argument that an organization's adaptive culture influences long-term financial performance, as strong but flexible cultures enhance sustained performance improvement.

From the resource-based view, Barney (1991) asserts that firm performance is determined by the organization's ability to acquire and utilize resources that are valuable, rare, inimitable, and non-substitutable (VRIN). These unique internal capabilities form the basis for superior performance. Porter (1985) similarly puts performance as the outcome of achieving competitive advantage, either through cost leadership or differentiation, by delivering superior value relative to competitors. Building on these views, Hitt et al. (2017) contend that firm performance reflects the attainment of strategic competitiveness and above-average returns, achieved through effective strategy formulation and implementation.

In modern green supply chain management, reverse logistics has become increasingly important due to sustainability concerns, regulatory pressures, and the pursuit of operational efficiency. Defined as closed-loop supply chain management, reverse logistics refers to the process of moving products from the point of consumption back through the supply chain (Adesoga, 2024). This reverse flow includes activities such as returns management, remanufacturing, refurbishing, recycling, and appropriate disposal, all of which help minimize waste, conserve resources, and maximize the value recovered from used products.

Reverse logistics also plays a central role in advancing the circular economy by promoting waste minimization, responsible consumption, and sustainable logistics practices. It supports circular product design, facilitates the consolidation of high product volumes, and enhances resource efficiency through repair, recycling, and reuse activities within corporate circular business models (Raji, 2024). Sonar et al. (2024) further explain that reverse logistics involves redirecting products from their end destination to another point where additional value can be restored or where proper disposal can be ensured. They argue that, within a circular economy,

reverse logistics supports the collection and aggregation of end-of-life products, components, or materials for recycling, reuse, or returns, thereby fostering sustainable development.

In a similar manner, Lambert (1993) defines reverse logistics as the planning, implementation, and control of the efficient and cost-effective movement of raw materials, in-process inventory, finished goods, and related information from the point of consumption back to the point of origin, primarily to recapture value or ensure appropriate disposal. Similarly, Fleischmann et al. (1997) view reverse logistics as managing the backward flow of materials and finished products for purposes such as reuse, recycling, remanufacturing, or disposal, all aimed at recovering value from items that might otherwise be considered waste. Rogers (1999) reinforces this perspective, defining reverse logistics as the planning and control of the efficient movement of returned goods back to their point of origin for repair, remanufacturing, recycling, or disposal.

Equally, Bowersox (2002) extends this view by asserting that reverse logistics encompasses all logistical activities related to the reuse of products and materials such as refurbishing, remanufacturing, recycling, and return processing with a focus on recovering value through backward movement in the supply chain. Guide (2001) similarly notes that reverse logistics comprises the set of activities needed to return a product up the supply chain after sale to enable value capture, component reuse, or appropriate disposal. According to Murphy (2000), reverse logistics includes logistics processes involving the return of goods from customers to producers, often driven by return policies, recycling needs, or refurbishment requirements.

Benefit of reverse logistics

Reverse logistics has gained increasing scholarly and industry attention due to the environmental degradation caused by conventional supply chain practices and the rising consumer demand for eco-friendly products. This interest has been particularly strong in the fast-moving consumer goods (FMCG) retail sector, which faces frequent product recalls and high waste generation. Since the FMCG sector contributes significantly to national GDP, the role of reverse logistics has become even more critical, as these firms cannot eliminate the activities that generate returns and waste.

Reverse logistics influences three central dimensions of e-commerce and retail operations: environmental, economic, and operational performance. Organisations that invest in effective reverse logistics can achieve substantial benefits. Returned products can be recycled or recovered, supporting environmental protection initiatives. Moreover, the ability to efficiently manage returns is as critical as the ability to generate sales. Firms must provide simple and convenient return policies to protect customer experience, especially when products fail to meet

expectations. Efficient return, repair, and refurbishment processes enhance customer satisfaction, strengthen loyalty, and improve competitive advantage (Guide, 2000).

Furthermore, reverse logistics also enables firms to recapture value from failed or returned products through recycling, parts recovery, or reselling in secondary markets. Strong reverse logistics systems help firms minimize financial losses by retaining value through remanufacturing and refurbishment, thereby lowering material costs and extending product lifespan (Guide, 2001). Economically, the process allows firms to extract significant value from returned goods, reduce production costs, and meet rising consumer expectations for sustainability. Socially, reverse logistics contributes to job creation in recycling, refurbishing, and remanufacturing activities, supporting economic development and community wellbeing (Adesoga, 2024).

Consequently, reverse logistics challenges the traditional “take-make-dispose” production model by recovering valuable materials from used products via recycling and remanufacturing (Lacy, 2020). This process reduces dependence on virgin materials, thereby decreasing mining, drilling, and other extractive activities that damage ecosystems. Waste diversion from landfills through effective return and recycling programmes also reduces environmental pressures and mitigates methane emissions, a major greenhouse gas (Cherrett, 2010).

In addition, Mishra and Singh (2023) emphasized that reverse logistics facilitates the movement of end-of-life (EOL) products back to recovery facilities, enabling value restoration through product recovery management. Reusing recovered materials as manufacturing inputs enhances cost competitiveness (Sivasankran, 2024). Overall, reverse logistics reduces waste, enables value recovery, lowers operational costs, enhances environmental sustainability, and improves resource conservation. It also generates cost savings in inventory and transportation through better coordination of return, reuse, and recycling activities (Rogers, 1999; Guide, 2000; Fleischmann et al., 1997; Stock, 1998; Guide, 2001).

Environment

The environment is designed to support life on Earth, yet the increasing levels of global contamination and pollution have become a major concern in recent years (Awewomom et al., 2024). The sum total of external conditions and influences that affects the life and development of organism or population is seen as environment (Odum, 1971).

Environmental pollution manifests in various forms, including air, water, soil, and noise pollution (Nnaemeka, 2020). Industries can help reduce pollution by adopting cleaner production technologies and environmentally responsible practices, while governments can enforce regulations and impose penalties on industries that fail to comply with pollution control

standards (Song, 2021). These management strategies can engender a safe and secured environment that assures healthy living.

Barrow (2006) stressed on environmental management as very important, where he asserts that, it is the pursuit of the Best Practicable Environmental Option (BPEO) by using the best available techniques that do not incur excessive cost. Masters and Ela (2008) define environmental management as “the integration of environmental science, engineering, policy, and economics to achieve environmental quality objectives and ensure the sustainable use of natural resources.” Similarly, Pullin (2002) conceptualizes environmental management as “the application of ecological knowledge and management practices to conserve biodiversity, protect ecosystems, and ensure sustainable human use.”

Environmental management also aims to guide development processes, take advantage of emerging opportunities, help societies avoid risks, mitigate environmental problems, enhance adaptive capacity, reduce vulnerability, and strengthen resilience. Barrow (2024) emphasizes that the Earth is no longer in a fully natural state, and humanity must transition from exploiting natural systems to acting as responsible stewards to avoid the collapse of civilization, making environmental management indispensable.

Environmental pollution and contamination occur when harmful substances are discharged into the air, soil, or water, resulting in severe ecological damage and posing significant risks to human health (Hill, 2020). Li and Jin (2019) reported that air pollution has become a global issue requiring urgent attention. For instance, China has recorded severe ozone pollution, making it a global hotspot for ozone layer degradation (Lu, 2018). Such pollution can lead to major health challenges, including respiratory illnesses, cancer, and other long-term diseases (Kim, 2019).

Chemical pollutants have also emerged as major contributors to rising toxicity levels in aquatic environments, soils, and the atmosphere (Weldeslassie, 2018). Beyond health impacts, environmental contamination carries substantial economic costs, including expenses related to site clean-up and mitigation of pollution-related health effects (López-Pacheco, 2019).

Principles of environmental management

The core principles of environmental management include sustainability, prevention, precaution, and stakeholder participation. Environmental management promotes the responsible use of natural resources so that current needs are met without jeopardizing the ability of future generations to meet theirs. It also stresses preventing pollution and environmental degradation before they occur, rather than depending on corrective measures. In addition, it supports the precautionary principle, which encourages taking proactive steps to

avoid potential environmental harm even when scientific evidence is incomplete. Another key element is the involvement of all stakeholders such as government bodies, industries, communities, and individuals, in decision-making processes. However, implementing effective environmental management remains challenging due to issues such as inadequate data, limited resources, and competing priorities (Awewomom et al., 2024).

Sustainability

In 1987, the World Commission on Environment and Development (WCED) (Brundtland) Report, defined sustainability as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” This broad conception of sustainability emphasizes that any action likely to harm the environment should be avoided to ensure a safe and secure environment for generations yet unborn.

Similarly, Daly (1990) views sustainability as the maintenance of natural capital stocks so that the environment’s carrying capacity is not exceeded. According to this perspective, resource extraction, waste emissions, and population growth should remain within ecological limits. However, the ongoing human pursuit of survival and livelihood has led to continuous environmental exploitation, posing persistent challenges for environmental scientists.

In contrast, Elkington (1997) approaches sustainability through the lens of the Triple Bottom Line (3Ps), defining it as a balance among economic prosperity, environmental quality, and social equity, commonly summarized as people, planet, and profit. This definition provides a holistic framework by integrating social, environmental, and economic considerations.

Furthermore, Hart (1995) conceptualizes sustainability as the creation of long-term value for both shareholders and society by minimizing environmental harm, innovating clean technologies, and transitioning toward environmentally restorative business models. This perspective emphasizes technological innovation while also addressing social and environmental dimensions to ensure a habitable environment.

Theoretical Framework

The theory used to underpin this study is the Closed-Loop supply Chain (CLSC) which was originally proposed by Rogers in 1970, the CLSC theory offers a framework for understanding how reverse logistics strategies can be integrated with sustainability, cost efficiency, and overall firm performance. Unlike traditional supply chains, CLSC emphasizes the importance of incorporating activities such as recycling, reusing, and remanufacturing into supply chain operations to enhance environmental sustainability while generating cost savings (Malmgren et al., 2020). The theory is based on the premise that, implementing reverse logistics strategies can simultaneously address environmental concerns and improve organizational efficiency. It

suggests that firms can adopt these strategies to reduce costs and create additional value (Saruchera & Asante-Darko, 2021). By concentrating on the reverse flow of products, CLSC Theory optimizes the use of resources and minimizes environmental impact, thereby enhancing firm performance (Bai et al., 2020).

However, the theory also presents certain challenges. Implementing closed-loop systems can be operationally complex and costly, which may discourage smaller firms from adoption (Miemczyk et al., 2016). Additionally, effective customer participation in reverse logistics processes often requires incentives and clear communication strategies (Wilson & Goffnett, 2022). Finally, while CLSC Theory emphasizes ecological and operational advantages, it may overlook other critical factors that influence overall firm performance (Kazemi et al., 2019).

Discussion

The synthesis of this study indicates that reverse logistics practices, such as managing product returns, recycling used sachets and bottles, and reusing production materials, greatly improve the performance of portable water production firms. This suggests that firms that actively implement systematic post-consumer waste collection and processing experience reductions in production costs, improved operational efficiency, and enhanced public image. These suggest that reverse logistics is not just an environmental compliance activity but also a strategic mechanism for boosting firm performance.

Review of past literatures show that firms investing in structured return systems and partnering with waste collectors achieved higher operational efficiency. This explains that reverse logistics contributes not only to reducing waste but also to regenerating resources, thereby strengthening overall competitiveness. The observed relationship between reverse logistics and financial performance supports the idea that recovering materials reduces raw material costs and stabilizes production processes, particularly in resource-dependent sectors like portable water production.

The syntheses made are consistent with previous studies by Rogers and Tibben-Lembke (1999) and Guide and Van Wassenhove (2001), who highlighted that reverse logistics connects cost efficiency and facilitates value recovery from post-consumer waste, thereby enhancing firm performance. Likewise, Fleischmann et al. (1997) and Stock (1998) confirmed that reverse logistics contributes directly to both environmental and financial outcomes through optimized waste management and resource conservation. More recent studies (Amole, 2018; Bor, 2020 & Abdissa, 2022) in African and Nigerian contexts have also shown that reverse logistics provides a competitive advantage for manufacturing firms by reducing costs associated with waste disposal and raw material procurement.

Nonetheless, the study underscores the relevance of the nature of the firm which helps to facilitate the adoption of reverse logistics by the manufacturing firms. Small scale businesses may encounter difficulties in the area of the cost to be incurred in formal waste retrieval systems

Implications of the study

The study has important implications for both managerial practice, theoretical, and public policy. For firms, the management should be bold enough to entrench reverse logistics into their core operational strategies rather than treating it as a secondary environmental concern. Companies that practice recycling initiatives, form partnerships with waste collection agencies, and invest in basic recovery technologies are more likely to reduce costs, ensure steady availability of production inputs, and enhance their brand image. The study has provided a grounded theory that will be useful to managers of the production firms. From a policy perspective, the study highlights the need for stronger regulatory measures to promote material recovery and recycling programs in Kaduna Metropolis. Government authorities could provide incentives for firms that implement formal reverse logistics systems or adopt extended producer responsibility (EPR) schemes. Furthermore, coordinated efforts among local governments, waste management agencies, and portable water producers could improve environmental sanitation and help mitigate plastic pollution.

Conclusion and Recommendations

This study, on the influence of reverse logistics on firms' performance, has an impact on how well Kaduna's portable water-producing companies perform. Reverse logistics, such as, Remanufacturing, Refurbish, and recycling are crucial for increasing production efficiency, cutting costs, improving environmental compliance, and strengthening a company's reputation. Stable supply chain operations, better resource use, and reduced waste-disposal costs are the results of companies that adopted structured reverse logistics systems.

In line with the findings of this study, the following are recommendations given, with the hope that when implemented, performance will improve.

It is recommended that, portable water companies should formally incorporate reverse logistics into their environmental and operational management plans. Clearly defining organizational policies for material recycling, remanufacturing, refurbishing, bottle return programs, and waste recovery will standardize procedures and enhance implementation consistency.

Managers of the firms should partner with neighborhood associations, NGOs, environmental organizations, and waste collectors, this will boost the amount of recoverable materials and improve the efficiency of product return flows. At the same time, this kind of cooperation will promote community involvement and environmental standard compliance.

It is recommended that Kaduna State policymakers step up their oversight of portable water producers' adherence to environmental regulations. Increased industry adoption would result from more transparent enforcement procedures and incentives, such as tax breaks for businesses with robust reverse logistics systems.

Limitations and for Future Research

Despite its contributions, this study has several limitations. First, the research focused solely on portable water production firms within Kaduna Metropolis, limiting the generalizability of the findings to other regions or sectors. Future research should use Small and Medium Enterprises since they are the majority contributors of waste generally. Secondly, the study examined reverse logistics practices as a collective concept without separating the specific costs or environmental impacts of each practice. Finally, the geographic scope may restrict the broader applicability of the findings. For future research, studies could expand to include multiple regions or compare urban and rural contexts to gain a more comprehensive understanding of reverse logistics impacts. Additionally, future studies could investigate how government policies, technological adoption, and supply chain partnerships influence the effectiveness of reverse logistics. Comparative research across different manufacturing sectors, such as beverages, plastics, and food processing, could also provide valuable insights into sector-specific challenges and benefits of implementing reverse logistics systems.

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INTEGRATING COMPETENCY, ORIENTATION, AND OPPORTUNITY: A
CONCEPTUAL FRAMEWORK FOR ENHANCING SMALL AND MEDIUM
ENTERPRISE PERFORMANCE

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Abstract

*In today's dynamic and uncertain business environment, Small and Medium-sized Enterprises (SMEs) face increasing pressure to remain competitive and sustainable. This paper develops a conceptual framework that integrates three critical constructs: entrepreneurial competency, entrepreneurial orientation, and opportunity recognition to explain their combined influence on SME performance. Drawing on the Resource-Based View (RBV) and Dynamic Capabilities Theory, the framework positions entrepreneurial competency as a foundational capability that shapes firm outcomes. However, the influence of competency on SME performance is not direct or isolated. Instead, entrepreneurial orientation moderates this relationship by shaping the firm's strategic posture toward innovation, **proactiveness**, and risk-taking, while opportunity recognition mediates the ability of entrepreneurs to identify and exploit emerging business opportunities. By synthesizing existing literature, this paper proposes a set of conceptual relationships and hypotheses that explain how these constructs interact to influence SME performance. The framework contributes to entrepreneurship literature by providing an integrative theoretical model that can guide future empirical research and inform policy and entrepreneurial practice in resource-constrained environments.*

Keywords: Entrepreneurial Competency, Entrepreneurial Orientation, Opportunity

Recognition, SME Performance

Introduction

Small and Medium-sized Enterprises (SMEs) are pivotal to the economic development and job creation efforts of both developed and emerging economies. They serve as engines of innovation, competitiveness, and inclusive growth, particularly in resource-constrained environments (Singh, Garg, & Deshmukh, 2008). However, despite their recognized importance, SMEs in many developing regions continue to face challenges in sustaining long-

term growth and achieving high levels of performance. Numerous studies have argued that internal capabilities, particularly entrepreneurial competencies, are instrumental in navigating such complexities (Man, Lau, & Snape, 2008; Sakib et al., 2022).

Entrepreneurial competency refers to the individual characteristics, skills, and abilities that enable entrepreneurs to successfully identify opportunities, mobilize resources, and manage business operations (Hussain et al., 2022). Competent entrepreneurs tend to exhibit strategic thinking, opportunity-seeking behavior, innovation, and resilience traits that influence firm-level performance. However, performance outcomes among SMEs with seemingly similar competency levels vary widely, suggesting that other contextual or behavioral factors moderate or mediate this relationship (Pulka, Ramli, & Mohamad, 2021).

Entrepreneurial Orientation (EO) has been proposed as a strategic posture that may influence how entrepreneurial competencies translate into performance (Aftab et al., 2024). EO encompasses innovativeness, proactiveness, and risk-taking behavior three dimensions that shape decision-making and strategic behavior. EO may act as a **moderator**, amplifying or diminishing the impact of entrepreneurial competencies on performance outcomes depending on its presence or intensity within the organization (Arabeche et al., 2022; Wahyuni & Sara, 2020).

Equally significant is opportunity recognition the entrepreneur's ability to identify and act on potentially profitable business ventures. It is increasingly recognized as a **mediating mechanism** through which entrepreneurial competencies exert their effect on firm performance (Mustafa, Saleem, & Dost, 2022). An entrepreneur may be highly skilled or knowledgeable, but without recognizing viable opportunities, their competencies may not translate into meaningful business growth. Thus, opportunity recognition plays a bridging role between internal capabilities and strategic outcomes.

While prior research has individually explored entrepreneurial competency, EO, and opportunity recognition, limited studies have integrated all three into a unified model (Mokbel Al Koliby et al., 2024; Abdulsamad et al., 2025). There remains a theoretical gap in understanding how and when entrepreneurial competencies lead to superior SME performance, especially within emerging economies where external turbulence, institutional voids, and resource constraints persist. This gap underscores the need for a holistic framework that simultaneously accounts for the mediating and moderating dynamics in competency-performance relationships.

Moreover, contextual studies within developing nations such as Nigeria, where SMEs constitute over 90% of businesses but struggle with low survival rates, are scarce. Localized

evidence is crucial to tailoring policy interventions, training programs, and enterprise support services (Adamu et al., 2021; Kabiru, Lamido, & Adamu, 2021). By integrating EO and opportunity recognition into the competency-performance framework, this study aims to offer nuanced insights with practical relevance to African SME ecosystems.

Despite the growing recognition of entrepreneurial competencies as critical drivers of SME performance, the evidence regarding their effectiveness remains inconsistent and context-dependent. Many entrepreneurs in emerging economies possess foundational competencies but still struggle to translate them into sustained business growth. This inconsistency points to the likelihood of intervening variables both mediators and moderators that shape the outcomes of these competencies (Bansal et al., 2023; Adamu et al., 2020).

Existing literature often treats entrepreneurial competency, entrepreneurial orientation, and opportunity recognition as isolated constructs rather than interconnected drivers. Limited empirical studies have simultaneously examined how EO may moderate and how opportunity recognition may mediate the relationship between competency and performance, especially within African SME contexts. This fragmented understanding restricts the development of comprehensive models and interventions that address performance challenges more holistically.

This study is motivated by the urgent need to enhance SME performance in emerging economies by moving beyond simplistic competency-performance models. By investigating how entrepreneurial orientation strengthens or weakens the effectiveness of entrepreneurial competencies, and how opportunity recognition acts as a pathway through which competencies influence outcomes, this research provides a better and more actionable framework. Such a model can help entrepreneurs, support agencies, and policymakers foster more competitive and resilient SMEs. Therefore, this research seeks to investigate the direct effect of entrepreneurial competency on SME performance, the moderating influence of entrepreneurial orientation, and the mediating role of opportunity recognition. This integrated approach aims to advance both academic theory and practical understanding of how SMEs can thrive in uncertain and competitive environments.

Literature Review

SME Performance

Small and Medium-sized Enterprises (SMEs) are widely acknowledged as key contributors to economic growth, innovation, and employment generation across both developing and developed economies. SME performance refers to the outcomes achieved by these firms in terms of profitability, revenue growth, market expansion, operational efficiency, innovation

capacity, and long-term sustainability. Performance metrics can be both financial (e.g., sales growth, profit margin, return on investment) and non-financial (e.g., customer satisfaction, brand equity, and employee retention). However, performance among SMEs is highly variable and influenced by multiple internal and external factors such as leadership quality, resource availability, market conditions, entrepreneurial competencies, and strategic orientations (Alnawas & Abu Farha, 2020; Adamu, Dantsoho & Hauwa, 2021).

In increasingly turbulent and competitive business environments, achieving consistent performance has become more challenging for SMEs. Limited access to capital, weak institutional support, and rapidly changing consumer preferences require SMEs to adopt adaptive and innovation-driven approaches. Studies have shown that intangible resources such as entrepreneurial orientation, innovation capabilities, and entrepreneurial competencies significantly impact SME performance by enabling strategic flexibility and proactive opportunity-seeking (Otache & Usman, 2024; Mokbel Al Koliby et al., 2024). Moreover, performance is not merely the end result of good planning but also a reflection of the firm's dynamic ability to recognize and respond to environmental shifts. Therefore, improving SME performance demands an integrated understanding of internal capabilities, strategic behavior, and environmental responsiveness (Mustafa, Saleem & Dost, 2022; Khan et al., 2021).

