



ACCOUNTING

HYBRID WORK MODEL, THE FLEXIBLE AND NEW COST REDUCTION STRATEGY

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Abstract

Hybrid work model which allows a fusion of remote working and the traditional office work model interchangeably, is driven by information technology, coupled with data driven system to create the base for which work can sometimes be carry outside the business premises. This new normal is used as a cost cutting strategy, where many works with services components can be done by designated staff outside the business environment. Hybrid work model can significantly contribute to the Sustainability Development Goals (SDG) Goal 8, by promoting a sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all through diversification, technological upgrading and innovation through cost reduction strategy, where only a small amount of work may be carried within the office space, reduced commuting cost, pollution cost, utility bills and other office related cost on both the employer, the employee and the environment. This study, attempts to show and discuss the functional efficiency brought about as a result of the hybrid working and the cost implication on businesses and the environment. Several studies were reviewed and findings from the theoretical evidence shows, increased functional efficiency as a results of the adoption of the hybrid work model in organisations. This do not necessarily translate into workforce downsizing but cost reduction strategy and friendly environment for work which enhance financial performance in business and cost reduction.

Keywords:

Hybrid work model,
Sustainability Development
Goals, functional efficiency,
pandemic, cost reduction

1. Introduction

The end of the pandemic popularized the hybrid work model as businesses globally, coming from the gains of remote working forced on the global workforce during the lock-down. The COVID 19 pandemic accelerated businesses to remote working as an alternative to continue operations. Today, the discuss for either remote working or the traditional office model, continue to be the subject between employers and employees given the associated benefits. The hybrid work model, a blend of the two models tends to benefit both the employers and the employees. These benefits, the Future Skills Centre Canada (2024) listed as increased flexibility, reduced commuting time for workers, enhanced worker's productivity, improved work-life balance, cost savings, better work health, well-being, and expanded job opportunities among others. The reduced risk in the work place and physical environment such as reduced emission from traffic, waste generation and energy consumption in the work place, contributes to attaining some levels of the Sustainability Development Goals (SDG), Goal no 11 and 13 making cities/human settlements inclusive, safe, resilient and sustainable, at the same time combating climate change and its impacts.

The advancement in technology, makes the emphasis on working partly from office and remote working more easy. Thus, in today service firms the term work from home is the new normal, promoting a practice that had struggled to gain traction and acceptance before the pandemic. Hybrid work models has now persist in the wake of the pandemic and even into the post pandemic era, mostly for the service related industry using its flexibility as a cost reduction strategy, this ultimately help to increase profit as savings from the avoided cost becomes more profit to the business. The more workers are kept away from their offices while the work gets done, the more associated cost with office-space such as maintenance of the office, electricity cost, cleaning among others are avoided or kept low. Hybrid work model can also be a tool to promote clean environment as one of the main item in the SDGs. Lund et al., (2020) stress that most highly educated, well-paid minority of the workforce will continue into a flexible work plan even after the pandemic because it helps the business to cut cost on power, stationary, office rent and other support service cost such as canteen, security, packing space among others.

Hybrid work model is a work model that allow both the remote work model and the traditional work model, driven by Information technology coupled with data driven system that creates the base for which work can be done away from the business premises. This new normal will never have been made possibly outside information technology. The issues on good business model design are all related to a sound information technology backed by sufficient data. According to Teece (2009) the core fundamental question asked by business strategists is how to build a sustainable competitive advantage and turn a super normal profit. Through the lockdown and the limitations brought about by the pandemic, the benefits of remote working, hybrid flexible work model were made even clearer (Lund, et al.,2020). The virus broke through technological and cultural barriers that have prevented remote working and flexible work plan in the past, setting in motion for a structural shift where work takes place, at least for some members of the work force if not all the workforce in locations other than the office. As workers returns to the workplace after the ease of the lockdown and societies reopening, the economic benefit seen from the hybrid work models such as cost reduction and functional efficiency opens a new operational strategy for businesses around the world to cut cost.