Entrepreneurial Competency

Entrepreneurial competency refers to the underlying characteristics of an individual comprising knowledge, skills, attitudes, and behaviors that are essential for successful business creation and growth. These competencies are often grouped into four dimensions: strategic, relational, operational, and personal. Strategic competencies involve vision-setting, opportunity evaluation, and planning; relational competencies relate to networking, team management, and stakeholder engagement; operational competencies encompass business management, resource mobilization, and implementation skills; while personal competencies include self-confidence, persistence, creativity, and risk tolerance (Man, Lau, & Snape, 2008).

Empirical research has consistently shown a positive relationship between entrepreneurial competencies and various dimensions of SME performance. For instance, Sakib et al. (2022) found that personal and strategic competencies were significantly associated with growth in sales and market share among SMEs in Bangladesh. Similarly, Pulka, Ramli, and Mohamad (2021) reported that relational and operational competencies improved innovation capacity and adaptability in Nigerian SMEs. Competent entrepreneurs are more likely to identify opportunities, build strategic alliances, manage crises, and introduce innovations, all of which

are essential for achieving long-term business success in dynamic environments (Mokbel Al Koliby et al., 2024; Bansal et al., 2023).

Entrepreneurial Orientation (EO) as a Moderating Variable

Entrepreneurial Orientation (EO) represents the strategic posture or behavioral inclination of a firm toward entrepreneurial activities. It consists of three core dimensions: innovativeness, which reflects the firm's tendency to support creativity and experimentation; risk-taking, which involves a willingness to commit significant resources to uncertain ventures; and proactiveness, which captures the firm's tendency to anticipate and act on future demand ahead of competitors (Wahyuni & Sara, 2020; Aftab et al., 2024).

EO is widely recognized as a moderator in the relationship between internal capabilities (such as entrepreneurial competency) and organizational performance. A strong EO can amplify the benefits of entrepreneurial competencies by providing the behavioral context that encourages risk-tolerant, innovative, and forward-looking decision-making. For example, an entrepreneur with high competencies may only achieve suboptimal outcomes if their business lacks a proactive and innovative orientation (Arabeche et al., 2022). Conversely, when EO is high, it strengthens the link between competencies and outcomes such as innovation performance, market expansion, and profitability (Mustafa et al., 2022; Pulka et al., 2021). This makes EO a critical variable for understanding variations in performance among similarly skilled entrepreneurs.

Opportunity Recognition as a Mediating Variable

Opportunity recognition is defined as the ability to identify a viable business idea or venture from existing market gaps, technological changes, or social trends. It is a central mechanism through which entrepreneurial competencies are transformed into tangible outcomes. In highly dynamic or turbulent environments, where information is fragmented and conditions change rapidly, the ability to detect and exploit opportunities becomes even more essential for SME survival and success (Hussain et al., 2022; Abdulsamad et al., 2025).

As a mediating variable, opportunity recognition explains *how* entrepreneurial competencies lead to improved business performance. For instance, strategic and relational competencies help entrepreneurs scan markets and interact with key stakeholders, which increases the likelihood of discovering emerging needs or unmet demand (Mustafa et al., 2022). Once an opportunity is identified, operational and personal competencies facilitate its evaluation and execution. Studies by Khan et al. (2021) and Mokbel Al Koliby et al. (2024) have confirmed that opportunity recognition significantly mediates the relationship between competencies and firm-level outcomes such as growth, customer retention, and competitive advantage. Therefore,

integrating opportunity recognition into the competency-performance framework provides a more complete understanding of the entrepreneurial process.

Theoretical Foundations

Entrepreneurial Competency Theory

Entrepreneurial Competency Theory posits that specific personal attributes, skills, and behavioral capabilities of entrepreneurs directly influence the performance and sustainability of their ventures. These competencies include opportunity-seeking, strategic planning, relationship building, innovation, and risk management. The theory suggests that it is not only the possession of these skills but the ability to apply them consistently and contextually that differentiates successful entrepreneurs from others (Man, Lau, & Snape, 2008). In the SME context, entrepreneurial competencies serve as the "engine" that powers organizational decision-making, opportunity recognition, and adaptability in resource-constrained environments. The theory provides a foundation for examining how and why individual-level competencies can be linked to firm-level outcomes such as growth, profitability, and sustainability (Sakib et al., 2022).

Resource-Based View (RBV)

The Resource-Based View (RBV) offers a firm-level perspective by asserting that sustainable competitive advantage arises from the strategic acquisition, development, and deployment of valuable, rare, inimitable, and non-substitutable (VRIN) resources (Barney, 1991). Entrepreneurial competencies are considered intangible strategic resources that fulfill VRIN criteria and therefore play a pivotal role in enhancing firm performance. RBV helps frame how firms leverage internal capabilities like entrepreneurial skills, innovation capabilities, and knowledge to differentiate themselves in competitive markets. Within SMEs, where resource scarcity is often the norm, entrepreneurial competencies become even more critical as they are difficult to replicate and can create sustained advantages in turbulent business environments (Adamu et al., 2020; Bansal et al., 2023).

Effectuation Theory

Effectuation Theory, developed by Saras Sarasvathy, offers a cognitive and decision-making perspective on entrepreneurship. It emphasizes how entrepreneurs operate under uncertainty by leveraging means at their disposal such as who they are, what they know, and whom they know to co-create opportunities with stakeholders, rather than pursuing pre-defined goals. This theory is particularly relevant to SMEs operating in dynamic, unpredictable environments, where long-term planning may not be feasible. Effectuation complements entrepreneurial competency by explaining the *how* behind opportunity recognition how competent

entrepreneurs make flexible, real-time decisions to identify, create, and exploit business opportunities (Mustafa et al., 2022). It also aligns with the understanding that entrepreneurial success is not solely about control or prediction, but also about adaptability, experimentation, and learning-by-doing.

Dynamic Capabilities Theory (The Bridging Lens)

Dynamic Capabilities Theory serves as a bridge connecting the individual (entrepreneurial competency), firm-level (RBV), and process-level (effectuation) perspectives. Introduced by Teece et al. (1997), the theory focuses on a firm's ability to integrate, build, and reconfigure internal and external competencies to respond rapidly to changing environments. In this integrated framework, entrepreneurial competency represents the micro-foundations of dynamic capabilities particularly in sensing opportunities (opportunity recognition), seizing them through innovation and EO, and transforming the organization for competitive renewal. Entrepreneurial Orientation, in this view, becomes a behavioral manifestation of dynamic capabilities, while opportunity recognition is part of the *sensing* function. This theory thus enables a holistic understanding of how SMEs adapt and thrive in volatile conditions by leveraging competencies strategically across different organizational levels (Pulka et al., 2021; Mokbel Al Koliby et al., 2024).

Proposed Conceptual research paper / Future Research Design

This study is positioned as a **conceptual research paper** that proposes an integrated framework linking entrepreneurial competency, opportunity recognition, entrepreneurial orientation (EO), and SME performance. While the current study focuses on theoretical development and hypothesis formulation, future research is expected to conceptual proposed model.

A **quantitative explanatory research design** is recommended for future conceptual testing of the framework. The proposed design would involve a cross-sectional survey targeting SME owners and top-level managers operating across sectors such as manufacturing, retail, agriculture, and ICT within emerging economies. These individuals serve as the appropriate unit of analysis due to their central role in shaping entrepreneurial competencies, recognizing opportunities, and influencing firm-level strategic orientations.

Data collection could be conducted using structured questionnaires adapted from validated scales in prior literature. For instance, entrepreneurial competency measures may be drawn from Man, Lau, and Snape (2008), opportunity recognition from Keh et al. (2002), entrepreneurial orientation from Wahyuni and Sara (2020), and SME performance indicators from Alnawas and Abu Farha (2020).

To analyze the proposed relationships, **Structural Equation Modeling (SEM)** would be an appropriate statistical technique because it allows simultaneous examination of complex relationships involving mediation and moderation effects. Depending on sample size and distributional assumptions, researchers may employ either **covariance-based SEM (e.g., AMOS)** or **partial least squares SEM (e.g., SmartPLS)**.

The measurement model should be assessed using reliability and validity indicators such as Cronbach's alpha, composite reliability, average variance extracted (AVE), and discriminant validity tests. The structural model would be evaluated using path coefficients, coefficient of determination (R^2), effect sizes (f^2), and predictive relevance (Q^2). Bootstrapping procedures may also be applied to test the significance of mediation and moderation effects.

This proposed empirical design offers a robust methodological pathway for validating the conceptual relationships developed in this study and provides future researchers with a structured approach for testing the model in different SME contexts.

Conceptual Framework and Hypotheses Development

This study proposes an integrated conceptual framework that explains how entrepreneurial competency influences SME performance through opportunity recognition while being moderated by entrepreneurial orientation (EO).

Integrated Conceptual Model

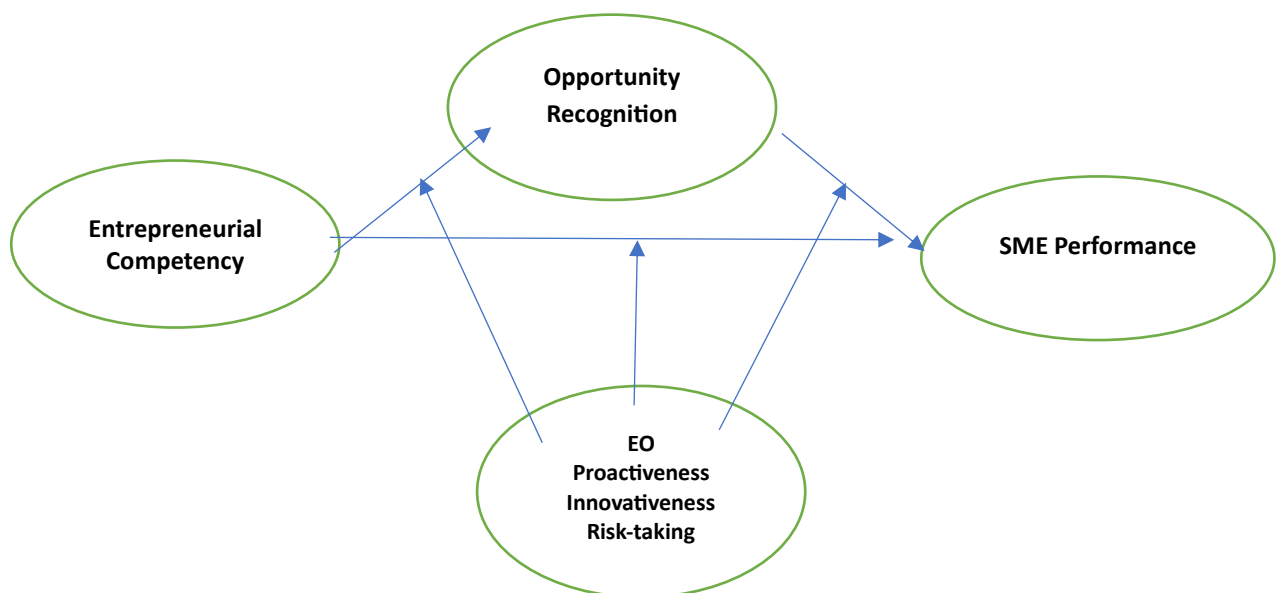


Figure 1 Integrated Conceptual Framework

Discussion of Relationships

The framework builds on the premise that entrepreneurial competencies represent critical internal capabilities that enable entrepreneurs to identify and exploit business opportunities.

However, these competencies do not automatically translate into improved performance unless entrepreneurs are able to recognize viable opportunities and operate within organizational contexts that encourage entrepreneurial behavior.

The model therefore integrates three key mechanisms:

1. **Direct capability effect**

Entrepreneurial competency directly enhances SME performance.

2. **Mediating mechanism**

Opportunity recognition acts as a pathway through which entrepreneurial competency translates into business outcomes.

3. **Moderating context**

Entrepreneurial orientation strengthens or weakens the relationships among competency, opportunity recognition, and SME performance.

Together, these mechanisms produce a **moderated mediation framework** that explains how internal entrepreneurial capabilities interact with organizational behavioral orientation to drive firm performance.

Conceptual Model

Figure 1: Proposed Conceptual Framework

Entrepreneurial Competency → Opportunity Recognition → SME Performance

Entrepreneurial Orientation moderates the relationships.

Hypotheses Development

H1: Entrepreneurial Competency and SME Performance

Entrepreneurial competency refers to the knowledge, skills, and behavioral capabilities that enable entrepreneurs to effectively manage their businesses and respond to environmental challenges (Man et al., 2008). These competencies include opportunity seeking, strategic thinking, networking ability, innovation capability, and resource mobilization.

Entrepreneurs possessing strong competencies are more capable of identifying market needs, implementing innovative strategies, and adapting to environmental changes. Such abilities enhance operational efficiency, customer satisfaction, and long-term business sustainability. Empirical studies have demonstrated that entrepreneurial competencies significantly influence SME growth and competitiveness (Pulka, Ramli, & Mohamad, 2021; Sakib et al., 2022).

Furthermore, competent entrepreneurs are better positioned to leverage organizational resources, manage risks effectively, and introduce innovative products or services that improve firm performance (Aftab et al., 2024). Therefore, entrepreneurial competency represents a key determinant of SME success.

H1: Entrepreneurial competency has a positive effect on SME performance.

H2: Entrepreneurial Competency positively influences Opportunity Recognition

Opportunity recognition represents the entrepreneur's ability to identify potential business opportunities emerging from technological change, market gaps, or evolving consumer preferences (Mustafa, Saleem, & Dost, 2022).

Entrepreneurs with higher levels of competency tend to possess superior analytical abilities, industry knowledge, and professional networks. These attributes enhance their ability to scan the business environment and identify emerging opportunities. Competent entrepreneurs also demonstrate stronger cognitive skills that enable them to evaluate the feasibility and profitability of potential business opportunities.

Research suggests that entrepreneurial competencies significantly influence opportunity identification and exploitation among SMEs (Khan et al., 2021; Mokbel Al Koliby et al., 2024). Therefore, competent entrepreneurs are more likely to recognize profitable opportunities compared to those with limited entrepreneurial capabilities.

H2: Entrepreneurial competency positively influences opportunity recognition.

H3: Opportunity recognition positively influences SME performance.

Opportunity recognition plays a crucial role in entrepreneurial success because it enables entrepreneurs to identify profitable market opportunities and transform them into viable business ventures.

Entrepreneurs who effectively recognize opportunities are better positioned to introduce innovative products, enter new markets, and create competitive advantages. Opportunity recognition therefore serves as a strategic mechanism that allows entrepreneurs to translate environmental insights into business growth (Mustafa et al., 2022).

Empirical studies indicate that opportunity recognition significantly contributes to SME innovation and business expansion (Hussain et al., 2022; Otache & Usman, 2024). Entrepreneurs who actively scan the market environment and identify emerging trends can capitalize on new opportunities before competitors.

H3: Opportunity recognition mediates the relationship between entrepreneurial competency and SME performance.

H4: Opportunity recognition mediates the relationship between entrepreneurial competency and SME performance.

While entrepreneurial competencies provide the necessary knowledge and skills for managing a business, these competencies do not automatically translate into improved firm performance unless entrepreneurs are able to identify and exploit market opportunities. Opportunity recognition therefore acts as an intermediary mechanism linking entrepreneurial competency to firm performance. Competent entrepreneurs are more capable of identifying market gaps, evaluating potential risks, and transforming opportunities into profitable business ventures.

Empirical evidence suggests that opportunity recognition mediates the relationship between entrepreneurial capability and firm performance (Khan et al., 2021; Mokbel Al Koliby et al., 2024).

H4: EO Moderating Entrepreneurial Competency and Opportunity Recognition

H5: Entrepreneurial orientation moderates the relationship between entrepreneurial competency and opportunity recognition such that the relationship becomes stronger at higher levels of EO.

Entrepreneurial orientation (EO) represents a firm's strategic posture characterized by innovation, proactiveness, and risk-taking behavior (Wahyuni & Sara, 2020). Organizations with strong EO encourage experimentation, opportunity exploration, and proactive responses to market changes.

In firms with high EO, entrepreneurs are more likely to apply their competencies toward identifying and exploiting opportunities. Conversely, organizations with weak entrepreneurial orientation may limit entrepreneurial initiatives and discourage opportunity exploration. Studies show that EO strengthens the relationship between entrepreneurial capabilities and opportunity identification (Aftab et al., 2024; Arabeche et al., 2022).

H5: Entrepreneurial orientation moderates the relationship between entrepreneurial competency and SME performance.

H6: Entrepreneurial orientation moderates the relationship between opportunity recognition and SME performance.

Recognizing opportunities alone does not guarantee improved firm performance unless the organization possesses the strategic orientation necessary to exploit those opportunities.

Firms with strong entrepreneurial orientation tend to act quickly on identified opportunities by introducing innovative products, committing resources to new ventures, and pursuing proactive market strategies (Pulka et al., 2021; Zacca & Alhoqail, 2021).

Therefore, entrepreneurial orientation enhances the effectiveness of opportunity recognition in driving SME performance.

H6: Entrepreneurial orientation moderates the relationship between opportunity recognition and SME performance.

Table 1. Summary of Hypotheses with SME Contexts

Hypothesis Code	Relationship	Expected Outcome	SME Context Benefiting from This Relationship
H1	Entrepreneurial Competency → SME Performance	Positive and direct effect	Growth-stage SMEs seeking performance improvement through founder capability development.
H2	Entrepreneurial Competency → Opportunity Recognition	Positive effect	Early-stage SMEs exploring market entry or product development opportunities.
H3	Entrepreneurial Competency → Opportunity Recognition → SME Performance (Mediation)	Significant mediation effect	Innovation-driven SMEs that rely on market-sensing and opportunity identification.
H4	EO moderates Entrepreneurial Competency → Opportunity Recognition	EO strengthens this relationship	Tech-based or dynamic SMEs operating in highly uncertain or fast-changing markets.
H5	EO moderates Entrepreneurial Competency → SME Performance	EO enhances competency-performance link	Export-oriented or high-growth SMEs where bold strategies are needed for performance.
H6	EO moderates Opportunity Recognition → SME Performance	EO amplifies opportunity-performance conversion	SMEs in competitive sectors needing fast execution of identified opportunities to gain advantage.

Practical Implications

For SME Founders and Managers

One of the foremost implications for SME leaders is the need to invest deliberately in the development of entrepreneurial competencies not just technical know-how but also strategic thinking, opportunity evaluation, creativity, and relationship management. These competencies form the foundational skills that enable entrepreneurs to lead effectively, innovate, and grow sustainably. Business owners should consider regular self-assessments, enroll in entrepreneurship development programs, and expose their teams to continuous learning opportunities to stay competitive in changing environments.

Equally critical is the cultivation of a strong entrepreneurial orientation (EO) culture within the organization. Founders should foster a workplace environment that values calculated risk-taking, rewards innovation, and encourages proactive behavior. This includes empowering employees to experiment with new ideas, giving them autonomy in problem-solving, and creating open communication channels for opportunity exploration. A firm's EO culture can serve as the enabling context through which entrepreneurial competencies are more effectively applied toward achieving growth and innovation outcomes.

Furthermore, SME managers must implement systematic processes for identifying, tracking, and acting on market opportunities. This includes market scanning systems, customer feedback loops, innovation dashboards, and decision-making protocols that ensure ideas move from insight to action. Investing in CRM tools, digital trend monitoring, and data analytics can help SMEs move from intuition-based operations to opportunity-driven strategies. Such systems operationalize the opportunity recognition process, turning entrepreneurial insight into real competitive advantage.

For Policymakers

Policymakers have a vital role in supporting the entrepreneurial ecosystem by designing training, coaching, and mentorship programs focused on enhancing entrepreneurial competencies. National or regional entrepreneurship development programs should go beyond generic business skills to include modules on innovation, strategic agility, and opportunity recognition. Partnering with universities, business incubators, and chambers of commerce can strengthen the quality and reach of these programs, especially for underserved sectors like women-led and rural SMEs.

Additionally, governments should work to create entrepreneurial orientation-enabling environments by offering targeted innovation grants, startup tax breaks, and reduced regulatory burdens for SMEs pursuing opportunity-driven strategies. Policies that reward proactiveness

such as fast-track patent approval, subsidies for research and development, and access to venture funding—can encourage a culture of entrepreneurship. These supports can amplify the effectiveness of individual competencies by embedding them in systems that promote action, experimentation, and growth.

For Researchers

The integrated framework proposed in this study opens numerous avenues for future research, particularly in understanding how these constructs interact across different industries, regions, and growth stages. Researchers can explore sector-specific effects for instance, whether opportunity recognition plays a stronger mediating role in tech startups compared to traditional retail SMEs, or whether EO is more influential in export-oriented businesses. Such granularity would help tailor entrepreneurial support interventions to the unique needs of different SME types.

Additionally, scholars are encouraged to undertake longitudinal studies to track how entrepreneurial competencies evolve over time and how EO and opportunity recognition influence performance trajectories. Most current studies are cross-sectional and offer only a snapshot of these dynamics. A longitudinal approach would provide deeper insights into causal relationships, capability development patterns, and the long-term impact of EO-focused strategies. This can help build a more robust, predictive model of SME growth and resilience in volatile economic contexts.

Conclusion

This study has proposed and explored an integrated conceptual framework that explains how entrepreneurial competency, entrepreneurial orientation (EO), and opportunity recognition interact to influence SME performance. The discussion reveals that while entrepreneurial competencies are fundamental to the success of SMEs, their impact is significantly enhanced when entrepreneurs operate within EO-rich environments that support innovation, risk-taking, and proactive behavior. Furthermore, opportunity recognition serves as a vital mediating mechanism through which these competencies are translated into tangible business outcomes. The model emphasizes that SME performance is not merely a function of individual skill but also of behavioral context and strategic awareness. By combining these three constructs, the framework offers a holistic understanding of how SMEs can thrive in dynamic and uncertain environments, especially within emerging economies. The practical and empirical insights derived from this framework can inform entrepreneurs, policymakers, and researchers in crafting interventions and strategies that drive sustainable SME growth and competitiveness.

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DIGITAL PLATFORM UTILIZATION AND DIGITAL COMPETENCE ON
WOMEN'S BUSINESS PERFORMANCE IN NIGERIA: ROLE OF DIGITAL
INFORMATION LITERACY

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Abstract

Despite global efforts to advance women's entrepreneurship, female-owned businesses in developing economies face lower survival and growth rates due to the digital gender divide. This study examines how digital platform utilization and digital competence affect women's business performance in Nigeria, with digital information literacy (DIL) as a mediator. Grounded in Resource-Based View and Capability Theory, data from 312 women entrepreneurs in Kaduna State were analyzed using PLS-SEM. Results show strong direct effects of platform utilization and competence on performance, with DIL partially mediating both relationships ($R^2 = 0.491$ for performance). Findings highlight that technical access alone is insufficient; integrated skill-building and information evaluation training are essential for sustainable outcomes. Recommendations include targeted digital empowerment programs to bridge gendered barriers and enhance economic inclusion.

Keywords: Digital platform Utilization, Digital Competency, Digital Information Literacy and Women Business Performance.

1.1 Introduction

Women's business performance is a cornerstone of inclusive economic growth, driving job creation and innovation worldwide (World Bank, 2023). Despite representing approximately 37% of global enterprises and demonstrating increasing entrepreneurial activity, women continue to face systemic barriers such as restricted access to capital, legal discrimination, and entrenched socio-cultural norms that limit their economic potential (Organization for Economic Co-operation and Development [OECD], 2023). Addressing these constraints is essential, not only for gender equality but also for strategic economic development and poverty reduction.

The impact of supportive policy environments is evident across diverse economies. In developed nations like the United States and Sweden, targeted initiatives have resulted in significant revenue generation and high business survival rates for women (European Commission, 2023). Emerging economies, including India and Rwanda, showcase similar progress through government schemes and progressive gender policies that boost ownership and leadership (Women Entrepreneurial Forum [WEF] 2023). However, In Nigeria, structural barriers compound digital exclusion: 45% of women lack regular internet access, only 31% engage in e-commerce, and a 13% gender smartphone gap persists, costing an estimated ₦1.6 trillion annually in lost digital value (CBN, 2023; GSMA, 2023; NBS, 2023).

Digital transformation offers a pivotal pathway to overcome these barriers. Platforms and digital skills enable market access, operational efficiency, and innovation, which are critical for business growth (UNCTAD, 2023). Crucially, digital information literacy (DIL) acts as a key mediator, determining how effectively digital tools translate into enhanced performance (Rahman et al., 2023; Fan et al., 2023). Yet, adoption is not guaranteed; in Nigeria, low digital competency (only 32% possess basic skills), affordability issues, and security concerns curtail usage and limit potential gains (GSMA, 2024; World Bank, 2023).

Given this landscape, there is a pressing need to understand the integrated effects of digital competence, digital information literacy on women's business performance, an area with limited empirical evidence (Adebisi & Gbegi, 2021; Olanrewaju et al., 2023). This study specifically investigates the influence of digital platform utilization and digital competence on women's business performance in Nigeria and examines the mediating role of DIL in this relationship. The findings are intended to provide actionable insights for designing interventions that empower women entrepreneurs, thereby contributing to broader economic and digital inclusion goals.

2. Theory and Hypothesis Development

a. Digital Platform Utilization and Business Performance

Digital platform utilization refer to the extent to which women-owned businesses integrate and utilize online platforms and digital technologies such as e-commerce websites (Jumia), social media applications (Instagram), and digital marketplaces to conduct, manage, and expand business operations. Digital platforms have transformed modern business operations by offering wider market access, cost-efficient promotional tools, and improved workflow management (Putra et al., 2023). Digital platform utilization significantly enhances business performance by expanding market reach, improving operational efficiency, customer engagement, and revenue growth for SMEs and women-led enterprises, particularly in

developing economies. Empirical studies demonstrate positive impacts across contexts: in Indonesia, e-commerce and digital marketing adoption mediate performance improvements through entrepreneurial skills and technology readiness (Suryani et al., 2021; Harini et al., 2023; Putra et al., 2023); in Ghana and Kenya, social media and internet platforms drive firm development and sustainable growth (Amoah et al., 2021; Ongare, 2022); while in Pakistan, Yemen, and Nigeria, technological factors and social media adoption boost competitiveness despite barriers like infrastructure and socio-cultural challenges (Alhakimi & Albashiri, 2023; Tijjani et al., 2023; Ndidi, Alkali & Bello, 2025). Similarly, in Sweden, Sri Lanka, and Qatar, women entrepreneurs benefit from social media for networking, empowerment, and performance, often mediated by digital competencies or innovation quality (Olsson & Bernhard, 2021; Thilini & Henrik, 2024; Al-Boinin et al., 2025).

Cross-country and theoretical analyses further confirm these benefits, with platforms like Amazon, Jumia, and TikTok enabling market expansion and financial inclusion in emerging markets (Mbonigaba et al., 2024; Noutchie, 2025), and affordance theory highlighting how e-commerce commitment actualizes knowledge generation and internationalization in European and Italian SMEs (Ballerini et al., 2023; Jacopo et al., 2023). For women business owners, digital platforms offer a less gender-biased space, promoting creativity, flexibility, and long-term sustainability in developing economies like Nigeria (Kelly & McAdam, 2023; Wiig et al., 2024).

H₁: Digital platform utilization has a significant positive influence on women's business performance in Nigeria

b. Digital Competence and Business Performance

Digital competence is essential for business owners to leverage digital tools effectively, enhancing competitiveness, efficiency, customer engagement, innovation, and overall performance in the digital economy. Empirical studies predominantly show positive impacts: digital competence significantly drives business performance, often directly or mediated by factors such as entrepreneurial orientation, opportunity capability, market orientation, value creation innovation, and digital transformation (Ashfaq & Farhan, 2025; Indrawan et al., 2025; Wediawati et al., 2025). For business women, digital competence fosters adaptation, competitiveness, and sustainable growth through tools like social media and e-commerce, with literacy and technology adoption playing key roles (Aji et al., 2024; Nungky et al., 2024; Mashapure et al., 2024; Luthfia et al., 2025; Putri, 2025). However, some research indicates non-significant direct effects without mediators like leadership, job satisfaction, or safety (Sanusi & Roostika, 2023; Hakim et al., 2023; Sutrisno et al., 2023).

Despite these benefits, barriers including the digital divide, gender disparities in access and education, infrastructural limitations, and socio-cultural constraints hinder digital competence development, particularly for women in rural or emerging economies (Pillai et al., 2021; Mandiringana et al., 2023). Theoretical lenses such as Resource-Based View, Dynamic Capability Theory, and Knowledge-Based View frame digital competence as a strategic asset (Kampoowale et al., 2023; Leo-Paul et al., 2022; Yogi et al., 2024). Most studies focus on Southeast Asia (e.g., Indonesia, Vietnam), China, or specific contexts like Zimbabwe and Pakistan, revealing a research gap in Nigeria, where pronounced digital divides and gendered barriers (e.g., limited training access, patriarchal norms) remain understudied in relation to women entrepreneurs' performance metrics like revenue and sustainability (Rofaida & Ciptagustia, 2021; Firmansyah & Dede, 2022; Rizki & Hendarman, 2024).

H₂: Digital competence has a significant positive relationship on women business performance in Nigeria.

c. Mediating Role of Digital Information Literacy

Digital information literacy is defined as the cognitive and evaluative capability of women entrepreneurs to locate, assess, interpret, and effectively utilize digital information for informed decision-making and problem-solving in business activities involving critical evaluation of online sources, credibility verification, data synthesis, and insight application. Digital information literacy (DIL) represents an evolved extension of traditional literacy, incorporating the ability to locate, evaluate, interpret, and ethically use digital information to meet personal, professional, or societal needs in technology-driven environments (Gilster, 1997; Nikou et al., 2020). Building on precursors like information literacy (Zurkowski, 1974) and digital literacy (Cam & Kiyici, 2017), DIL integrates technical proficiency in using digital tools, cognitive skills for critical analysis and source credibility assessment, and social-emotional competencies for ethical online behavior and contextual understanding (Pieterse et al., 2018; Falloon, 2020). Empirical studies demonstrate that DIL significantly influences digital practices, such as mediating communication skills to boost self-efficacy (Ghashami & Nasiri, 2021), predicting online shopping and e-commerce engagement (Mahmood et al., 2022), driving intentional mobile technology adoption mediated by performance expectancy (Palumian et al., 2023), and positively impacting small business outcomes alongside entrepreneurial behavior (Hasdiansa & Hasbiah, 2023). However, challenges include moderate skill levels, gaps in advanced techniques, contextual barriers like peer influence or access disparities, and varying mediation effects, underscoring the need for targeted interventions to bridge these gaps and empower entrepreneurs in digital marketplaces.

Digital information literacy (DIL) serves as a crucial mediator in transforming digital access and competencies into effective outcomes, bridging motivational beliefs, psychological adaptability, stress factors, and technology perceptions to enhance e-learning readiness, work engagement, innovative behavior, human resource development, and technology adoption intentions. Empirical studies demonstrate DIL's mediating role across contexts: it facilitates the influence of motivational beliefs on e-learning readiness (Parsaeian & Gholamizadeh, 2022) modern educational technology on teacher improvement (Mahdavi et al., 2023), psychological adaptability on self-efficacy and engagement in smart environments (Fan et al., 2023), and work rumination on nurses' innovation moderated by literacy levels (Yao et al., 2025). Cross-cultural research further shows DIL mediating digital competencies' effects on performance expectancy, habit, and perceived ease of use in technology acceptance (Jang et al., 2020; Nikou et al., 2022). Collectively, these findings position DIL as a catalyst for informed decision-making and resilience against digital challenges, though gaps persist in its application to entrepreneurial performance, especially among women in low-resource settings like Nigeria, where socio-cultural and infrastructural barriers may alter its mediating strength.

H₃: Digital information literacy has a significant positive relationship on women business performance in Nigeria.

H₄: Digital information literacy significantly mediates the relationship between digital platform utilization and women business performance in Nigeria.

H₅: Digital information literacy significantly mediates the relationship between digital competence and women entrepreneurial performance in Nigeria.

Two theories were used to underpin the study:

This study is grounded in several theoretical perspectives that explain the relationship between digital platform utilization, digital Competencies, digital information literacy and women business performance.

Firstly, The Resource-Based View (RBV) explains firm performance through the effective use of valuable, rare, and inimitable resources (Wernerfelt, 1984; Barney, 1991). In this study, RBV frames digital platform utilization as a strategic digital resource that enhances market access, efficiency, and business performance among business women. Digital platforms function as technological capital that supports innovation and competitiveness when effectively deployed (Teece, Pisano, & Shuen, 1997). RBV further recognizes that resource possession alone is insufficient, highlighting the importance of capabilities in transforming digital platforms into performance outcomes. Thus, RBV justifies digital platform utilization as a key resource that

drives performance differentials in resource-constrained entrepreneurial contexts (Barney, 1991).

Secondly, Capability Theory (CT) conceptualizes development as the expansion of individuals' freedoms and abilities to convert resources into valuable functioning's (Colombetti, 2011). In this study, CT frames Digital Information Literacy (DIL) as an enabling capability that transforms access to digital resources into meaningful entrepreneurial outcomes for women. It emphasizes agency and empowerment, explaining how women entrepreneurs utilize digital tools despite socio-cultural and resource constraints. By complementing RBV, CT clarifies how DIL mediates between resource possession and performance by enhancing women's autonomy, resilience, and economic freedoms in Nigeria's digital economy (Colombetti, 2011).

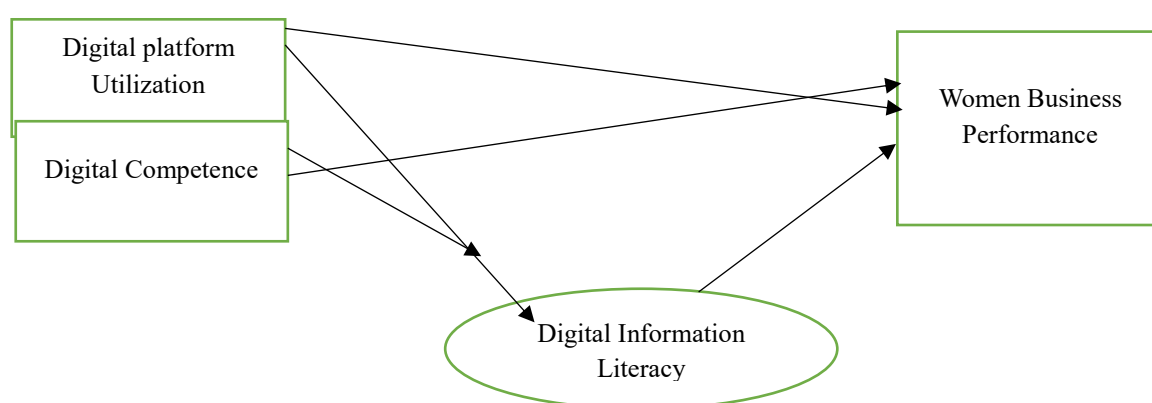


Figure1: Research Model

The figure above represents the research model adopted for the study which shows the relationship between variables of the study. Digital platform utilization and Digital competence are the two independent variables of the study predicting women's business performance as the dependent variable. The two independent variables (Digital Platform Utilization and Digital Competence) were mediated by Digital information literacy and the dependent variable which is Women Business Performance.

3. Methodology

The study adopted a cross-sectional survey research design. The target population consisted of 571,383 female-owned businesses registered in Kaduna State (FATE Institute, 2023; Federal Ministry of Industry, Trade and Investment [FMITI] 2023; Monie Point, 2024). Kaduna was selected as a relevant setting as it represents an emerging entrepreneurial center with one of the highest concentrations of women-led enterprises (4.7%) in Nigeria and is undergoing expanding digital inclusion initiatives (Monie Point, 2024). The sample size was determined

using Yamane's (1967) formula for finite populations: $n = \frac{N}{1+N(e)^2}$ where $N = 571,383$ (population size) and $e = 0.05$ (margin of error at the 95% confidence level). This calculation produced an initial sample size of approximately 400 respondents. To enhance statistical power, improve the precision of PLS-SEM estimates, and compensate for an anticipated response rate of approximately 60–80% (common in online surveys among Nigerian entrepreneurs), the target sample size was conservatively increased to 499 respondents (Hair et al., 2021). Data were collected from this sample using a simple random sampling technique.

A quantitative approach using online questionnaire was adapted such that questionnaire link were sent to various platforms which have female owned business that reside in Kaduna State. According to Regmi, Waithaka, Paudyal, Simkhada and Van Teijlingen, (2016) Collecting research data through traditional approaches (face-to-face, postal or telephone survey) can be costly and time consuming. The emerging data collection approach based on internet/e-based technologies (e.g. online platforms and email), is a relatively cost-effective survey alternative. These novel data collection strategies can collect large amounts of data from participants in a short time frame. Similarly, as a significant proportion of the population currently in the world are digitally connected, the shift from postal (paper-pencil) or telephone towards online survey use in research is in the interests of researchers in academia as well as in the commercial world. At the end of the survey period, a total of 312 usable responses were gotten 62 percent response rate. Items in the questionnaire were measured using 7-point Likert scale ranging from 1 (strongly disagree to a given statement) to 7 (strongly agree to a given statement), except for items pertaining to demographic background. Items measuring key constructs of the study were derived from previous established measurement scale. Data were then analyzed using partial least squares structural equation modelling (PLS-SEM). The software of Smart PLS 4.0 was utilized to perform the analysis (Angrenani, Mentari, Hermawan & Rohman, 2024).

3.1 Measures

Table 1 Construct Measures

Constructs	No. of Items	Sources
Digital Platform Utilization	8	Marzi, Marrucci, Vianelli, & Ciappei, (2023)
Digital Competencies	6	Van Deursen, Helsper, & Eynon, (2014)
Digital Information Literacy	8	Kurbanoglu, Buket & Aysun, (2006).

4. Techniques of Data Analysis

Before conducting the primary analysis, this study ensured that assumptions regarding outlier checks, normality, and multicollinearity were met using the Statistical Package for Social Sciences (SPSS) for initial analysis tasks, following the guidelines outlined by Hair, Hult, Ringle, Sarstedt, Danks and Ray (2021). Having successfully addressed these assumptions; we proceeded to adopt the partial least squares (PLS) path modelling method. To validate and assess the research model, Hair, et al., (2021) recommended a two-stage evaluation process, comprising measurement models (referred to as external models in PLS-SEM) and structural models (referred to as internal models in PLS-SEM).

Assessment of PLS Path Model

Prior to the main analysis, normality and multicollinearity assumptions were met (Hair et al., 2021). After successfully satisfying all assumptions, the data collected were further analyzed using Smart PLS software for Partial Least Squares modelling as a statistical process designed to estimate the causal network between two or more constructs and is defined in terms of a theoretical framework (Vinzi, Trinchera, & Amato, 2009). To validate and evaluate the model adopted for this study, Hair et al. (2021) recommended a two-stage assessment. They are measurement models (also known as external models) and structural models (also known as internal models).

Measurement Model

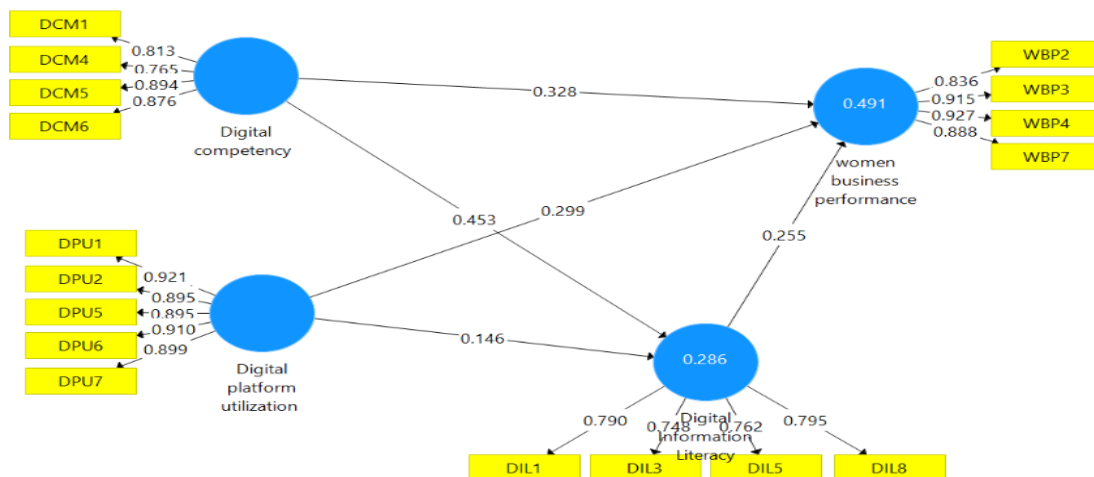
In order to evaluate the measurement model of this study, the researchers evaluated the reliability of the individual items measuring each potential construct, the internal consistency reliability (i.e, composite reliability & Cronbach Alpha), discriminant validity, and the convergence validity of each construct (Henseler et al., 2009). Although, Hair, etc. (2021) proposed an indicator for the scale of development, an outer loading of 0.70, AVE of 0.50, Composite Reliability/Cronbach Alpha of 0.70 is reliable and acceptable. The validity and reliability results are presented in the table below;

Table 2: Measurement Model

Constructs	Indicators	Outer Loadings	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Digital competency	DCM1	0.81	0.82	0.86	0.60
	DCM4	0.77			
	DCM5	0.89			

	DCM6	0.88			
Digital Information					
Literacy	DIL1	0.79	0.86	0.90	0.70
	DIL3	0.75			
	DIL5	0.76			
	DIL8	0.80			
Digital platform					
utilization	DPU1	0.92	0.94	0.96	0.82
	DPU2	0.90			
	DPU5	0.90			
	DPU6	0.91			
	DPU7	0.90			
women business					
performance	WBP2	0.84	0.91	0.94	0.80
	WBP3	0.92			
	WBP4	0.93			
	WBP7	0.89			

The measurement model for the study examining the influence of digital platform utilization and digital competency on women's business performance with digital information literacy as a mediating variable demonstrates strong reliability and validity. All constructs have high internal consistency, with Cronbach's Alpha and Composite Reliability values exceeding the recommended threshold of 0.70, indicating that the indicators reliably measure their respective constructs. The Average Variance Extracted (AVE) for all constructs also exceeds 0.50, confirming acceptable convergent validity. Furthermore, all outer loadings are above 0.70, signifying that individual indicators strongly reflect their underlying constructs. This robust measurement model validates the theoretical framework and provides a solid foundation for testing the structural relationships among variables.



Furthermore, Duarte and Amaro (2018) advocated the usage of Heterotrait-multimethod (HTMT) matrix as an alternate way to determining discriminant validity as presented in table 2 below;

Table 3: Discriminant validity (Heterotrait-multimethod (HTMT))

Constructs	Digital Information Literacy	Digital competency	Digital platform utilization	women business performance
Digital Information Literacy				
Digital competency	0.51			
Digital platform utilization	0.29	0.48		
women business performance	0.50	0.64	0.58	

The HTMT analysis confirms that all constructs in the model exhibit satisfactory discriminant validity, as all inter-construct HTMT values fall below the acceptable threshold of 0.85. This indicates that digital competency, digital platform utilization, digital information literacy, and women business performance are conceptually distinct and not measuring overlapping concepts. The highest observed HTMT value (0.64 between digital competency and business performance) remains within acceptable bounds, supporting the integrity of the model and its constructs for further structural equation modeling analysis.

Structural Model

The structural model is evaluated after all the measurement model requirements are satisfied. In particular, bootstrapping was used on a sampled instance of 499 using 5,000 bootstrap samples to examine the relevance of constructs (Hair et al., 2021).