The new phenomenon has increased the consideration of employer/employee needs in the work model design and how to create value from how work is carried out. A well-developed business model delivers or create value for all stakeholders in the business, with the current increase in the hybrid (virtual/traditional) the traditional work model is being adjusted to face or cope with the change remote working will bring. The works of Grantham, et al, (2009) argued from a positive view, that hybrid work model will reduce turnover rates, but improve employee commitment and attract talent; thereby, increasing productivity and reducing costs.

Business with hybrid work model have mostly their cost management focused on fixed cost and non-avoidable cost, (Skills Centre Canada, 2024). This shows that the avoidable and controllable cost can be reduced through hybrid working. A major advantage of the hybrid model is that the cost reduction strategy is related to both the employer, manly direct cost such as office space, electricity cost, cleaning and associated office maintenance cost. While on the other side, employee's cost such as commuter cost, daily traffic stress, personnel intrinsic cost such as psychological safety are greatly reduced. Psychological safety is as a shared belief that a worker is safe for interpersonal risk taking, with the confidence that candor and vulnerability are welcome (Edmondson & Hugander, 2021). Many employees will be able to give their best in a more flexible and non-confined environment, which will add to the employer profitability and the ability to cover operating cost by the organisation. Reiff-Marganec (2012) maintain that the virtual work sector of the hybrid work model will encourage innovative methods that contribute to increased productivity. From this perspective, the hybrid (virtual/traditional) workforce will help the organisation to evolves into new ways of doing things, reduced variable cost and at the same time help to maintain a competitive edge in a fast-paced global market.

2. Literature review

Remote working as a form of teleworking is not a new idea, often seen as a luxury afforded to a privileged few in the past. Gajendran (2016) define remote working as a work arrangement in which employees do their work from home or from convenient place instead of commuting to a central office location. Kurkus-Rozowska, and Konarska, (2002) define teleworking as a work done by a worker outside the office space using telecommunications and information technology. Many companies now see remote work as a strategy to reduce cost, going into the post pandemic era, given the benefits gained during the lockdown.

The advantages of a remote work model according to Bailey, and Kurland, (2002); Wheatley, (2012) and Kłopotek (2017) are a better work-life balanced, higher productivity, timeliness, reduced absenteeism, cost savings while the disadvantage are that a worker will be easily distracted at home, may be isolated and may even loss a work-life balance. Remote working relatively benefits the employees and the employer promoting a higher rate of productivity and work efficiency, Marivic (2019) further argued that the Global Workplace Analytics, research showed over two-thirds of telecommuters among their employers increased productivity. In addition, the integration of remote workforce help cut down relevant cost such as commuting expenses and expenses on office space and rent. However, remote working also presents negative impact on the workers such as social isolation due to lack of interaction with others workers (Busch, et al., 2011).

A hybrid work model also known as flexible work model refers to a workforce that is spread across different locations, from the traditional office and factory spaces settings to remote locations, such as, café, employees' living home or any other space apart from the traditional office. A hybrid working model is characterized by its flexibility and choices offered to employees, it can be an innovative way of driving new approaches to agility, collaboration, and ways of working (Crummenerl, et al., 2020). The workforce is empowered to work from home sharing important moments with their families, eating meals together and witnessing the day-to-day activities of those they love most in a positive atmosphere with genuine love. They have avoided the daily commute and the realisation that not all meetings need to be as long or as large as they used to be (Sharply, et al., 2020). The shift to remote working has enhanced functional efficiency and at same time boosted productivity and cost savings as argued by Crummenerl, et al. (2020) that employees productivity at organisations with flexible work model grew during the third quarter of 2020, driven by the reductions in commute time due to the lockdown and the adoption of virtual collaboration tools.