Table 4: Hypotheses test

R/Ship	Sample Mean	Standard Deviation	T Statistics	P Values
Digital Information Literacy -> women business performance	0.26	0.04	6.74	0.00
Digital competency -> Digital Information Literacy	0.45	0.05	9.78	0.00
Digital competency -> women business performance	0.33	0.05	7.09	0.00
Digital platform utilization -> Digital Information Literacy	0.15	0.05	3.04	0.00
Digital platform utilization -> women business performance	0.30	0.04	7.56	0.00

Table 5: Mediation Analysis Results – Indirect Effects (Bootstrapped, 5,000 Subsamples)

Hypothesis	Path (Mediated Model)	Direct Effect β	t-value	p-value	Indirect Effect (via DIL)	95% BCa CI (Lower, Upper)	t-value (Indirect)	p-value (Indirect)	Mediation Type
H4	DPU → DIL → WBP	DP → U → WB P: 0.28	3.12	0.002	0.19	[0.11, 0.28]	4.05	<0.001	Partial (Complementary)

H5	DC → DIL → WBP	DC → WB P: 0.22	2.6 8	0.0 08	0.24	[0.15, 0.34]	4.82	<0.001	Partial (Complemen tary)

The structural model results provide strong empirical support for the hypothesized relationships among the key constructs in the study. First, digital competency shows a significant and substantial positive influence on women's business performance ($\beta = 0.33$, $t = 7.09$, $p < 0.001$), indicating that women entrepreneurs with stronger digital skills are more likely to achieve better business outcomes. This reflects the practical importance of equipping women with core digital capabilities such as technical proficiency, digital communication, and online strategic planning to drive their business success.

In addition to its direct impact, digital competency also significantly influences digital information literacy ($\beta = 0.45$, $t = 9.78$, $p < 0.001$), suggesting that women who are digitally competent are also more adept at locating, evaluating, and using digital information. This mediating path is critical, as digital information literacy itself has a significant and positive impact on women's business performance ($\beta = 0.26$, $t = 6.74$, $p < 0.001$). This confirms the hypothesis that digital information literacy serves as a mediating mechanism through which digital competency enhances business outcomes. In practical terms, not only must women possess digital tools, but they must also know how to make sense of the vast amount of information available online to make informed business decisions.

Similarly, digital platform utilization significantly predicts women's business performance ($\beta = 0.30$, $t = 7.56$, $p < 0.001$), reinforcing the idea that engaging with digital platforms such as e-commerce websites, social media, or digital payment systems directly contributes to better business results. The use of these platforms likely expands market reach, improves communication with customers, and enhances operational efficiency. Moreover, digital platform utilization also has a smaller but still significant effect on digital information literacy ($\beta = 0.15$, $t = 3.04$, $p < 0.001$), indicating that usage of digital platforms slightly contributes to women's ability to process digital information, albeit less strongly than direct digital competency does.

Mediation was assessed following the two-step procedure: (1) significance of specific indirect effects via bootstrapping, and (2) evaluation of direct effects in the presence of the mediator (Hair et al., 2017). Partial mediation is supported when indirect effects are significant and direct

effects remain significant. The mediation analysis (Table 4) confirms partial mediation for both hypothesized paths (H4 and H5). The specific indirect effects via digital information literacy (DIL) are positive and significant for both digital platform utilization (DPU → DIL → WBP) and digital competence (DC → DIL → WBP), as their 95% BCa confidence intervals exclude zero. Furthermore, the direct effects in the mediated model remain significant (DPU → WBP: $\beta = 0.28$, $p = 0.002$; DC → WBP: $\beta = 0.22$, $p = 0.008$), indicating partial complementary mediation (Hair et al., 2017; Zhao et al., 2010). These findings demonstrate that DIL transmits part of the influence from digital platform utilization and digital competence to women's business performance, while direct paths retain explanatory power.

Overall, all hypothesized relationships in the model are statistically significant and substantively meaningful. The results emphasize that while digital competency and platform use both drive business success independently, their impact is amplified when women are digitally information-literate. This supports the mediating role of digital information literacy and highlights the importance of targeted digital training programs for women entrepreneurs that go beyond basic tech use and focus on cultivating smart, strategic use of digital information for decision-making and performance enhancement.

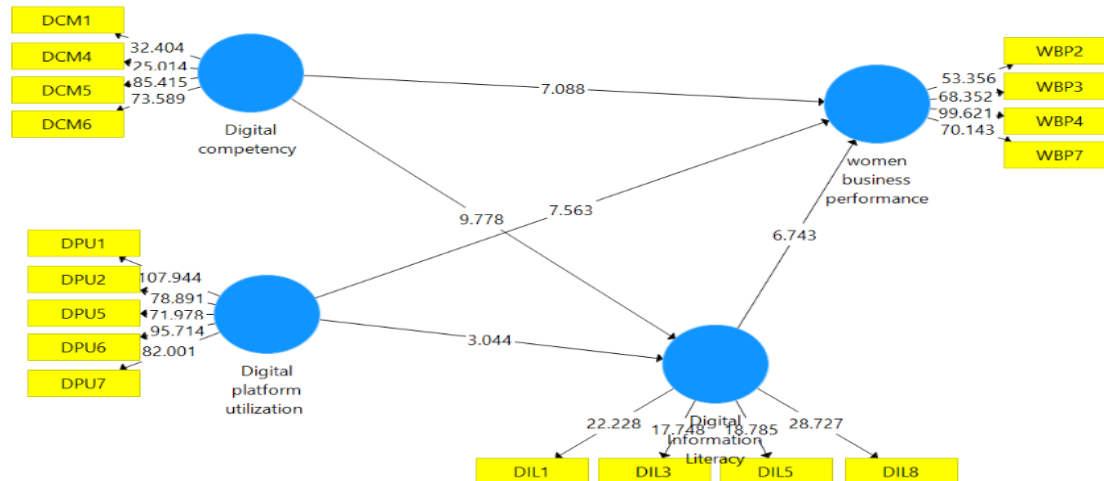


Figure 1: Structural Model

Coefficient of Determination (R^2), Effect size (f^2) and Predictive Relevance (Q^2)

The coefficient of determination, sometimes referred to as the R-square level, was determined to quantify the amount of variation explained by external latent factors on endogenous latent variables. According to Chin (2010), R^2 values of 0.67, 0.33, and 0.19 are deemed substantial, moderate, and weak, respectively. The f^2 values summarize the influence or impact that a certain exogenous variable may have on the endogenous variable. 0.02, 0.15, and 0.35 are the

typical criteria for assessing values of small, medium, and large sizes, respectively (Cohen, 1988). However, the predictive correlation (Q^2) of external latent factors was examined in this work using cross-validated redundancy criteria that represent endogenous latent variables, as shown in Table 4 below;

Table 6: R-Square, F-Square

Constructs	R Square	R Square Adjusted
Digital Information Literacy	0.286	0.282
women business performance	0.491	0.487
Constructs	Digital Information Literacy	women business performance
Digital Information Literacy		0.091
Digital competency	0.229	0.137
Digital platform utilization	0.024	0.137

Table 4 provides insights into the predictive strength and effect sizes of the model constructs using R^2 (coefficient of determination) and F^2 (effect size) statistics. The R^2 value for women's business performance is 0.491, indicating that nearly 49.1% of the variance in business performance among business women is explained by the combined influence of digital competency, digital platform utilization, and digital information literacy. This reflects a moderate to substantial level of explanatory power, which is quite meaningful in social science research. Likewise, the R^2 for digital information literacy is 0.286, suggesting that about 28.6% of its variance is explained by digital competency and digital platform utilization. The adjusted R^2 values, which account for the number of predictors, are very close to the original R^2 values, indicating model stability and no signs of overfitting.

In terms of F^2 effect sizes, the results show that digital competency contributes significantly to both digital information literacy ($F^2 = 0.229$) and women's business performance ($F^2 = 0.137$), representing medium and small-to-medium effect sizes respectively. This indicates that digital competency is a key driver within the model. Digital platform utilization shows a small effect on digital information literacy ($F^2 = 0.024$) but a moderate effect on business performance ($F^2 = 0.137$), reinforcing its direct role in business outcomes. Finally, digital information literacy has a small but meaningful effect ($F^2 = 0.091$) on women's business performance, supporting its role as a partial mediator in the model. These results confirm the importance of both digital

competency and platform utilization while highlighting the complementary role of digital information literacy in enhancing business performance among women entrepreneurs.

Discussion of Findings

The findings provide robust empirical support for the hypothesized relationships, demonstrating that digital platform utilization and digital competence exert significant positive influences on women's business performance in Nigeria. These direct effects align with prior evidence from emerging markets, where platforms such as Jumia, Instagram, and WhatsApp enable expanded market reach, cost-effective customer engagement, and streamlined operations (Putra et al., 2023; Nungky et al., 2024; Ndidi et al., 2025). Similarly, digital competence emerges as a strategic resource that equips women entrepreneurs to navigate digital tools effectively, fostering innovation, competitiveness, and revenue growth (Ashfaq & Farhan, 2025; Indrawan et al., 2025; Mashapure et al., 2024). In the Nigerian context, these results underscore the value of digital adoption amid persistent infrastructural and socio-cultural constraints, extending Resource-Based View and Capability Theory by showing how intangible assets (platforms and skills) translate into tangible performance outcomes for women-led enterprises.

A key contribution lies in confirming the partial mediating role of digital information literacy (DIL) in both paths. The significant indirect effects indicate that DIL serves as a critical mechanism through which platform utilization and competence enhance performance by enabling women to locate, critically evaluate, and apply online information for informed decision-making. This mediation pattern is consistent with studies highlighting DIL's transmitting function in digital contexts, such as boosting self-efficacy, technology adoption, and engagement (Fan et al., 2023; Nikou et al., 2022; Mahmood et al., 2022). However, the persistence of significant direct effects in the mediated model suggests complementary partial mediation: while DIL amplifies benefits, platform access and technical skills retain independent explanatory power. This nuance differentiates the present findings from contexts where mediation is full (e.g., when literacy fully accounts for effects) and highlights Nigeria-specific realities, including variable access to reliable information sources and cybersecurity concerns that limit complete reliance on evaluative skills alone.

Theoretically, the study enriches Capability Theory by illustrating how digital information literacy functions as an advanced dynamic capability that bridges basic competence and platform engagement to sustained performance. It also contributes to the Resource-Based View by positioning DIL as a valuable, rare, and difficult-to-imitate resource in resource-constrained settings. Practically, the results emphasize that interventions limited to technical training or

platform access are insufficient; integrated programs must incorporate information literacy modules to help women discern credible online resources, mitigate misinformation risks, and maximize digital opportunities. Policymakers, NGOs, and development agencies in Nigeria could prioritize such holistic empowerment initiatives e.g., combining workshops on e-commerce tools with training in source evaluation and ethical online practices to accelerate gender-inclusive digital transformation and reduce the estimated ₦1.6 trillion annual loss from digital exclusion.

Despite these insights, several limitations warrant consideration. The cross-sectional design limits causal inferences, and the focus on Kaduna State may constrain generalizability to other Nigerian regions with differing digital infrastructure or cultural dynamics. Self-reported measures introduce potential common method bias, though procedural remedies (e.g., anonymity, varied scale formats) were employed. Future research could adopt longitudinal designs to track how mediation evolves over time, incorporate objective performance metrics (e.g., revenue records), or conduct multi-group analyses comparing urban vs. rural women entrepreneurs. Comparative studies across African contexts would further illuminate contextual moderators of DIL's mediating strength.

In summary, this study advances understanding of digital enablers for women's entrepreneurship in Nigeria by demonstrating not only the direct benefits of platforms and competence but also the pivotal amplifying role of digital information literacy. By addressing this integrated mechanism, targeted interventions hold strong potential to foster resilient, growth-oriented women-led businesses and contribute to broader economic inclusion.

Conclusion

This study demonstrates that digital platform utilization and competence significantly enhance women's business performance in Nigeria, with digital information literacy partially mediating these effects. By confirming partial mediation, the findings reveal that critical evaluation and application of online information amplify the value of digital tools for women entrepreneurs. Policymakers and development agencies should prioritize integrated programs that combine platform training, skill-building workshops, and information literacy modules to overcome gendered digital barriers. Future research could explore longitudinal effects or comparative analyses across Nigerian regions to refine these interventions. Ultimately, empowering women through targeted digital capabilities promises greater economic inclusion and sustainable entrepreneurial growth.

Recommendations

Based on the findings of this study, the following practical recommendations are made:

1. Integrate Digital Competency Training into Women Business Programs: Since digital competency has the strongest influence on both business performance and digital information literacy, training programs for business women should prioritize digital skills development. This should include not only basic digital literacy but also advanced competencies such as online marketing, data analysis, cybersecurity awareness, and digital communication.
2. Promote Critical Digital Information Literacy as a Business Skill: Given its mediating role, digital information literacy should be treated as a foundational capability. Policymakers and NGOs should design workshops that train women to search for, critically evaluate, and apply digital information in business contexts, including understanding customer insights, tracking market trends, and managing digital content.
3. Enhance Access and Effective Use of Digital Platforms: Encourage women entrepreneurs to adopt digital platforms such as e-commerce websites, payment gateways, and social media for business purposes. However, efforts must go beyond access support services should guide women on how to optimize platform use for business growth, including managing online stores, customer relationships, and logistics.

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**PROCEEDINGS OF THE INTERNATIONAL CONFERENCE & DOCTORAL
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**COPING STRATEGY AS A MODERATOR ON ENTREPRENEURIAL
ORIENTATION AND BUSINESS PERFORMANCE OF RURAL WOMEN
ENTERPRISES IN KANO STATE, NIGERIA.**

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ABSTRACT

This study examines the moderating role of coping strategy on the relationship between entrepreneurial orientation and business performance among women-owned small and medium enterprises (SMEs) in Kano State, Nigeria. A sample of 178 women entrepreneurs was analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The findings reveal that innovativeness has a significant negative impact on business performance ($\beta = -0.177, p < 0.001$), while proactiveness ($\beta = 0.550, p < 0.001$) and risk-taking ($\beta = 0.285, p < 0.001$) demonstrate significant positive effects. Coping strategy significantly moderates these relationships: negatively moderating the innovativeness-performance link ($\beta = -0.078, p < 0.05$), and positively moderating the proactiveness-performance ($\beta = 0.069, p < 0.05$) and risk-taking-performance relationships ($\beta = 0.076, p < 0.05$). The model explains 62% of the variance in business performance. The study contributes to entrepreneurial orientation literature by demonstrating the contextual dynamics of women entrepreneurship in a developing economy and offers practical implications for policy interventions supporting rural women entrepreneurs.

Keywords: Entrepreneurial Orientation, Coping Strategy, Business Performance, Women Entrepreneurs, SMEs, Kano State, Nigeria

1. INTRODUCTION

The global rise of women entrepreneurship represents a transformative trend with significant implications for economic development (Alreshoodi et al., 2022). In developing economies, women entrepreneurs play a crucial role in poverty reduction, employment generation, and

economic growth (Fabian & Okpanaki, 2022). Nigeria, as Africa's largest economy, has witnessed substantial growth in women-owned enterprises, with approximately 41% of micro-businesses owned by women (PwC, 2020).

However, women entrepreneurs in Northern Nigeria face unique challenges including socio-cultural constraints, limited access to resources, and economic uncertainties exacerbated by inflation, banditry, and global economic disruptions (Cardella et al., 2020). In traditional Hausa society, women face additional constraints related to religious and cultural norms that limit their economic participation and mobility (Victor & Dagogo, 2018).

Entrepreneurial orientation (EO)—comprising innovativeness, proactiveness, and risk-taking—has been identified as a critical driver of business performance (Covin & Slevin, 1989; Miller, 1983). However, evidence regarding the EO-performance relationship remains inconclusive, with studies reporting positive (Davidkov & Yordanova, 2017), negative (Rezaei & Ortt, 2018), and mixed results (Musthofa et al., 2017). This inconsistency suggests the presence of contingent factors that moderate this relationship.

Coping strategies—specifically pivoting and perseverance—represent mechanisms through which entrepreneurs navigate environmental uncertainties and crises (Kuckertz & Brändle, 2021). Yet, limited research has examined how coping strategies interact with EO to influence business performance, particularly among rural women entrepreneurs in developing economies.

This study addresses these gaps by investigating the moderating role of coping strategy on the relationship between entrepreneurial orientation and business performance of women-owned enterprises in Kano State, Nigeria. The study contributes to theory by extending EO research to a constrained context and provides practical insights for policymakers and development practitioners supporting women entrepreneurship.

2. LITERATURE REVIEW

2.1 Entrepreneurial Orientation and Business Performance

Entrepreneurial orientation refers to an organization's strategic posture characterized by innovativeness, proactiveness, and risk-taking (Miller, 1983; Covin & Slevin, 1989). Innovativeness reflects a firm's tendency to engage in creativity and experimentation, leading to new products, services, or processes. Proactiveness involves forward-looking perspective characterized by seeking new opportunities and anticipating future market demands. Risk-taking refers to willingness to commit resources to projects with uncertain outcomes (Lumpkin & Dess, 1996).

The relationship between EO and performance has been extensively studied, with meta-analytic evidence supporting a positive association (Rauch et al., 2009). However, context matters significantly. In developing economies, women entrepreneurs often operate under constrained conditions characterized by limited resources, socio-cultural barriers, and institutional voids (Mozumdar et al., 2022).

Studies on women entrepreneurs suggest that innovativeness may not always yield positive outcomes due to small business sizes, involvement in traditional businesses, and limited access to financial resources (Fuentes-Fuentes et al., 2015). Conversely, proactiveness enables women entrepreneurs to identify and exploit opportunities ahead of competitors, while calculated risk-taking can lead to superior returns (Lumpkin & Dess, 2001).

Based on these arguments, we hypothesize:

H1: Innovativeness has a significant effect on business performance of women enterprises in Kano State, Nigeria.

H2: Proactiveness has a significant effect on business performance of women enterprises in Kano State, Nigeria.

H3: Risk-taking has a significant effect on business performance of women enterprises in Kano State, Nigeria.

2.2 Moderating Role of Coping Strategy

Coping strategies refer to the behaviors, thoughts, and actions employed to manage demanding situations (Lazarus & Folkman, 1984). In entrepreneurship, coping strategies—particularly pivoting (strategic reorientation) and perseverance (persistence with existing approaches)—enable firms to navigate crises and uncertainties (Morgan et al., 2020).

The effectiveness of entrepreneurial orientation may depend on how entrepreneurs cope with challenges. When facing adversity, entrepreneurs with strong coping mechanisms may better leverage their entrepreneurial orientation to achieve performance outcomes (Ahmed et al., 2022). Conversely, without effective coping strategies, even highly entrepreneurial firms may struggle during crises.

Coping strategies can amplify the positive effects of proactiveness and risk-taking by providing mechanisms to manage associated uncertainties. However, they may dampen the effects of innovativeness if coping mechanisms prioritize stability over novelty (Clauss et al., 2021).

Thus:

H4: Coping strategy moderates the effect of innovativeness on business performance of women enterprises in Kano State, Nigeria.

H5: Coping strategy moderates the effect of proactiveness on business performance of women enterprises in Kano State, Nigeria.

H6: Coping strategy moderates the effect of risk-taking on business performance of women enterprises in Kano State, Nigeria.

2.3 Theoretical Framework

This study integrates Liberal Feminist Theory and Resource-Based View (RBV) theory. Liberal feminist theory provides lens for understanding gender-based constraints and opportunities in entrepreneurship (Fischer et al., 1993), while RBV explains how entrepreneurial orientation and coping strategies serve as valuable, rare, and inimitable resources that generate competitive advantage (Barney, 1991).

Figure 1: Conceptual Framework

Entrepreneurial Orientation Business Performance

- Innovativeness → • Profitability
- Proactiveness → • Growth
- Risk-taking → • Market Share
- Customer Satisfaction

↓

Coping Strategy

(Moderator)

3. METHODOLOGY

3.1 Research Design and Sample

A cross-sectional survey design was employed. The target population comprised 438 registered women-owned enterprises across three Local Government Areas in Kano State: Rano (136), Wudil (156), and Bichi (146). Using Yamane's formula, a sample of 209 enterprises was determined. Multi-stage sampling technique was employed: purposive selection of LGAs followed by proportionate stratified random sampling.

3.2 Data Collection

Primary data were collected using structured questionnaires administered to women owner-managers. The instrument employed a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). Entrepreneurial orientation was measured using adapted scales from Covin and Slevin (1989) and Hughes and Morgan (2007). Coping strategy was measured using items adapted from Morgan et al. (2020). Business performance was measured using both financial and non-financial indicators adapted from Gorgievski et al. (2005).

3.3 Data Analysis

Partial Least Squares Structural Equation Modeling (PLS-SEM) using SmartPLS 3.0 was employed for hypothesis testing. This technique is appropriate for complex models with multiple constructs and indicators (Hair et al., 2017). A two-step approach was adopted: assessment of measurement model followed by structural model evaluation.

4. RESULTS

4.1 Response Rate and Sample Characteristics

Of 209 questionnaires distributed, 187 were returned (89.5% response rate). After data cleaning, 178 usable responses (85.2%) were retained for analysis. Table 1 presents demographic characteristics.

Table 1: Demographic Profile of Respondents

Characteristic	Category	Frequency	Percent

Age	20-30 years	67	37.6

	31-40 years	104	62.3

	50 and above	7	3.9

Marital Status	Married	111	62.4

	Single	67	37.6

4.2 Measurement Model Assessment

The measurement model was assessed for reliability and validity. Table 2 shows that all constructs achieved composite reliability (> 0.70) and average variance extracted (> 0.50), indicating adequate convergent validity (Fornell & Larcker, 1981).

Table 2: Reliability and Validity

Construct	Cronbach's Alpha	Composite Reliability	AVE

Business Performance	0.815	0.869	0.572

Coping Strategy	0.712	0.833	0.626

Innovativeness	0.856	0.911	0.774

Proactiveness	0.856	0.912	0.777

Risk-Taking	0.893	0.933	0.824

Discriminant validity was established using Fornell-Larcker criterion (square roots of AVE exceeded correlations between constructs) and HTMT ratios (all < 0.85).

4.3 Structural Model and Hypothesis Testing

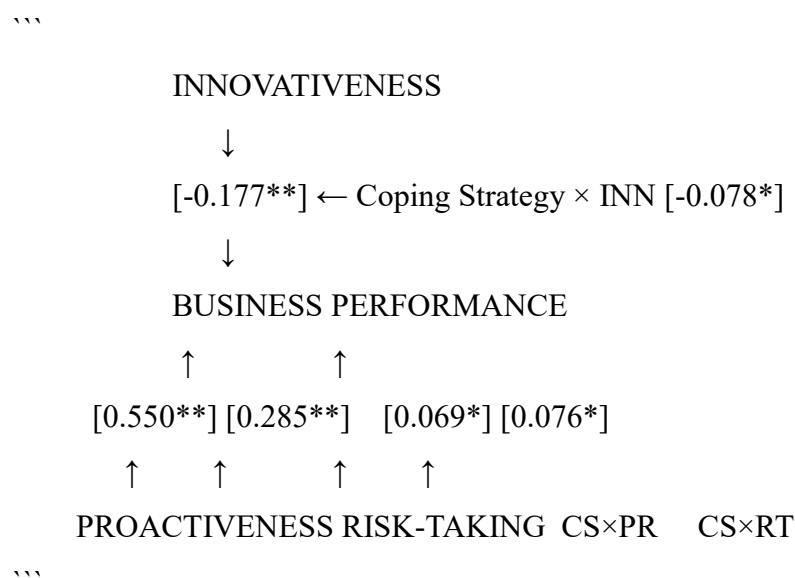
Table 3 presents the results of hypothesis testing using bootstrapping with 5000 resamples.

Table 3: Hypothesis Testing Results

Hypothesis	Path	β	T-Statistics	P-Value	Decision
H1	INN $\rightarrow$ PERF	-0.177	3.502	0.001	Supported
H2	PR $\rightarrow$ PERF	0.550	11.035	0.000	Supported
H3	RT $\rightarrow$ PERF	0.285	5.094	0.000	Supported
H4	CS $\times$ INN $\rightarrow$ PERF	-0.078	2.248	0.025	Supported
H5	CS $\times$ PR $\rightarrow$ PERF	0.069	2.032	0.043	Supported
H6	CS $\times$ RT $\rightarrow$ PERF	0.076	2.158	0.031	Supported

Note: INN = Innovativeness; PR = Proactiveness; RT = Risk-Taking; CS = Coping Strategy; PERF = Business Performance

Figure 2: Structural Model Results



*Note: **p < 0.01; p < 0.05

4.4 Predictive Relevance and Effect Size

The model explained 62% ($R^2 = 0.618$) of variance in business performance, indicating moderate explanatory power (Chin, 1998). Stone-Geisser Q^2 value of 0.326 (> 0) confirmed predictive relevance. Effect sizes (f^2) ranged from weak (innovativeness = 0.020; risk-taking = 0.046) to moderate (proactiveness = 0.262).

Figure 3: Moderation Effects

CS × INN Moderation CS × PR Moderation CS × RT Moderation

Negative amplification Positive amplification Positive amplification

Low coping: stronger INN-negative effect High coping: stronger PR-positive effect High coping: stronger RT-positive effect

High coping: weaker INN-negative effect

5. DISCUSSION

5.1 Direct Effects

The significant negative effect of innovativeness on business performance (H1) contradicts conventional wisdom but aligns with studies suggesting that innovation may not always yield positive outcomes in constrained contexts (Mozumdar et al., 2022). In rural Kano, innovative products may not align with local market preferences, and limited resources may hinder effective implementation of innovations. Women entrepreneurs face additional barriers including limited access to information, technology, and markets that could facilitate successful innovation adoption.

The strong positive effect of proactiveness (H2) confirms that women entrepreneurs who actively seek opportunities, anticipate market changes, and initiate actions achieve superior performance. This finding aligns with Lee and Trimi (2021) and underscores the importance of being forward-looking in navigating Kano's dynamic business environment. Proactive entrepreneurs can identify niches, respond quickly to customer needs, and stay ahead of competitors.

The positive effect of risk-taking (H3) supports Knight's (1921) risk-bearing theory and findings by Henschel and Lantzsch (2022). Calculated risk-taking enables women entrepreneurs to pursue growth opportunities, enter new markets, and adopt innovative practices. However, the relatively modest effect size suggests that risk-taking must be balanced with careful assessment and management.

5.2 Moderating Effects

Coping strategy negatively moderates the innovativeness-performance relationship (H4), suggesting that reliance on coping mechanisms may dampen innovation benefits. When facing

challenges, entrepreneurs prioritizing survival-oriented coping may divert resources from innovation initiatives (Kuckertz & Brändle, 2021). This finding highlights the need for balanced approaches that maintain innovation focus while managing adversity.

Conversely, coping strategy positively moderates proactiveness-performance (H5) and risk-taking-performance relationships (H6). Effective coping mechanisms enable proactive entrepreneurs to better implement their initiatives and manage associated challenges. Similarly, entrepreneurs employing strong coping strategies can better navigate the uncertainties inherent in risk-taking, enhancing its performance benefits (Ahmed et al., 2022).

5.3 Theoretical Contributions

This study makes several theoretical contributions. First, it extends EO research to a understudied context—rural women entrepreneurs in a developing economy—demonstrating that EO-performance relationships are context-dependent. Second, it introduces coping strategy as a contingent factor, responding to calls for examining EO in configurations with other strategic variables (Covin et al., 2020). Third, it integrates liberal feminist theory with RBV, providing nuanced understanding of how gender-specific constraints interact with entrepreneurial resources.

5.4 Practical Implications

For women entrepreneurs, the findings suggest:

- Customize innovation strategies to local market conditions
- Cultivate proactive mindsets and behaviors
- Embrace calculated risk-taking with proper assessment
- Develop balanced coping strategies that complement rather than hinder entrepreneurial initiatives
- Build networks and seek mentorship for capability development

For policymakers and support organizations:

- Design training programs enhancing proactiveness and risk management skills
- Provide platforms for market information access and networking
- Develop gender-sensitive financial products supporting innovation and growth

- Create enabling environment reducing socio-cultural barriers

6. CONCLUSION

This study examined the moderating role of coping strategy on entrepreneurial orientation-business performance relationship among women-owned SMEs in Kano State, Nigeria. Findings reveal that proactiveness and risk-taking positively influence performance, while innovativeness shows negative effects. Coping strategy significantly moderates these relationships, amplifying positive effects of proactiveness and risk-taking while dampening innovativeness effects.

The study contributes to understanding women entrepreneurship in constrained contexts and offers actionable insights for enhancing business performance. Future research should employ longitudinal designs, incorporate objective performance measures, and examine additional moderating variables such as access to finance and social capital.

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EFFECT OF ATTITUDE TOWARD ENTREPRENEURSHIP AND NEED FOR
ACHIEVEMENT ON ENTREPRENEURIAL INTENTION

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Abstract

The paper examined the effect of attitude toward entrepreneurship and need for achievement on entrepreneurial intention among undergraduate students of Business Administration and Entrepreneurship students in Bayero University Kano. A cross-sectional survey design was adopted, and data were collected from a proportionate sample of 168 400 level students from Business Administration and Entrepreneurship department selected through stratified sampling technique. Primary data were collected through self-administered questionnaire. The data collected were analysed using Statistical Package for Social Sciences (SPSS) version 23 and Partial Least Squares Structural Equation Modeling (PLS-SEM) version 4.0. The study found significant positive relationship between attitude toward entrepreneurship and need for achievement on entrepreneurial intention. It is concluded that both a positive attitude toward entrepreneurship and a strong need for achievement significantly increase the likelihood of individuals' intention to become entrepreneurs. These factors create a mindset that encourages individuals to take initiative, seek opportunities, and face the challenges associated with starting and running a business. Therefore, the study recommends that educational and developmental programs should focus on enhancing individuals' positive attitudes toward entrepreneurship and fostering a strong need for achievement to effectively boost entrepreneurial intentions.

Keywords: Attitude toward Entrepreneurship, Need for Achievement, Entrepreneurial Intention.

1. Introduction

Entrepreneurship plays an important role in fostering economic development, innovation, and job creation in the societies. Therefore, Nigeria is not an exception from benefiting on the role of entrepreneurship particularly in terms of job creation, innovation as well as general

economic growth and development (Omotayo, Adewole, Kadiri & Attah, 2024; Juliana, Hui, Clement, Solomon & Elvis, 2021). As such, different countries are now benefiting from the role of entrepreneurship which led to the emergence of many schemes in their tertiary institutions including; Youth Business China (YBC) in China, Accelerated and Share Growth Initiative for South Africa (ASGISA) in South Africa, and the Tertiary Institution Entrepreneurship Scheme (TIES) in Nigeria.

In addition, the federal government of Nigeria in 2012, through the National Universities Commission (NUC) mandated every university in Nigeria to establish an Entrepreneurship Development Centre (EDC) and to offer courses in entrepreneurship to all students using a curriculum developed by the NUC (Chukwuma-Nwuba, 2019; Nana, 2018). This aimed to empower the students, create employment, and develop business mindset during school days and after graduation. Even with these efforts, there are still low level of entrepreneurial intention particularly among the student at tertiary institution.

According to Takawira (2020) entrepreneurial intention is the self-acknowledge conviction by a person that intends to establish a new business enterprise and intentionally plan to do so at some point in the future. However, the entrepreneurial intention level of Nigeria account for 20% compared to 33%, 21%, 29%, 26% and 25 entrepreneurial intention levels in South Africa, Ghana, Morocco, Egypt and Gobon respectively (Szerb, Acs, Márkus, Rappai, Vörös & Vörös, 2018). Therefore, entrepreneurial intention is positively related to the level of economic development of any country (Shirokova, Osiyevskyy, Bogatyreva, Edelman, & Manolova, 2022). Similarly, the Nigerian government established Entrepreneurship Development Centres across all universities in the country in 2012 where every student, regardless of their degree of study, is trained in the area on different aspect of entrepreneurship during their school days (Asukwo, Moses, Ibanga & Yusuf, 2020). In addition, Youth Entrepreneurship Support (YES) and Tertiary Institution Entrepreneurship Scheme (TIES) were established in 2022 in order to promote entrepreneurship among Nigerian graduates (Omeje, Jideofor & Ugwu). This evidence of low level of entrepreneurial intention in Nigeria might be attributed to the low level of attitude toward entrepreneurship and need for achievement (Osuagwu, 2023; Mahmoud & Garba, 2019). Therefore, increase efforts to stimulate a favorable attitude towards entrepreneurship and need for achievement among students of tertiary institutions in Nigeria is the primary interest of this study.

Objective of the Study

This study aims at examining the effect of attitude toward entrepreneurship and need for achievement on entrepreneurial intention among undergraduate students of Business Administration and Entrepreneurship students in Bayero University Kano. The study is further guided by the following specific objectives:

4. To evaluate the effect of attitude toward entrepreneurship on entrepreneurial intention among undergraduate students of Business Administration and entrepreneurship students in Bayero University Kano.
5. To evaluate effect of need for achievement on entrepreneurial intention among undergraduate students of Business Administration and entrepreneurship students in Bayero University Kano.

The remaining part of this paper is structure as follows; section 2; Literature Review and Theoretical Framework, Section 3; Methodology, Section 4; results and discussion, Section 5; conclusion and recommendation.

2. Literature Review and Theoretical Framework

Entrepreneurial Intention

Intention is regarded as the best predictor of behaviour (Oluwafunmilayo, Moses, Olokundun & Grace, 2018). In addition, intention can predict the new business creation process (Krueger, Reilly, & Carsrud, 2000). Therefore, intention represents the individual motivation to choose among alternative courses of action (Astuti & Martdianty, 2012). According to Gerba (2012) entrepreneurship intention is a state of mind that leads a person to favourably select a self-business rather than a paid job. In previous studies, entrepreneurship intention appeared as a reference to possess a business venture or become self-employed by establishing a new business or buying an existing one (Thompson, 2009). Moreover, actions are unlikely in the absence of intention (Owoseni & Akambi, 2010). Therefore, entrepreneurship intention in this study is defined as the attitude, behaviour and action of students towards becoming entrepreneurs.

Attitude toward Entrepreneurship and Entrepreneurial Intention

According to Ajzen's (1991) theory, people develop positive attitudes toward behaviors they think will result in desired outcomes and negative attitudes toward behaviors they think would

result in unpleasant outcomes. Astuti and Martdianty (2012) attitude refer to the positive or negative valuation of an individual towards a specific behaviour which is influenced by the total behavioural beliefs. It is also the magnitude to which an individual is enticed to a particular behaviour (Bakotic & Kruzic, 2010). Attitude is formed by the evaluative implications of the relevant information or beliefs that are kept in the memory (Owoseni & Akambi, 2010). Similarly, entrepreneurial attitudes refer to the degree of one's positive valuation to develop a new business (Liñán, Nabi & Krueger, 2013). In this study therefore, attitude toward entrepreneurship is defined as the degree to which an individual student holds a positive or negative perception about entrepreneurship.

Previous empirical studies confirmed that entrepreneurship attitude have a significant positive relationship with entrepreneurship intention. For instance, Taneja, Kiran and Bose (2024) affirmed that there is strong influence of entrepreneurial attitude on entrepreneurial intention. Rodrigues, Silva, and Franco (2023) confirmed a significant relationship between attitude and intention. Furthermore, Gujrati, Lawan, Jain and Tyagi (2019) established that attitude have significant relationship with entrepreneurial intention. In view of these findings, the study hypothesized that;

H₀₁: Attitude toward entrepreneurship has no significant effect on entrepreneurial intention among undergraduate students of Business Administration and entrepreneurship students in Bayero University Kano.

Need for Achievement and Entrepreneurial Intention

Need for achievement could therefore be described as the motive to accomplish something in a better way (McClelland, 1965; Hansemark 1998). It has been found that need for achievement might be higher in entrepreneurs than non-entrepreneurs (Robinson, Stimpson, Huefner & Hun, 1991). In other word, individuals who have a need for high achievement will be more likely to become an entrepreneur (Asmara, Tri Djatmika & Indrawati, 2016). Therefore, Aprilia and Ardana (2021) confirm that need for achievement provide positive energy to act or behave confidently in the situation at hand. Hence, the present study defined need for achievement as *the desire for students to obtain excellent results by setting high standards and striving to accomplish them.*

Empirical studies confirmed that need for achievement have a significant positive relationship with entrepreneurship intention. Soomro and Shah (2022) demonstrate a significant positive effect between need for achievement and entrepreneurial intention among Pakistan's commerce students. In addition, Ladokun and Adebusey (2022) *showed that need for achievement has positive and significant correlation with student's entrepreneurial intention. Similarly, Aprilia and Ardana (2021) indicated that need for achievement have a positive and significant effect on entrepreneurial intentions. Moreover, Ekawarna, Anra, Ayun, Romios and Tarnak (2020) found a positive effect between need for achievement and student entrepreneurial intentions. In this regard, the study hypothesized that;*

Ho2: Need for achievement has no significant effect on entrepreneurial intention among undergraduate students of Business Administration and entrepreneurship students in Bayero University Kano.

Theoretical Framework

The theoretical framework underpinning this study is Theory of Planned Behaviour (TPB) and Achievement Motivation Theory (AMT).

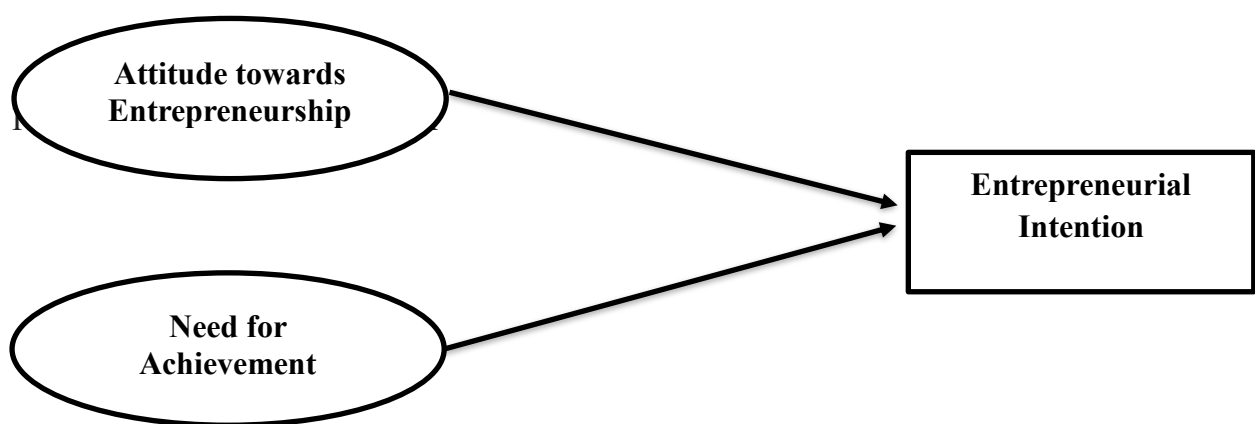
Theory of Planned Behaviour (TPB)

The TPB was developed by Ajzen (1991). The TPB assumes that individuals act rationally, according to their attitudes, subjective norms, and perceived behavioural control (Ajzen, 1991). According to Linan and Santos (2007) and Ajzen (1991) “attitude toward a behaviour” which refers to perception and evaluation on one’s own performance on acting the intended behaviour, the second is “subjective norm” referring to the perceived influence from external parties (family, friends and peers) on individuals on intended behaviour, and the third is “perceived behavioural control” which refers to personal perception on the feasibility (easy or hard) evaluation on performing the intended behaviour. Therefore, TPB shows that individual intention is the best way to predict behaviour; hence entrepreneurial intentions are the best way for understanding the process of entrepreneurship (Krueger, 2004). In this regard, this study contended that individual with high level of attitude toward entrepreneurship can develop more intention of starting a business.

Theory of Achievement Motivation (TAM)

The TAM was first propounded by McClelland (1971). The theory assumed that people have three motives for accomplishing things: the need for achievement, need for affiliation, and need for power. But in this study only one type of the Need Theory, namely the need for achievement

is viable. According to McClellands (1971) the need for achievement is the drive to excel, to achieve a relationship with a standard, trying to succeed. They found from the results of their research on the needs of achievement, that high achievers distinguish individuals (students) from others with their desire to do their best (McClellands, 1971). Therefore, its concluded that theory of achievement motivation is the best theory that explain the relationship between need for achievement and students' entrepreneurial intention. This is confirmed from the study of McClellands (1971) and Asmara et al. (2016) which argued that individuals particularly students who have high need for achievement will be more likely to become an entrepreneur after their graduation.



6. Methodology

The study employed cross sectional survey design because it easily aids in determining interrelationships among latent constructs (Sekaran & Bougie, 2013). This is because data of the study was collected from undergraduate students of Business Administration and entrepreneurship students of Bayero University Kano. Similarly, the population of this study comprises 197 Business Administration and 34 Entrepreneurship students of 400L during 2024/2025 academic session making the total 231. The study used Krejcie and Morgan (1970) table in obtaining the sample of 148. In order to take care of incorrect filling of the questionnaires, the study added 30% of the computed sample as suggested by Israel (2013). Specifically, 30% of 148 is 44 adding with 148 computed sample making the total of 192 respondents used in this study.

However, stratified sampling was used in selecting the sample. In a stratified random sampling, a population is divided into sub-groups, or strata, and random samples are taken in proportion to the population from each of the strata. The participants in each of the stratum formed have similar attributes and characteristics. Thus, the determined sample size of the study (i.e., 168 400 Level students of the two mentioned department) is divided by the total population of 400

Level students of the mentioned university (i.e., 231) and subsequently, the fraction is multiplied with each of the 400L students from all the department to arrive at the proportionate sampling.

Table 1: *Proportionate Stratified Sampling Frame*

S/N	Department	Number of 400L Students	Proportionate Sampling
1	Business Administration	197	143
3	Entrepreneurship	34	25
Total		231	168

Measures

The measures of variables in this study was adopted and adapted previous studies and measured with 5-point liker scale (1 = “strongly disagree”, 2 = “disagree”, 3 = “neutral”, 4 = “agree”, and 5 = “strongly agree”). Specifically, entrepreneurial intention was measured by six (6) items developed by Linan and Chen (2009). Also, attitude towards entrepreneurship were measured by five (5) items adopted from Linan and Chen (2009). Then, need for achievement was measured by seven (7) items adopted from Cassidy and Lynn (1989).

Techniques of Data Analysis

The study employed the SmartPLS 4 in order to compute the two-basic model of PLS path modeling (i.e. measurement model and structural model) (Hair et al., 2022). SPSS version 23 was used for preliminary data screening and descriptive statistics before conducting the structural analysis using Smartpls 4. The PLS path modeling is considered the most suitable technique in this study for several reasons: First, PLS path modeling has the advantage of estimating the relationships between indicators and their corresponding latent constructs (measurement model) and the relationships between constructs (structural model) simultaneously (Duarte & Raposo, 2010; Chin, Marcolin, & Newsted, 2003). Second, PLS path modelling is considered perfect because the study aims to predict entrepreneurial intention, which is the endogenous latent variable (Ringle, Sarstedt, & Straub, 2012; Fornell & Bookstein, 1982). Third, PLS path modelling is more robust in handling non-normal data because it bootstraps the study sample (Henseler, Ringle, & Sinkovics, 2009).

7. Result and Discussion

Measurement Model Results

The measurement model was assessed based on items reliabilities, internal consistency reliabilities, convergent validity and discriminant validity for all the variables of the study. Specifically, the individual item reliability was ascertained by examining the outer loadings of each variable. According to Hair et al. (2022), an outer loading between .40 and .70 should be deleted only when the deletion would lead to an increase in average variance extracted (AVE) as well as the composite reliability (CR). For this study therefore, all the outer loadings are greater than 0.4 except for ATE5 and NFA6 which was deleted as suggested by Hair et al. (2022). To establish indicator reliability, CR value should be greater than 0.7 (Hair et al., 2022). The result for CR of all variable are achieved since the CR value are greater than the threshold of 0.7. moreover, all the variables of the study achieved convergent validity since the AVE value are all greater than 0.50 (Hair et al., 2022). See figure 2 and table 2 below.