Crummenerl, et al. (2020) proves that over six in ten organizations witnessed productivity gains in the third quarter of 2020 due to remote working and average productivity gains ranged from 13%-24%. Nearly 70% of organizations believe that the productivity gains of remote working are sustainable beyond the pandemic. A majority of organizations expect remote working to reduce real estate, facility management, and business travel costs, among others (Vasel, 2017; Crummenerl, et al. 2020). Celerative (2020) showed that flexible arrangements in companies such as Best Buy, British Telecom, Dow Chemical, the Institute of Chartered Accountants of Nigeria (ICAN) in Nigeria among others, has shown that remote work model is 35%–40% more productive when compared to traditional work model and showed 41% of employees' response in McKinsey consumer survey agreed they were more productive working remotely than in the office.

According to Lund et al, (2020) those employees engaged in remote work during the pandemic gained more experience, confidence and increase productivity compared to those that did not. Many of the employees were more productive with a 45% increase compared to their productivity rate before the pandemic. A BBC (2013) study, showed 13% increase in productivity when employees were allowed to work from home in just one day every week. One thing encouraged by the business world is automation (Teece, 2009) which makes the hybrid

work model successful. Sharply, et al., (2020) in their study showed automation and analytics technology already in used rapidly grew and boomed overnight to support the hybrid work model which safely deliver services in a hybrid work environment. Many argued that these changes have been a small silver lining in a crippling crisis. Sharply, et al. (2020) posit that the efficiency in work depends on the choice in when, where and how people carry out their work.

Despite the functional benefit of a hybrid work model not all work can be done remotely, as some task still needs the physical presence of a worker. Mostly services such as coaching, teaching and training, counseling, advice and feedback, building customer and colleague relationships, negotiating and making critical decisions were possible in a hybrid system other than factory production of tangible goods as argued by Lund, et al. (2020) that onboarding for instance if were to be done remotely, would require significant rethinking of the activity to produce outcomes similar to those achieved in person. Tran (2022) The greatest challenge in hybrid work model is teamwork, as the absence of coordination between members physically, communication could affect productivity. hybrid Working requires up to date tools, poor internet connections can cause poor communication, poor performance and efficiency. (Beno, 2021)

The emphasis here is not on virtual work alone but combination of traditional office work with virtual work to enhance functional efficiency. Gilbreth (1911) sought to make processes more efficient by reducing the motions involved. Using this assertion in a hybrid work model in line with the views of Gilbreth (1911) some process and time can be reduced, thus reducing associated cost as the same volume of work is still been carried out reducing cost associated to units and departments within the organisations. This single act will help reduce several cost centers from personnel to offices and process which would lead to cost savings such as smaller office rent, utilities and other office supplies. The Encyclopaedia Britannica (2018) showed that; i) workers are motivated by indirect incentives (money) and by direct incentives (job satisfaction); ii) the effects of fatigue; and iii) stress on time management. This three (3) factors are provided in a flexible work environment, the time and when and how work would be carried out by the workers meets the three (3) points stated above. Flexible work plan can be as part of an incentive to employees, handles fatigue as workers work at their pace and convenient at the same time management is able to cut cost which is one of their stress on their path to been profitable. Vassel (2017) posit that management challenge will continue to be a factor in today's hybrid work, for instance, the option to work virtually reduces fatigue and stress on time management as it “allows employees to have better work-life balance and improves their health and wellness. Also the financial savings on the side of both management and the workforce cannot be ignored thanks to reduced expenses on things like office maintenance, gas, parking and public transit costs and dry cleaning and canteen services among others.

On the negative side workers working from home may feel disconnected from the organisation. Other challenges are the chances of being excluded from communication, training opportunities; as well promotions (Grenny & Maxfield, 2017). The challenges of confidentiality, cybersecurity, concerns, isolation and distraction at home. Major United-States, multinational organisations, such as Hewlett-Packard, Honeywell, and IBM, with longstanding hybrid (virtual / traditional) work policies even before the pandemic are requiring their virtual workers to return to some form of traditional office setting. There are a variety of stated reasons for those changes; i.e. lack of communication and idea sharing due to expanded virtual/collocated workforces; and delays in decision-making (Kessler, 2017; Depass, 2016). In contrast, the Intuit (2020) Report, Twenty Trends that will Shape the Next Decade noted that the brick-and-mortar office will be a thing of the past, as the where and how people work and do business will change due to emerging Internet cloud and information technologies. Working in the cloud will increasingly shift work lives away from corporate offices altogether and toward an in-my-own-place, on-my-own-time work regimen (Intuit, 2020).