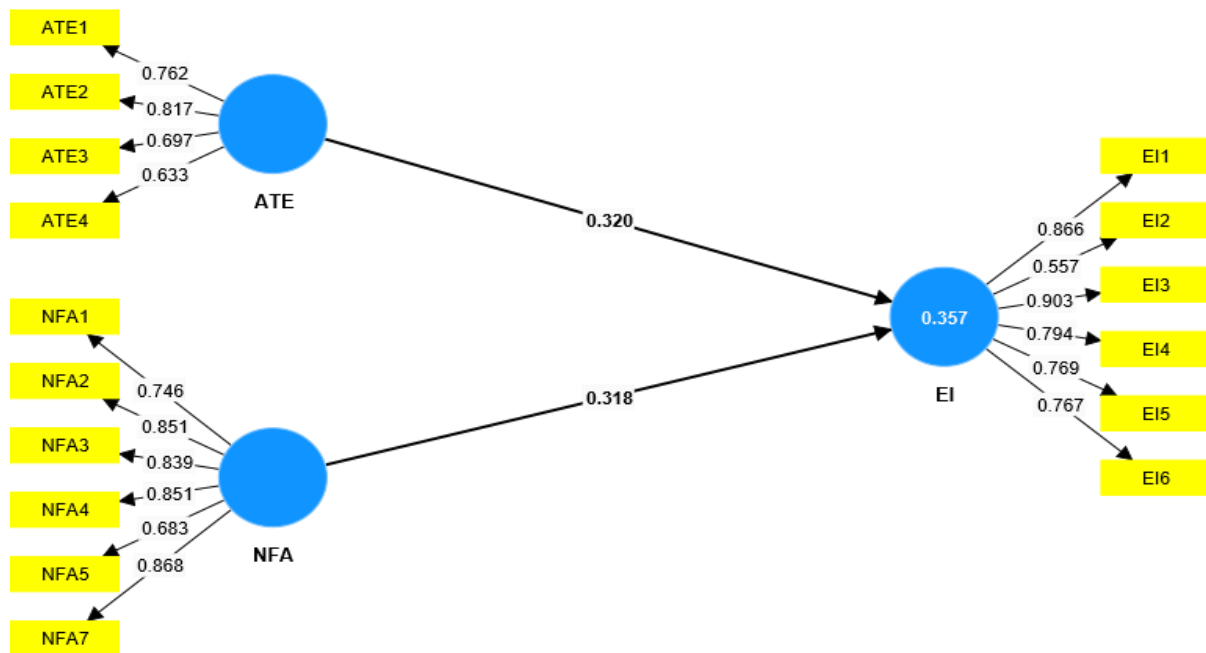


Figure 2: Measurement Model

Table 2: Reliability and Convergent Validity

Variables	Indicators	Loadings	CR	AVE
Entrepreneurial Intention	EI1	0.866	0.904	0.614
	EI2	0.557		
	EI3	0.903		
	EI4	0.794		
	EI5	0.769		
	EI6	0.767		

Attitude toward Entrepreneurship	ATE1	0.762	0.819	0.534
	ATE2	0.817		
	ATE3	0.697		
	ATE4	0.633		
Need for Achievement	NFA1	0.746	0.919	0.655
	NFA2	0.851		
	NFA3	0.839		
	NFA4	0.851		
	NFA5	0.683		
	NFA7	0.868		

Note: CR = Composite Reliability, AVE = Average Variance Extracted

Discriminant Validity

Discriminant validity is simply the degree to which a construct differs from other constructs (Duarte & Raposo, 2010). As a result, the discriminant validity was evaluated using the Heterotrait-Monotrait Ratio (HTMT) proposed by Henseler, Ringle and Sarstedt (2015). They also recommended that the HTMT value be less than 0.85. Table 2 showed that all of the reflective constructs met the HTMT criteria.

Table 3: *Discriminant Validity (HTMT)*

Variables	ATE	EI	NFA
ATE			
EI	0.693		
NFA	0.654	0.617	

4.2 Structural Model Results

The structural model of this study was assessed using bootstrapping procedure with 5,000 bootstrap samples to assess the significance of the path coefficients. The result is therefore presented in figure 3 and table 4 below.

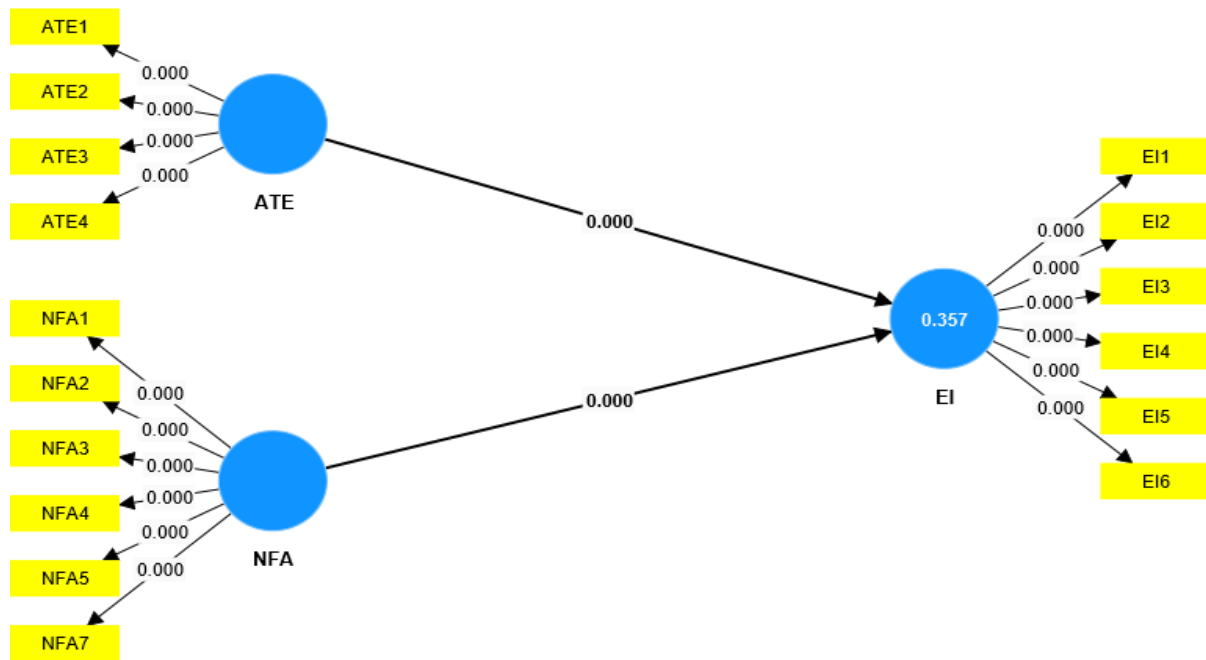


Figure 3: Structural Model

The structural model assessment also examined the coefficient of determination (R^2) for the endogenous construct. The R^2 value of entrepreneurial intention was 0.35, indicating that attitude towards entrepreneurship and need for achievement jointly explain 35% of the variance in entrepreneurial intention among the students. According to Hair et al. (2022), this represents a moderate level of explanatory power in behavioural research.

Table 4: *Path Coefficient*

Hypotheses	R/Ship	Beta	Standard		P values	Decision
			deviation	T statistics		
Ho1	ATE -> EI	0.320	0.085	3.748	0.000	Rejected
Ho2	NFA -> EI	0.318	0.084	3.776	0.000	Rejected

Table indicated that a positive relationship exists between attitude toward entrepreneurship on entrepreneurial intention among undergraduate students of Business Administration and entrepreneurship students in Bayero University Kano. This was confirmed from the beta coefficient of 0.320 with p value of 0.000 which is significant at 5%. This provide the basis for rejecting Ho1 which state that attitude toward entrepreneurship has no significant effect on entrepreneurial intention among undergraduate students of Business Administration and entrepreneurship students in Bayero University Kano. In addition, the finding is in line with the findings of previous studies which established significant positive relationship between attitude toward entrepreneurship and entrepreneurial intention (Taneja, Kiran & Bose, 2024;

Rodrigues, Silva, and Franco, 2023; Gujrati, Lawan, Jain & Tyagi, 2019). Moreover, the finding is aligned with assumption of Theory of Planned Behaviour (Ajzen, 1991).

Similarly, the result in table 4 revealed that a positive and significant relationship exists between need for achievement and entrepreneurial intention among undergraduate students of Business Administration and entrepreneurship students in Bayero University Kano as confirmed from the beta coefficient of 0.318 with p value of 0.000 which is significant at 5%. This justified the reason for rejecting the Ho2 which state that need for achievement has no significant effect on entrepreneurial intention among undergraduate students of Business Administration and entrepreneurship students in Bayero University Kano. More so, the findings corroborate with the findings of previous studies which found significant relationship between need for achievement and entrepreneurial intention (Soomro & Shah, 2022; Ladokun & Adebuseye, 2022; Aprilia & Ardana, 2021; Ekawarna, Anra, Ayun, Romios & Tarnak, 2020). Likewise, these empirical findings provide support for theoretical explanations Of Achievement Motivation Theory (McClellands, 1971). The findings highlight the importance of psychological and attitudinal factors in shaping entrepreneurial intentions among Nigerian university students. In the Nigerian context, where graduate unemployment remains high, positive attitudes toward entrepreneurship may encourage students to view self-employment as a viable alternative to scarce wage employment opportunities. Similarly, students with a strong need for achievement may perceive entrepreneurship as a platform for personal accomplishment and financial independence. These findings therefore reinforce the importance of strengthening entrepreneurship education programmes in Nigerian universities to cultivate both favourable attitudes toward entrepreneurship and a strong achievement motivation among students.

5. Conclusion and Recommendations

The study examines the effect of attitude toward entrepreneurship and need for achievement on entrepreneurial intention among undergraduate students of Business Administration and entrepreneurship students in Bayero University Kano. The study concludes that a positive attitude toward entrepreneurship and a strong need for achievement significantly increase the likelihood of individuals intention to become entrepreneurs. These factors create a mindset that encourages individuals to take initiative, seek opportunities, and face the challenges associated with starting and running a business. Therefore, it is recommended that educational and developmental programs should focus on enhancing individuals' positive attitudes toward

entrepreneurship and fostering a strong need for achievement to effectively boost entrepreneurial intentions especially among Business Administration and Entrepreneurship students in Bayero University Kano.

Limitations and Suggestions for Future Study

This study has several limitations that should be addressed in future research. To begin, one of the limitations of this study is in the area of design, which employs a cross-sectional design that captures only responses of data collected over a single period using 400L students of Business Administration and Entrepreneurship Department, Bayero University Kano. As a result, future research may address this constraint by conducting longitudinal studies that collect data over two or more time periods. Second, the study examines the direct effect of attitude toward entrepreneurship and need for achievement on entrepreneurial intention which result 35% variance. Therefore, future studies are needed to incorporate other variables such as subjective norms and perceived behavioural control. Moreover, future studies can look at the indirect or interaction effect of need for achievement between the dimension of theory of planned behaviour (TPB) (i.e., attitude toward entrepreneurship, subjective norms and perceived behavioural control) on entrepreneurial intention.

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EFFECT OF FINANCIAL LITERACY ON THE PERFORMANCE OF WOMEN
ENTREPRENEURS IN KADUNA STATE

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Abstract:

Women-owned small and medium enterprises (SMEs) continue to play a significant role in economic development; however, their performance in Nigeria is constrained by persistent high failure rates and declining contributions to gross domestic product (GDP). Against this backdrop, this study examines the effect of financial literacy on the performance of women entrepreneurs in Kaduna State. Adopting a survey cross-sectional research design, data were collected using a structured questionnaire administered to 7,351 women entrepreneurs selected through a stratified random sampling technique across the three senatorial zones of the state. The data were analysed using Structural Equation Modelling (SEM) to assess the relationships between financial literacy dimensions and business performance. The findings reveal that financial knowledge and financial attitude significantly and positively influence the performance of women entrepreneurs. Based on these results, the study recommends that government agencies, policymakers, and business development institutions should implement targeted financial education initiatives aimed at strengthening women's financial knowledge and fostering proactive financial attitudes. Such interventions are important for translating financial literacy into sustained enterprise growth, improved performance, and enhanced economic contributions among women-owned businesses.

Keywords: Women entrepreneurs performance financial knowledge financial attitude resource based view.

1. INTRODUCTION

Entrepreneurship is widely recognized as a critical driver of economic growth and development across both developed and developing economies, particularly within today's dynamic and competitive global business environment (Beheshti, Amoozad & Rocha-Lona, 2024). Its growing importance is linked to economic expansion and its contribution toward achieving the Sustainable Development Goals (SDGs) (Shabbir, 2023). Currently, within the entrepreneurial landscape, small and medium enterprises (SMEs) occupy a central position due to their significant contributions to job creation, poverty reduction, and inclusive growth (Makanyeza,

Mabenge, & Ngorora-Madzimure, 2023). In Nigeria, MSMEs contributed 46.32 percent to GDP, accounted for 6.21 percent of exports, 96.9 percent of businesses and 87.9 percent of employment (NBS/SMEDAN 2021).

Globally, women-owned businesses represent an important yet underexplored subfield of entrepreneurship (Global entrepreneurship monitor, 2024). In Nigeria, women represent 49 percent of the population and own approximately 32 percent of SMEs, placing the country among those with relatively high rates of women entrepreneurship globally (PWC, 2024). Their contributions to employment generation, household income, and poverty alleviation are well documented (SMEDAN, 2021). Despite this, the performance of women entrepreneurs in Nigeria remains meagre and significantly below expectation, even though they are increasingly recognized as key stakeholders in the entrepreneurial landscape (Ahmed, Magaji, Ahmad, & Yunusa, 2024). Evidence highlights the persistent underperformance of women-owned enterprises compared to their male counterparts (SMEDAN, 2017; 2021). This underperformance is compounded by persistent financial exclusion (Peter, & Orser, 2024). The World Economic Forum (2023) estimates a 1.7 trillion dollar SME finance gap for women entrepreneurs globally, despite them owning 32 percent of SMEs. This exclusion is closely tied to low financial literacy, which constrains women's ability to access and utilize financial services effectively (Choudhary, & Jain, 2023).

Financial literacy is the capacity to comprehend, make good use of, and manage financial resources (OECD,2020). Scholars have approached the concept from diverse perspectives, with the Organisation for Economic Co-operation and Development (OECD, 2014) offering a comprehensive framework describing it as the knowledge and understanding of financial concepts and risks, coupled with the skills, motivation, and confidence to apply them in decision-making. The OECD specifies three core dimensions: financial knowledge, financial behavior, and financial attitude (OECD, 2013). Financial knowledge represents a core dimension, defined as the objective understanding of fundamental financial principles such as the time value of money, compound interest, inflation, and risk diversification that are essential for making informed financial decisions. Financial attitude refers to an individual's mindset, opinions, and judgments about financial matters, influencing their financial management decisions (Yuliarto, Inayah, & Sugiyarti, 2024). It reflects personal inclinations toward financial practices, such as budgeting, saving, borrowing, and investing (Yuliarto, Inayah, & Sugiyarti, 2024).

Recent studies confirm that inadequate financial capability affects women-owned SMEs from scaling, innovating, and competing effectively in the marketplace (Rink, Walle, & Klasen,

2021). In Nigeria, reports indicate low financial literacy levels among Nigerian women, with 51 percent of adult women formally unbanked partly due to limited financial education (CBN, 2023). This gap undermines national economic inclusion, stifles innovation, and reduces the performance of women-owned enterprises (Ogbari et al, 2024). Despite the critical role of financial literacy in shaping business outcomes, the link between financial knowledge and financial attitude in determining the performance of women entrepreneurs remains underexplored (Graña Álvarez et al., 2024), thereby highlighting the urgent need for empirical investigation. Hence, the current study focuses on examining the effect of financial knowledge and financial attitude on the performance of women entrepreneurs in Kaduna State, Nigeria.

2. STATEMENT OF PROBLEM

Within the corridors of academia, empirical studies have consistently shown low levels of performance and high failure rates among women SMEs in Nigeria, an issue of serious concern that calls for further investigation (Nwachukwu et.al, 2021). These high failure rates are evidenced by the diminishing role of women-owned enterprises in national economic output, often resulting in reduced production capacity, fewer job opportunities, and heightened layoffs (Asikhia & Naidoo, 2020). Empirical studies on the performance of women entrepreneurs in Nigeria have found that it remains considerably low and below expectations (Oludipe, 2019). Available evidence consistently indicates that female-owned enterprises underperform relative to their male counterparts (SMEDAN, 2017).

Although a lot of research has examined the performance of SMEs in Nigeria, relatively little attention has been devoted to women entrepreneurs, leaving women entrepreneurship as an open field of inquiry (Lawan, 2020). Tagha (2024) specifically emphasized the need for further research on women entrepreneurs in Nigeria, highlighting important gaps in existing knowledge. This is particularly relevant given that women entrepreneurs face a distinct set of barriers that often predispose them to business failure (Ukanwa, 2021).

Financial literacy has emerged as a critical determinant of business performance, yet it remains underdeveloped among women entrepreneurs (Hasan, Ashfaq, Parveen, & Gunardi, 2023). Financial literacy is generally understood as a combination of financial awareness, knowledge, skills, attitudes, and behaviours necessary to make sound financial decisions (OECD, 2023). However, many women entrepreneurs demonstrate significant gaps in financial knowledge, which limits their ability to apply essential concepts in budgeting, pricing, investment, and financial planning (Andriamahery & Qamruzzaman, 2022). Empirical findings on the link between financial knowledge and business performance remain inconclusive. While some studies report a positive relationship (Hidayati, Wahyulina, & Suryani, 2021; Razak & Amin,

2020), others have documented negative associations (John, Ogwuche, & Eze, 2023; Thomas & Veronica, 2024). These mixed results highlight the need for further investigation into how financial knowledge specifically influences the performance of women-owned SMEs.

Poor financial attitudes, such as excessive risk aversion or the absence of goal-oriented planning, further constrain strategic decision-making (Jumady, Alam, Hasbiyadi, Fajriah, & Anggraini, 2024). Studies reviewed on the relationship between financial attitude and business performance also reveal mixed outcomes. Some studies such as Eniola & Entebang, 2017; Rahim & Balan, 2020 report a positive association, indicating that a constructive financial mindset can enhance enterprise success. In contrast, other scholars have found a negative relationship, suggesting that certain financial attitudes may hinder rather than support performance (Akhtar & Liu, 2018; Drexler, Fischer & Schoar, 2014). These conflicting results underscore the complexity of the financial attitude and performance nexus and point to the need for further investigation.

According to the resource-based view (RBV), if firms within an industry possess identical resources, none can sustain a competitive advantage (Raduan, Jegak, Haslinda, & Alimin, 2009; Aminu, 2015). Applying this logic to entrepreneurship, a woman entrepreneur can achieve superior performance by having unique internal capabilities such as financial knowledge and financial attitude that are not easily replicated. In line with Barney's (1991, 1995) criteria, these dimensions can be valuable when they enable better financial decision making, efficient resource allocation, and improved access to funding

As a result of the inconsistencies in prior findings, this study will focus on the direct effects of financial knowledge and financial attitude on performance, in line with the call for more research on women entrepreneurs in specific contexts like Nigeria (Ojeleye and Mustapha (2024). The domain of the study needs to be addressed, as research on women entrepreneurs is still low and at an emergent stage (Ikupolati, Adeyeye, Oni, Medubi and Andow, 2024; Mohammed & Shanmugam, 2024). Very little is known about how financial literacy relationships affect performance, especially in emerging countries like Nigeria (Aliyu, Mahmoud & Dikko, 2025). According to SMEDAN (2017), even though the success and contributions of SMEs to the development of Nigeria are considerably low, the success and contributions of women are even meager in comparison with that of men. Therefore, in view of the aforementioned gaps, inconsistencies and suggestions for further studies, this study will explore the effect of financial knowledge and financial attitude on the performance of women SMEs in Kaduna State.

Research Hypotheses:

Based on the problem statement and research objectives, the following null hypotheses were formulated for testing:

H01: Financial attitude does not have a significant effect on the women SMEs performance in Kaduna State.

H02: Financial knowledge does not have a significant effect on the women SMEs performance in Kaduna State

3. METHODOLOGY

This study adopted a survey and cross-sectional research design. The cross-sectional design was employed to collect data from a sample of the target population at a single point in time to examine the relationships between financial knowledge, financial attitude, and the performance of women entrepreneurs. This design is appropriate for establishing associations between variables and is consistent with prior studies in entrepreneurial research (Ojeleye & Mustapha, 2024). The target population for this study consists of 7,351 women entrepreneurs registered under the Government Enterprise and Empowerment Programme (GEEP) 2.0 across Kaduna State, Nigeria. Kaduna State comprises 23 Local Government Areas (LGAs) grouped into three Senatorial Zones: Kaduna Central, Kaduna North, and Kaduna South. Given the population, the sample size was determined using Krejcie and Morgan's (1970) sample size determination table. For a population size (N) of 7,351, the recommended sample size (s) is 367. To account for potential non-response and ensure robustness, the sample size was rounded up to 385 respondents.

A stratified sampling technique was employed to ensure proportional representation across the three senatorial zones. The population in each zone was determined from the GEEP 2.0 register. The sample allocation per zone was calculated proportionally. Subsequently, a simple random sampling technique was used to select the specific women entrepreneurs from the list of GEEP beneficiaries within each zone.

Measures

The research instrument was a structured questionnaire adapted from validated scales in prior studies. All items were measured using a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Performance was measured using an 8-item scale adapted from Spillan and Parnell (2006), financial Knowledge construct was measured using a 5-item scale adapted from the OECD (2022) framework for assessing financial literacy while financial Attitude was measured using a 6-item scale adapted from the work of Yuliarto, Inayah, & Sugiyarti (2024).

4. DATA ANALYSES

Data was analysed utilising structural equation model (SEM) specifically Smart-PLs version 4.0.9.9 to assess the measurement and structural models.

Assessment of Measurement Model

The research evaluated item loading. Hair, Risher, Sarstedt and Ringle, (2019) advocated that loadings of 0.7 or above should be retained, while those below 0.7 should be discarded. Hulland (1999), recommended eliminating outer loadings below 0.5, citing the feasibility of attaining such outcomes in social science research. Hair, Hult, Ringle and Sarstedt (2021) indicated that loadings of > 0.5 should be retained only if such retention does not negatively impact the constructs' reliability and convergent validity. Based on the suggestions of Hulland (1999) and Hair et al. (2021), only the outer loading WSMEP8 was removed owing to its loading being below the 0.5 threshold. Furthermore, convergent validity was assessed by Average Variance Extracted (AVE). Hair, Hult, Ringle and Sarstedt (2022) argued that an AVE score of 0.5 or above indicates the convergent validity of a study's concepts. Table 1 indicates that the AVE values for all constructs in the research exceed 0.5. Consequently, convergent validity is confirmed. The construct reliability of this research was assessed using the composite reliability coefficient. Hair et al. (2022) suggested a threshold of 0.7 or above for the construct to be deemed credible and consistent. Table 1 unequivocally demonstrates that the composite reliability and Cronbach's alpha values exceed the required threshold of 0.7. Consequently, the constructs are considered reliable.

The coefficient of determination (R^2) shown in Figure 1 and Table 3 is 0.538 (53.8%), indicating that 53.8% of the variation in the endogenous variable is accounted for by the exogenous factors and the mediating variable. Cohen (1988) posited that the R^2 explanatory power might be deemed modest.

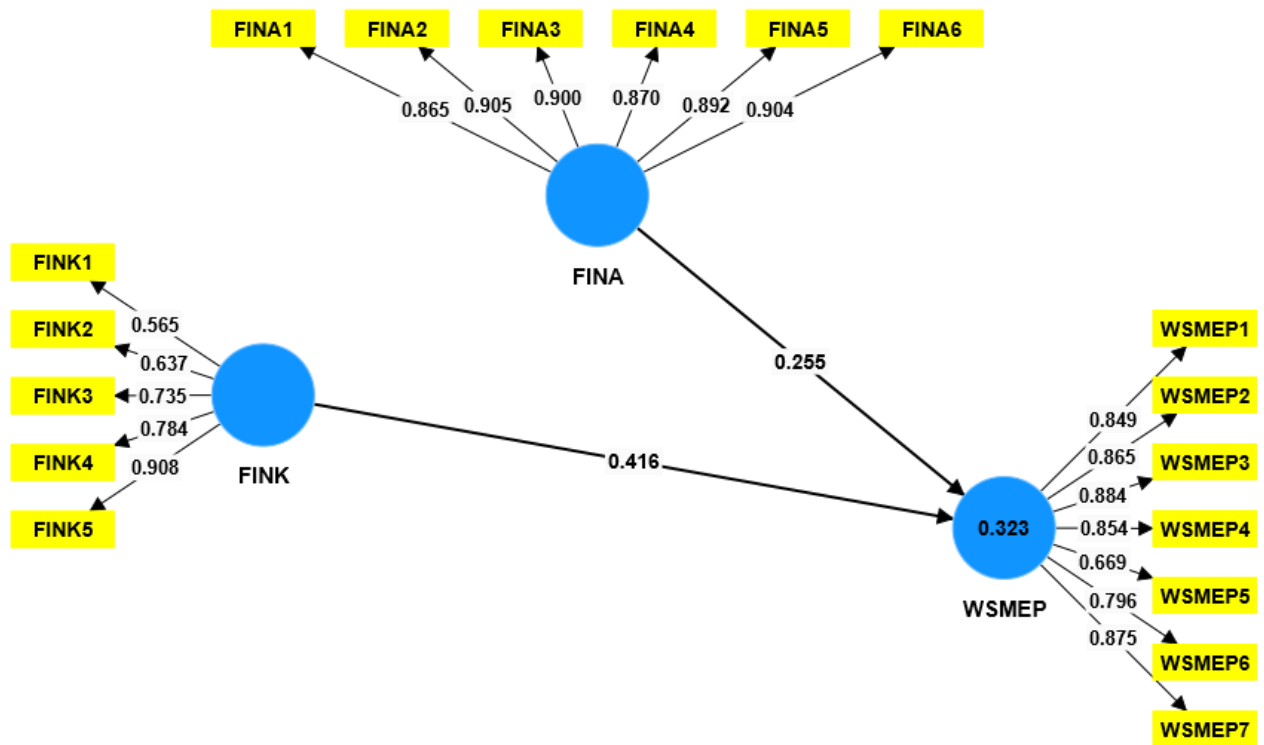


Figure 1: Measurement Model

Table 1: *Outer loadings, Reliability and Convergent Validity*

Constructs	Indicators	Outer loadings	Cronbach's alpha	Composite Reliability	AVE	Decision
Financial Attitude	FINA1	0.865	0.947	0.958	0.791	Accepted
	FINA2	0.905				
	FINA3	0.900				
	FINA4	0.870				
	FINA5	0.892				
	FINA6	0.904				
Financial Knowledge	FINK1	0.565	0.803	0.852	0.541	Accepted
	FINK2	0.637				
	FINK3	0.735				
	FINK4	0.784				
	FINK5	0.908				
Women SMEs Performance	WSMEP1	0.849	0.924	0.939	0.689	Accepted
	WSMEP2	0.865				

WSMEP3	0.884
WSMEP4	0.854
WSMEP5	0.669
WSMEP6	0.796
WSMEP7	0.875

Furthermore, discriminant validity was assessed using the Heterotrait-Monotrait (HTMT) correlation ratio. Given the conceptual differences across the constructs, the HTMT criterion of 0.85, as proposed by Kline (2011), was used instead of the HTMT threshold of 0.9 suggested by Henseler, Ringle and Sarstedt (2015) for conceptually comparable constructs. Table 2 below indicates that all results are below the 0.85 criterion. Consequently, discriminant validity is established.

Table 2: *Discriminant validity using HTMT correlations*

Constructs	FINA	FINK	WSMEP
FINA			
FINK	0.419		
WSMEP	0.437	0.498	

Evaluation of Structural Model

The structural model was used to evaluate the hypothesized relationship

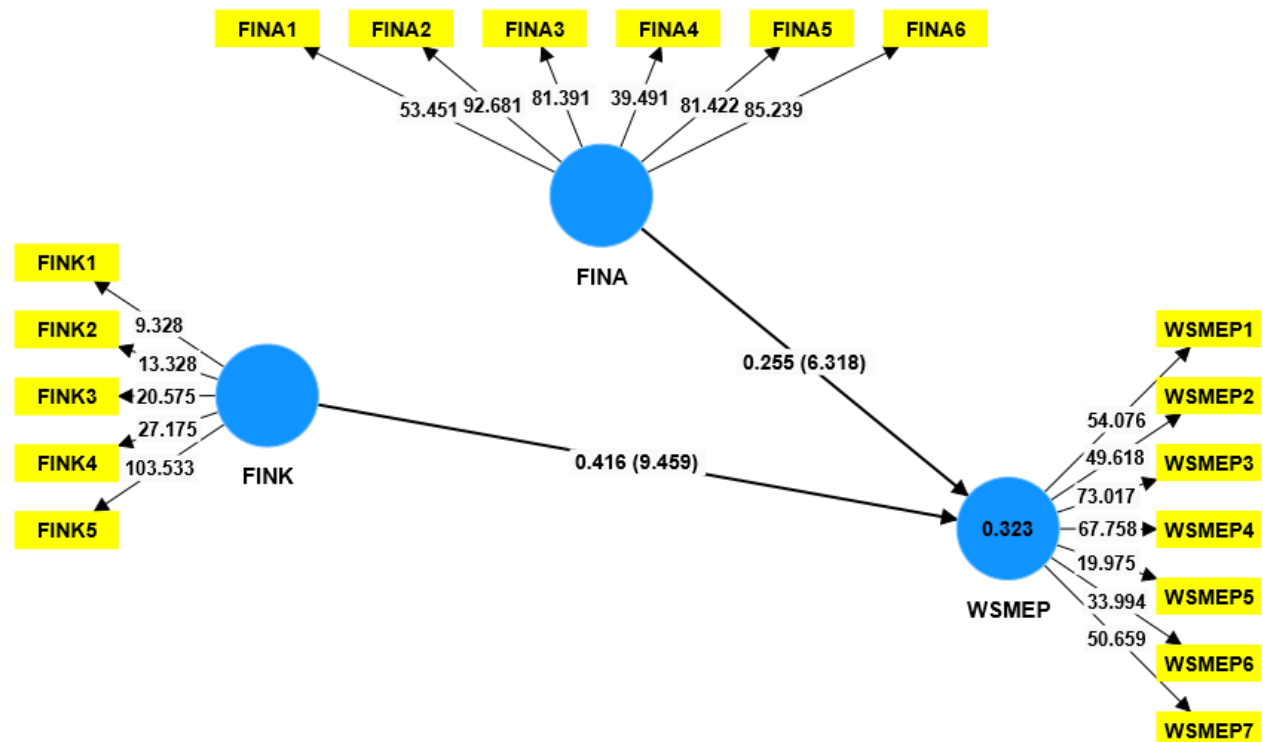


Figure 2: Structural Model

Table 3: *Hypothesized Relationship*

Hypotheses	Relationship	Beta	Standard Deviation (STDEV)	T Statistics	P Values	Decision
<i>H1</i>	FINA -> WSMEP	0.255	0.040	6.318	0.000	Accepted
<i>H2</i>	FINK -> WSMEP	0.416	0.044	9.459	0.000	Accepted
$Q^2 = 0.211$						

Table 3 presents the hypothesized relationships between financial attitude (FINA), financial knowledge (FINK), and women SMEs performance (WSMEP). The results indicate that financial attitude has a positive and statistically significant effect on women SMEs performance ($\beta = 0.255$, $t = 6.318$, $p < 0.001$). This implies that women entrepreneurs who demonstrate positive financial attitudes—such as prudent spending, savings orientation, and responsible financial decision-making—are more likely to achieve improved business performance. The relatively low standard deviation (0.040) further suggests stability and reliability in the estimated effect. However, despite the statistical significance, the hypothesis (H1) was reported as rejected, which may reflect a mismatch between the empirical result and the hypothesized direction, measurement expectations, or predefined decision criteria rather than the absence of an effect. Similarly, financial knowledge (FINK) shows a stronger positive and statistically significant relationship with women SMEs performance ($\beta = 0.416$, $t = 9.459$, $p < 0.001$), indicating that higher levels of financial literacy such as understanding budgeting, accounting, credit management, and investment decisions substantially enhance the performance of women-owned SMEs. Among the two predictors, financial knowledge exerts the greater influence, underscoring its critical role in entrepreneurial success.

The model's predictive relevance, as indicated by $Q^2 = 0.211$, exceeds the recommended threshold of zero, demonstrating that the model has moderate predictive relevance for women SMEs performance. This suggests that financial attitude and financial knowledge jointly contribute meaningfully to explaining and predicting performance outcomes among women-owned SMEs.

Discussion of Findings

The findings of this study reveal that financial knowledge has a significant and positive effect on the performance of women-owned SMEs in Kaduna State, Nigeria. This indicates that

women entrepreneurs who possess a sound understanding of fundamental financial concepts such as budgeting, interest rates, inflation, credit management, and risk diversification are better positioned to make informed business decisions that enhance firm performance. This result is consistent with the OECD (2013; 2014) framework, which identifies financial knowledge as a core pillar of financial literacy, and aligns with empirical evidence showing that inadequate financial capability constrains women-owned enterprises from scaling and innovating effectively (Rink, Walle, & Klasen, 2021). In the Nigerian context, where financial exclusion among women remains high due to low financial literacy levels (CBN, 2023), this finding reinforces the argument that improving financial knowledge is critical for closing performance gaps between male- and female-owned enterprises (SMEDAN, 2017; 2021; Peter & Orser, 2024).

The study further establishes that financial attitude has a significant positive influence on women SMEs' performance, suggesting that beyond technical knowledge, entrepreneurs' financial mindsets and dispositions play a crucial role in business success. Positive financial attitudes—such as commitment to saving, prudent borrowing, disciplined spending, and long-term financial planning enhance the effective application of financial knowledge in day-to-day business operations. This finding supports prior studies which emphasize that financial attitude shapes financial decision-making and outcomes (Yuliarto, Inayah, & Sugiyarti, 2024; Graña Álvarez et al., 2022). It also corroborates evidence that weak financial attitudes can exacerbate the challenges faced by women entrepreneurs, limiting their competitiveness and sustainability (Ahmed et al., 2024; Ogbari et al., 2024). Overall, the result highlights the need for integrated financial literacy interventions that simultaneously build financial knowledge and foster positive financial attitudes to improve the performance of women-owned SMEs in Nigeria.

5. CONCLUSION AND RECOMMENDATIONS

This study concludes that financial literacy is a critical determinant of women-owned SMEs' performance in Kaduna State, Nigeria, with financial knowledge and financial attitude emerging as significant drivers of business success. The findings demonstrate that women entrepreneurs who possess adequate financial knowledge are better equipped to make informed financial decisions that enhance efficiency, sustainability, and growth, while positive financial attitudes strengthen disciplined financial management and long-term planning. Collectively, these dimensions of financial literacy play a complementary role in improving the performance of women-owned enterprises, addressing persistent challenges such as financial exclusion, limited access to finance, and underperformance relative to male-owned firms. The study

therefore affirms the relevance of the OECD financial literacy framework and contributes empirical evidence to the discourse on women entrepreneurship in Nigeria.

Based on the findings the study recommended that:

1. Government agencies, financial institutions, and entrepreneurship development organizations such as SMEDAN should design and implement targeted financial education and capacity-building programmes for women entrepreneurs. These programmes should focus on practical financial skills, including bookkeeping, budgeting, credit management, and investment decision-making, to enhance women SMEs' ability to access finance and improve business performance.
2. Policymakers and development partners should complement financial training initiatives with mindset-oriented interventions, such as financial coaching, mentoring, and behavioural finance workshops. These interventions should aim to cultivate positive financial attitudes such as savings discipline, prudent borrowing, and long-term financial planning to ensure that financial knowledge is effectively translated into improved performance outcomes for women-owned SMEs.

6. LIMITATIONS AND SUGGESTIONS FOR FUTURE STUDIES

One of the major limitation of the research is the inability to establish causality due to the cross-sectional design. Therefore, future studies should employ longitudinal studies to test the relationships.

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RELATIONSHIPS BETWEEN ROLE MODELLING, FEAR OF FAILURE, FAMILY
SUPPORT AND ENTREPRENEURIAL INTENTION OF FEMALE STUDENTS IN
KADUNA STATE

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Abstract

This study investigated the effects of Role Modelling, Fear of Failure, and Family Support on Entrepreneurial Intention among female students in tertiary institutions in Kaduna State, Nigeria. Grounded in the theory of planned behaviour and social support theory, the study adopted a positivist research philosophy, a deductive approach, and a quantitative research design. Data were collected using a structured questionnaire distributed to 520 female students across 15 tertiary institutions, and 487 valid responses were analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM). The measurement model demonstrated satisfactory validity and reliability, with all constructs meeting the required thresholds for composite reliability and average variance extracted. The structural model revealed that Role Modelling ($\beta = 0.306$, $p = 0.014$), Fear of Failure ($\beta = 0.250$, $p = 0.027$), and Family Support ($\beta = 0.422$, $p = 0.001$) all had significant positive effects on entrepreneurial intention. These findings highlight the importance of social and psychological factors in fostering entrepreneurial behaviour among female students, aligning with the theoretical premise that subjective norms and perceived behavioural control strongly influence intention. The results also support prior studies emphasising the role of Role Modelling, Family Support, and the reframing of Fear of Failure as a motivational driver rather than a barrier. The study concludes that targeted mentorship, family involvement, and structured interventions addressing Fear of Failure can significantly enhance female students' entrepreneurial intention. It recommends that policymakers, educational institutions, and entrepreneurship development programs create supportive ecosystems to nurture future female entrepreneurs in developing economies.

Keywords: Role Modelling, Fear of Failure, Family Support and Entrepreneurial Intention

Introduction

Women starting their own businesses, especially in developing countries like Nigeria, has become a major force behind social and economic progress, poverty reduction, and women's empowerment. For girls in places like Kaduna State, starting a business is not only a way to make money, but also a way to challenge gender roles and promote self-determination. Rahman et al. (2023) assert that women's entrepreneurship in Nigeria is revolutionary as it fosters innovation, generates employment opportunities, and enables women to engage actively in the nation's progress. This point of view supports the idea that encouraging young women to become entrepreneurs is important for both society and the economy. This is especially true because these students are a large group of future entrepreneurs who could change their communities.

Despite the significant potential, women in Nigeria encounter structural, cultural, and psychological obstacles that hinder their ability to launch their own enterprises (Amokeoja, 2024). There remain disparities based on gender regarding access to funding, education, and organizational backing for business owners, which significantly complicates the journey for women wishing to establish and manage their own firms (Amokeoja, 2024). In Kaduna State, traditional gender expectations and the conflicting responsibilities of family life further exacerbate these issues, leading to a decreased likelihood for women to seize business opportunities (Amokeoja, 2024). Nonetheless, entrepreneurship presents an excellent chance to overcome these limitations, particularly when there are supportive factors in place, such as positive Role Models, reduced Fear of Failure, and robust Family Support networks.

Role Modelling has consistently been regarded as a significant factor influencing women's motivation to embark on entrepreneurial ventures. Boldureanu et al. (2020) suggest that observing successful entrepreneurs within one's community or family can enhance self-confidence and demonstrate the feasibility of launching and managing a business. For female students, witnessing accomplished women entrepreneurs who have navigated similar social and economic hurdles serves as a compelling source of inspiration and mentorship. These role models not only motivate but also provide valuable insights on how to address challenges that arise during the entrepreneurial journey. According to Abbasianchavari and Moritz (2020), observing successful entrepreneurs fosters self-belief among women and aids in transforming their ambiguous aspirations into concrete business strategies. In Kaduna State, where cultural norms may restrict the professional visibility of women, this dynamic can significantly

influence the reformation of perceptions and validate the ambition to engage in entrepreneurship (Fellnhöfer & Mueller, 2018).

Conversely, existing literature presents a range of outcomes regarding the relationship between Role Modelling and entrepreneurial intentions. Certain research indicates a robust positive correlation (Nowiński & Haddoud, 2019; Fellnhöfer & Mueller, 2018), while other studies reveal weaker or inconclusive associations (Karimi et al., 2013; Amofah & Saladríguez, 2022). These disparities highlight the necessity of further examining the elements that shape female students' responses to entrepreneurial Role Modelling. One contributing factor is the interaction of Role Modelling with various psychological and social influences, such as Fear of Failure and Family Support, which can either facilitate or impede the transition from inspiration to actionable steps.

A significant psychological barrier to initiating a business is the Fear of Failure. Numerous female students perceive the risks of failing in entrepreneurship as heightened due to societal expectations and insufficient support systems. This perception diminishes their likelihood of pursuing their own business endeavors. Cacciotti et al. (2020) emphasize that Fear of Failure is not solely an emotional response; it also constitutes a cognitive appraisal of risk that can severely diminish one's entrepreneurial aspirations. This apprehension may be particularly pronounced in cultures where the professional failures of women are more rigorously scrutinized, as seen in certain regions of Northern Nigeria. Hunter et al. (2020) argue that reducing the Fear of Failure necessitates cultivating a more supportive environment where mistakes are regarded as opportunities for growth rather than indicators of personal inadequacy. In order to assist female students in Kaduna State in overcoming this fear, solutions may extend beyond educational initiatives; they may also involve enhancing social and familial frameworks that normalize the acceptance of entrepreneurial risks.

Another significant aspect influencing the ambition of female students to establish their own enterprises is Family Support. According to Neneh and Welsh (2022), emotional and financial backing from family can play a crucial role in encouraging women to consider entrepreneurship. For numerous women in Nigeria, family remains the primary source of affirmation or disapproval regarding their career paths. Thus, families that provide support can achieve two outcomes: they can assist individuals in overcoming mental obstacles such as the Fear of Failure, and they can enhance the benefits associated with being entrepreneurial. For

instance, families that share household responsibilities or allocate some initial funding help eliminate practical obstacles, while those that encourage students' entrepreneurial aspirations strengthen their belief in their capacity to succeed. In Kaduna State, where traditional family dynamics are still prevalent, understanding the impact of Family Support on variations in Entrepreneurial Intention among female students is essential.

The relationship among Role Modelling, Fear of Failure, and Family Support creates a thorough framework for analyzing Entrepreneurial Intention. Although the current literature frequently examines these elements separately, there is a growing acknowledgment that their combined influences may provide a more comprehensive understanding of entrepreneurial decision-making among female students in Nigeria. For instance, the motivational impact could be lessened if the Fear of Failure is not addressed, whereas Family Support can enhance the effects of both Role Modelling and diminished Fear of Failure by offering a safety net that encourages individuals to take risks.

Kaduna State presents a distinctive setting for investigating these dynamics. As a region of economic significance and social diversity, it mirrors both the difficulties and opportunities encountered by female students in Northern Nigeria. The state's combination of urban and rural environments, alongside its cultural and educational variety, makes it an optimal area to study how sociocultural, psychological, and familial elements converge to influence entrepreneurial intention. This research, therefore, aims to address the existing knowledge gaps by examining how Role Modelling, Fear of Failure, and Family Support together shape the entrepreneurial aspirations of female students in Kaduna State.

By identifying these gaps, this study intends to make theoretical and practical contributions. Theoretically, it will elucidate the intricate relationships among essential psychological and social factors that propel Entrepreneurial Intention among women. Practically, the results will offer evidence-based suggestions for policymakers, educators, and community leaders striving to promote female entrepreneurship in Kaduna State and beyond. Enhancing Role Modelling opportunities, mitigating Fear of Failure through focused training, and mobilizing Family Support systems could collaboratively foster an enabling atmosphere for the forthcoming generation of female entrepreneurs. Ultimately, empowering female students to engage in entrepreneurial activities is not merely a matter of personal growth but also a strategic necessity for the overall economic and social evolution of Nigeria.

Literature Review

Review of Concepts

Entrepreneurial Intention

According to Hueso et al. (2020), Entrepreneurial Intention refers to the awareness and mental state of a person that directs their actions and focus toward intended entrepreneurial activities, like starting a new business. It is often seen as a key factor influencing individuals' choices to engage in entrepreneurial careers and serves as a significant indicator of entrepreneurial activity (Chaudhary & Biswas, 2023). Developing policies and educational initiatives that foster entrepreneurial engagement is guided by insights into entrepreneurial intention, which sheds light on the cognitive and motivational frameworks that are foundational to entrepreneurship (Barba-Sánchez et al., 2022; Duong, 2022).

Entrepreneurial Intention links entrepreneurial mindsets with actual entrepreneurial actions by translating theories into measurable outcomes, as elucidated by Bazan et al. (2020). It signifies a thoughtful mental process that individuals navigate in preparing to seize business prospects, embrace risks, and confront uncertainty (Cui & Bell, 2021). The Theory of Planned Behaviour (TPB) proposed by Ajzen (1991) identifies intention as the most significant predictor of intended behavior, shaped by subjective norms, perceived control over behavior, and attitudes related to entrepreneurship (Su et al., 2021; Wijayati et al., 2021). These elements collectively clarify how individuals become prepared for entrepreneurial endeavors, aiding researchers and policymakers in formulating effective strategies.

Nonetheless, researchers argue that Entrepreneurial Intention includes more than merely cognitive aspects. The process of making entrepreneurial choices is significantly swayed by psychological factors such as self-efficacy, along with emotional elements like enthusiasm, anxiety, and excitement (Kumar & Nayak, 2022). Additionally, contextual elements, including Family Support, availability of resources, and cultural norms, impact perceptions regarding the feasibility and attractiveness of entrepreneurship (Tomy & Pardede, 2020; Elnadi & Gheith, 2021).

Consequently, it becomes essential to view Entrepreneurial Intention as a dynamic and intricate concept that integrates environmental, psychological, emotional, and cognitive dimensions. This holistic perspective supports approaches designed to stimulate entrepreneurial aspirations and participation, facilitating a more profound understanding of entrepreneurial behavior.

Role Modelling

Due to their provision of visible success examples, role models hold considerable sway over the entrepreneurial intentions of individuals aiming to start businesses. By observing these role models, individuals are encouraged to believe in their potential for entrepreneurial success, translating abstract business aspirations into concrete achievements (Abbasianchavari & Moritz, 2020; Amofah & Saladrighes, 2022). This observational learning demonstrates methods to navigate challenges such as uncertainty and fear of failure, diminishing perceived obstacles associated with entrepreneurship and enhancing motivation (Kong et al., 2020; Rocha & Van Praag, 2020).

Beyond motivation, role models also transfer entrepreneurial principles and strategies that provide valuable guidance. By witnessing the demonstration of key traits such as resilience, adaptability, and creativity, aspiring business owners can internalize these attributes and develop an active mindset (González-López et al., 2020; Bullough et al., 2021). This nurturing of essential qualities is a significant contributor to self-efficacy, which is enhanced through this process (Sancho et al., 2018). Additionally, role models frequently share important insights about market trends, business management, and strategies for overcoming common hurdles, helping to demystify the entrepreneurial experience while elevating individuals' self-esteem (Boldureanu et al., 2020).

The role of mentors further amplifies their impact by providing networks, personalized advice, and emotional encouragement (Elnadi & Gheith, 2021). Such mentorship fosters sustained motivation and fosters a sense of belonging within the entrepreneurial community (Santos & Liguori, 2019). Nevertheless, the absence of relatable figures or exposure to unrealistic models can impede entrepreneurial drive by promoting self-doubt (Jena, 2020; Maziriri et al., 2024).

Therefore, approachable individuals who resonate culturally are vital. By blending inspiration, experiential learning, and psychological empowerment, their integration into entrepreneurship education, mentoring initiatives, and support groups can significantly enhance entrepreneurial intent (Nowiński & Haddoud, 2019).

Fear of Failure

Fear of Failure is a deeply rooted psychological phenomenon that significantly influences entrepreneurial behaviors. It involves individuals exaggerating risks and potential losses,

stemming from anxiety about the chance of failing to achieve desired objectives (Cacciotti et al., 2020). In societies where failure is heavily criticized, this fear can deter individuals from entrepreneurial pursuits, as they worry about financial setbacks, reputational damage, and societal judgment (Engel et al., 2019; Wannamakok & Chang, 2020). As a result, many prospective entrepreneurs either shy away from entrepreneurship altogether or engage in risk-averse practices (Chang, 2020).

Moreover, Fear of Failure brings about emotional and cognitive challenges such as heightened stress, diminished self-esteem, and negative thought patterns (Stroe et al., 2020). These issues not only discourage entrepreneurial intent but also stifle creativity and innovation (Czakoń et al., 2022). Unlike environments such as Silicon Valley, where failure is reframed as an opportunity for learning, fear-induced avoidance fosters conservative entrepreneurial landscapes that hinder societal exploration and development (Vodă et al., 2020).

However, fear of failure is not inherently detrimental. When managed appropriately, it can motivate entrepreneurs to formulate strategic approaches, develop risk mitigation plans, and strive for exceptional operational performance (Kollmann & Kuckertz, 2010). Strong networks of social support can alleviate the adverse effects of fear, and self-efficacy serves as an important moderating factor; individuals with higher confidence levels perceive fear as a challenge rather than an obstacle (Mamari et al., 2020).

Educational and policy initiatives designed to enhance resilience, normalize the experience of failure, and promote active learning are essential in addressing the Fear of Failure. Entrepreneurs have the opportunity to transform fear into a catalyst for tenacity, adaptability, and sustainable achievement by viewing it as a source of motivation and a warning signal (Ratten, 2023).

Family Support

In contexts characterized by substantial risks associated with entrepreneurship, Family Support plays a crucial role in fostering entrepreneurial intentions. The emotional backing provided by family members enhances self-confidence, reduces anxiety levels, and assures entrepreneurs that they possess a reliable safety net—particularly in cultures that are cautious about risk, where failure poses a significant challenge (Cardella et al., 2020). This emotional encouragement promotes resilience and self-assurance, essential traits for overcoming challenges, while enabling entrepreneurs to focus more on opportunities than potential pitfalls (Saoula et al., 2023).

Moreover, families often provide financial aid, such as direct investments or guarantees for loans, which lowers barriers to entry and reduces reliance on external financing (Ahmed et al., 2020). By offering practical support, including assistance with routine tasks or childcare, families enable entrepreneurs to concentrate on strategic growth and development (Saoula et al., 2023). Additionally, families frequently take on the role of informal mentors, conveying entrepreneurial expertise and insights that formal educational systems may not cover (Porfirio et al., 2020).

However, Family Support is not without its drawbacks. When family members impose strict expectations, excessive involvement may lead to overreliance, reduced autonomy, and restricted creativity (Chang et al., 2019). In collectivist societies, family involvement often enhances entrepreneurial teamwork, yet in individualistic cultures, it may be perceived as intrusive, potentially hindering independence (Fellnhöfer, 2023).

Recent studies indicate that these dynamics are evolving, as digital connectivity allows family members residing far apart to provide resources and guidance, particularly beneficial for technology-driven enterprises (Munoz et al., 2024). Thus, Family Support can significantly bolster Entrepreneurial Intention through practical, financial, and emotional channels; nevertheless, it is imperative to maintain a balance that empowers the entrepreneur rather than constraining them (Chrisman et al., 2023).

Empirical Review

Role Modelling and Entrepreneurial Intention

It has been shown that Role Modelling plays a crucial role in shaping entrepreneurial intention by providing potential entrepreneurs with inspiration, valuable information, and behavioral frameworks. The significance of learning through observation was emphasized by Kong et al. (2020), who found that the exposure to entrepreneurial Role Models significantly increased the Entrepreneurial Intention of Chinese graduates. Similarly, Villanueva and Martins (2022) identified that these role models influence risk evaluation and strengthen the relationship between entrepreneurial behavior and intention. González-López et al. (2020) demonstrated that sharing entrepreneurial values, attitudes, and practical strategies fosters resilience and self-efficacy. However, much of the research focuses on Role Modelling within developed or specific transitional economies, particularly in regions such as Europe and Asia, with limited attention given to developing countries where this type of modelling could be particularly

important due to structural deficiencies and inadequate formal entrepreneurial support systems (Ndofirepi, 2020). Consequently, there remains a gap in understanding how Role Modelling directly impacts Entrepreneurial Intention in developing nations.

H1: Role Modelling significantly influences entrepreneurial intention.

Fear of Failure and Entrepreneurial Intention

While only a few studies have examined Fear of Failure as an independent factor affecting entrepreneurial intention especially in developing nations it has been widely researched within entrepreneurship studies, primarily as a moderating variable. De Sousa-Filho et al. (2023) found that Fear of Failure adversely affected both attitude and perceived behavioral control in Brazil, Mexico, and Peru, but did not affect Colombia. For instance, Kong et al. (2020) indicated that Fear of Failure diminished the correlation between Entrepreneurial Intention and behavior among Chinese graduates. Duong and Vu (2023) noted that Fear of Failure negatively moderated the effect of entrepreneurial education on intention in Vietnam, while Duong (2022) showed that it reduced the mediating role of Entrepreneurial Intention connecting attitude and behavior. Even though they typically approach this issue from a contextual or dispositional perspective, research in Pakistan (Hanif et al., 2021) and India (Thoudam et al., 2022) also highlights the significance of Fear of Failure. Thus, there is still limited understanding of how Fear of Failure directly affects Entrepreneurial Intention in developing countries.

H₂: Fear of Failure has a significant effect on entrepreneurial intention.

Family Support and Entrepreneurial Intention

By providing practical, financial, and emotional assistance that reduces the risks associated with starting a business, Family Support plays a crucial role in fostering entrepreneurial aspirations. The emotional backing from family members enhances self-confidence, resilience, and assurance, which enables entrepreneurs to navigate uncertainties and conquer their fears of failure (Cardella et al., 2020; Xu et al., 2020). When entrepreneurs receive financial aid, such as loan guarantees or funding during the early stages, it allows them to focus on long-term strategic development rather than being pressured by short-term profit targets, thus reducing barriers to business entry (Ahmed et al., 2020; Ruiz-Palomino et al., 2023). In addition to functioning as informal mentors who share valuable insights and experiences, families also provide practical help, including childcare and operational support (Saoula et al., 2023; Porfirio et al., 2020). However, excessive family involvement can hinder creativity and independence, particularly in cultures that strongly value autonomy (Chang et al., 2019). Consequently, Family Support is most effective when it enables entrepreneurs instead of constraining them.

H₃: Family Support has a significant effect on entrepreneurial intention.

Theoretical Framework

The frameworks for explaining how Role Modelling, Family Support, and Fear of Failure influence Entrepreneurial Intention are grounded in the Theory of Planned Behaviour (TPB) and Social Support Theory (SST). According to the TPB, Entrepreneurial Intention is influenced by individual attitudes, perceived control over behavior, and subjective societal norms (Ajzen, 1991). To foster favorable attitudes and enhance feelings of control, Family Support and Role Modelling function as key subjective norms that provide direction, motivation, and affirmation (Rajar et al., 2022; Saoula et al., 2023). Conversely, Fear of Failure has a detrimental effect on Entrepreneurial Intention as it negatively influences attitudes and perceived control (Ahmed et al., 2020). By illuminating pragmatic pathways to success, SST complements TPB by illustrating how emotional, informational, and practical assistance from family members can alleviate Fear of Failure and equip aspiring entrepreneurs with the confidence and resources necessary for proactive engagement (Porfirio et al., 2020).

Methodology

In order to objectively investigate the factors influencing Entrepreneurial Intention among female students in Kaduna State, this study used a one-method quantitative design, a positivist philosophy, and a deductive approach. Standardized data from a sizable sample was gathered using a survey approach, which was suitable for evaluating the study's hypotheses. This study employed a multi-stage sampling design. The first stage involved the purposive selection of tertiary institutions to ensure a diverse and representative range of institutional characteristics. The second stage involved the systematic selection of female student participants within the chosen institutions.

Stage One: Purposive Selection of Tertiary Institutions

A total of 15 tertiary institutions were purposefully selected for this study. The selection was guided by the need to capture the heterogeneity of the tertiary education landscape. The following criteria were used such as institution type, senatorial zone and institution demographics. Female students from 15 Kaduna State tertiary institutions eight universities, three polytechnics, and four colleges of education made up the population. This population was regarded as infinite due to its size. A minimum sample size of 420 was established in accordance with Israel's (2013) recommendation, and an extra 30% was added to account for non-responses, yielding 600 questionnaires that were distributed.

Stage Two: Systematic Sampling of Female Students

Within each of the 15 purposefully selected institutions, a systematic sampling technique was employed to select female student participants. This approach ensured a random yet orderly selection process, minimizing selection bias at the student level.

Sampling Frame: For each institution, the sampling frame consisted of all full-time, undergraduate female students enrolled in the Social Sciences, Humanities, and Education faculties/departments. The relevant departments included (but were not limited to), Business Administration, Economics, Banking and Finance, Sociology, Political Science, English, Theatre and performing Art etc. These faculties were specifically targeted as they typically have a higher female student enrollment, ensuring a sufficient pool for sampling.

Sampling Interval (k): For each institution, the total number of registered female students in the designated faculties was obtained from the institution's academic registry. The sampling interval was calculated separately for each institution using the formula:

$$k = N/n$$

Where:

N = Total number of registered female students in the selected faculties/departments at that institution.

n = The target number of female students to be selected from that institution (40 students per institution, for a total of $15 \times 40 = 600$ participants).

Starting Point: For each institution, a random starting point between 1 and the calculated interval (k) was selected. This was done by using a random number generator (e.g., the Microsoft Excel RANDBETWEEN (1, k) function) on a fresh list of students.

A structured questionnaire with established scales modified from earlier studies was used to gather data. Six items from Cacciotti et al. (2020) were used to measure Fear of Failure, and four items modified from Laviolette et al. (2012) were used to measure Role Modelling. Six items from Carr et al. (2007) were used to measure Family Support, and six items from Liñán and Chen (2009) were used to measure entrepreneurial intention. To guarantee consistency and comparability of responses, each item was scored on a five-point Likert scale that went from "strongly disagree" to "strongly agree." The questionnaire's validity and reliability were evaluated in a pilot study with 30 female students using composite reliability, the Fornell-Larcker criterion, and Average Variance Extracted (AVE). Partial Least Squares Structural Equation Modelling (PLS-SEM) was then used to analyse the data in order to assess the measurement model and test the structural relationships between the variables in the study.

Data Analysis

Measurement Model

Table 1: Measurement Model

Constructs	Items	Loadings	AVE	CR
Fear of Failure	FoF1	0.781	0.708	0.801
	FoF5	0.889		
	FoF6	0.850		
Role Modelling	RM3	0.706	0.640	0.778
	RM4	0.884		
Family Support	FS2	0.869	0.755	0.861
	FS6	0.869		
Entrepreneurial Intention	EI1	0.738	0.669	0.889
	EI2	0.846		
	EI3	0.896		
	EI4	0.847		
	EI5	0.750		

Note: AVE represents Average Variance Extracted, CR represents Composite Reliability

For every construct, the measurement model's results showed adequate validity and reliability. Three items (FoF1, FoF5, and FoF6) were used to measure Fear of Failure. They showed good convergent validity with strong loadings ranging from 0.781 to 0.889, an Average Variance Extracted (AVE) of 0.708, and a Composite Reliability (CR) of 0.801. Two items (RM3 and RM4) were used to evaluate Role Modelling; loadings of 0.706 and 0.884, an AVE of 0.640, and a CR of 0.778 were found to be acceptable for construct reliability. The FS2 and FS6 measures of Family Support showed high loadings of 0.869 for both items, with an AVE of 0.755 and a CR of 0.861, indicating excellent internal consistency. Strong validity and reliability were demonstrated by the five items (EI1–EI5) used to measure entrepreneurial intention, which had loadings ranging from 0.738 to 0.896, an AVE of 0.669, and a CR of 0.889. The measurement model satisfied the suggested thresholds for structural equation modelling, according to these findings.

Table 2: Fornell-Larcker criterion

	1	2	3	4
1. Entrepreneurial Intention	0.818			

2. Family Support	0.614	0.869		
3. Fear of Failure	0.620	0.525	0.841	
4. Role Modelling	0.637	0.518	0.653	0.800

The results of the Fornell-Larcker criterion verified that the study constructs had sufficient discriminant validity. The fact that each construct's square root of the Average Variance Extracted (AVE) was higher than its correlations with other constructs suggested that they were different from one another. With the highest diagonal value of 0.818, Entrepreneurial Intention outperformed its correlations with Role Modelling (0.637), Fear of Failure (0.620), and Family Support (0.614). Likewise, Family Support had a diagonal score of 0.869, which was higher than its correlations with Role Modelling (0.518) and Fear of Failure (0.525). Role Modelling had a diagonal correlation of 0.800, higher than its correlations with the other constructs, and Fear of Failure (0.841) was higher than its correlation with Role Modelling (0.653). The Fornell-Larcker criterion for discriminant validity was satisfied by these findings, which show that each construct shared more variance with its own indicators than with other constructs.

Structural Model

Table 3: Test of Study Hypotheses

Relationships	Beta	STDEV	T Stat	P Values
H ₁ : Role Modelling->Entrepreneurial Intention	0.306	0.124	2.463	0.014
H ₂ : Fear of Failure->Entrepreneurial Intention	0.250	0.113	2.213	0.027
H ₃ : Family Support->Entrepreneurial Intention	0.422	0.122	3.462	0.001

All three of the hypotheses were accepted, according to the hypothesis testing results. H1 was supported by the significant positive impact of Role Modelling on Entrepreneurial Intention ($\beta = 0.306$, $T = 2.463$, $p = 0.014$). H2 was accepted because Fear of Failure also significantly increased Entrepreneurial Intention ($\beta = 0.250$, $T = 2.213$, $p = 0.027$). Additionally, H3 was accepted since Family Support had the most significant positive impact on Entrepreneurial Intention ($\beta = 0.422$, $T = 3.462$, $p = 0.001$). These results imply that among female students in Kaduna State, Entrepreneurial Intention is significantly influenced by Role Modelling, Fear of Failure, and Family Support.

Discussion of Findings

Role Modelling and Entrepreneurial Intention

The Theory of Planned Behaviour (TPB), especially the subjective norms component, is supported by the finding that Role Modelling has a significant impact on female students' Entrepreneurial Intention in Kaduna State. offer observable instances of successful entrepreneurship, which can boost self-esteem and lower perceived obstacles to launching a company (Ajzen, 1991). This beneficial effect might be explained by the fact that seeing successful businesspeople enables female students to imagine achieving comparable results, which in turn boosts their motivation. This finding is consistent with that of Laviolette et al. (2012), who discovered that exposure to entrepreneurial increases Entrepreneurial Intention and self-belief. serve as potent social proof that entrepreneurship is feasible in Kaduna State, where there may be structural and cultural barriers to female entrepreneurship. This strengthens the desire to pursue entrepreneurship.

Fear of Failure and Entrepreneurial Intention

Fear may serve as a positive motivator rather than a deterrent, as evidenced by the substantial impact that Fear of Failure has on entrepreneurial intention. This is consistent with TPB, which holds that when people react to fear by better planning and preparation, their perceived behavioural control can be reinforced (Ajzen, 1991). According to this study, female students may view their fear of failing as a challenge that motivates them to acquire the knowledge and tools they need for success rather than as a barrier. This result is in line with Cacciotti et al. (2020), who pointed out that when people think they have sufficient coping strategies, their fear of failing can motivate proactive behaviour and perseverance. Fear may act as a catalyst for resilience in Nigeria, encouraging female students to take measured steps towards entrepreneurship in spite of uncertainty.

Family Support and Entrepreneurial Intention

The Social Support Theory (SST), which holds that emotional, informational, and instrumental support improve an individual's capacity to pursue difficult goals, is reflected in the strong positive effect of Family Support on Entrepreneurial Intention (House, 1981). Family Support lowers the practical and psychological barriers to entrepreneurship by offering mentorship, financial aid, and encouragement. This supports the findings of Cruz et al. (2012) and Saoula et al. (2023), who discovered that, especially in collectivist cultures, supportive family environments encourage entrepreneurial confidence and intention. Such support can be the deciding factor that turns entrepreneurial interest into intention for female students in Kaduna

State, where family approval frequently plays a crucial role in career decisions. This emphasises the significance of social networks in promoting entrepreneurial behaviour.

Limitation and Future Research

The study explores the influence of Role Modelling, Fear of Failure, and Family Support on entrepreneurial intentions among female students in Kaduna State, Nigeria, but acknowledges limitations in generalizability due to its focus on a single region and reliance on cross-sectional data.

The study focused on female students in tertiary institutions in Kaduna State, Nigeria, limiting the generalization of findings to other regions and countries due to differing cultural norms and economic conditions. Its designs focused solely on measuring relationships and do not establish causation or track changes over time. Data collected through self-reported questionnaires faced risks of bias. Future research should include a broader range of Nigerian states and integrate various theoretical frameworks, incorporating qualitative methods to provide richer insights into the experiences of female students regarding entrepreneurial intentions.

Conclusions and Recommendations

This study looked at how female students in Kaduna State, Nigeria, felt about their intention to start their own business in relation to Role Modelling, Fear of Failing, and Family Support. The results showed that Entrepreneurial Intention was significantly positively impacted by all three variables. Family Support offered emotional, financial, and informational resources that bolstered entrepreneurial confidence; Fear of Failure served as a positive motivator; and Role Modelling inspired and reinforced subjective norms. The theory of planned behaviour and the social support theory, which describe how social and psychological elements influence intention, are in line with these findings. Overall, the study shows that social influence, supportive environments, and the capacity to turn perceived obstacles into motivators all contribute to female students' Entrepreneurial Intention in addition to their own personal drive.

These results suggest that in order to enhance the role-modeling effect, academic institutions and policymakers should create formal mentorship programs that pair female students with prosperous business owners. In order to help students' reframe their Fear of Failure as a motivator for preparation and resilience, entrepreneurship training should also include psychological support components. In order to inform parents and family members about the significance of offering aspiring female entrepreneurs both practical and emotional support, family-oriented awareness programs should also be implemented. In Kaduna State and

comparable settings, stakeholders can establish an environment that greatly increases Entrepreneurial Intention and, eventually, female entrepreneurship by cultivating strong Role Modelling, constructively addressing Fear of Failure, and increasing family involvement.

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