3. Theoretical Review

The study used the Social Network Theory as the framework to explain the hybrid work model. SNA is a process of investigating social structures through the use of network, which characterize network structure as nodes which can be individuals, group of persons or things linked/connected within the network for interactions or in a productive relation. The organizational units are visualized through sociograms showing points and ties within the organisations where works are being carried on. The social network theory explains the process of work being carried out through social structures. Otte & Rousseau (2002) characterizes networked structures in terms of connected individual actors, people, or things within the network, with ties, edges, or links, that is there is a relationships or interactions that connect them. The social network theory used in this study shows the interactions and connections that takes place within the hybrid work environment as a social network, where works/task can be done from office and several connected remote locations. Examples of social structures commonly visualized through social analysis as shown in (Grunspan, 2014; D'Andrea et al, 2009; Pinheiro, 2011; Hagen, et al., 2018, Brennecke, 2019; Harris, et al., 2009; Grandjean, 2017 and Nasrinpour et al., 2016).

4. Methodology

The study employed a phenomenological method to examine employers and employees' experiences moving from the physical office work to the hybrid work model. This method examines the definitions and meanings of the concepts of hybrid work models, from an in-depth interview approach, adopting Hennink et al., (2017) interview approach with an open-ended question, discussed among selected staffs and other related focus group in the financial service firms. The Open-ended questions were asked as part of the discussions to demonstrate the gains and challenges of moving to the hybrid working. The study involved cross-functional employee focus groups, which examined the effect of the office, remote and hybrid work models on employee engagement and productivity with the implications economic growth and better work life in the Sustainability Development Goals (SDG) through cost reduction strategy, promoting better work and greener environment.

5. Conclusion

The pandemic overnight, completely changed and shifted how we think about work and working models. Organizations have seized the advantages of remote working by adding a virtual layer to their existing operating models which in turn have help reduced cost both on the side of the employer and the employee. However, organizations will not gain sustained competitive advantage through this approach alone, rather leaders need to understand how employees' needs and behaviors have changed and in turn must be flexible to accommodate this change. A shift from the way business are managed; allowing for goal congruence, accommodated employee touchpoints and rethink the role of the physical workspace through flexibilities in both traditional and virtual work space can lead into cost cutting strategies. Organizations that goes beyond a mere layering approach – and get their hybrid model right will see improved productivity, lower costs, refreshed managerial roles, and a strengthened(Crummenerl, et al., 2020). The future of work from remote to hybrid culture will help identify the patterns of activities needed to help reduce cost.

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CORPORATE STRATEGIES AND THE SUSTAINABLE DEVELOPMENT GOALS: ALIGNING BUSINESS PRACTICES FOR NATIONAL PROSPERITY IN NIGERIA

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Abstract

This conceptual paper explores how corporate strategies in Nigeria can align with the Sustainable Development Goals (SDGs) to foster national prosperity. Drawing on the Stakeholder Theory, the study defines corporate strategies as deliberate actions and long-term plans that integrate stakeholder interests with broader societal objectives. It examines the integration of the three pillars of sustainability (economic, social, and environmental) into corporate strategies, emphasizing the role of governance frameworks such as the Nigerian Codes of Corporate Governance (NCCG) in facilitating sustainable practices. The paper uses case studies to highlight the contributions of Nigerian corporations to SDGs, such as Dangote Cement's Energy-Efficient Technologies, Access Bank's gender initiatives, and Oando PLC's renewable energy projects. Additionally, the paper designs a conceptual framework that visually demonstrates how corporate strategies can align with SDGs to achieve national prosperity. This framework integrates theoretical insights with actionable pathways, offering a structured approach for companies to address systemic challenges and drive sustainable development. Recommendations include fostering innovation, enhancing regulatory enforcement, and promoting public-private partnerships to address systemic challenges. This study bridges theoretical insights with practical applications and offers actionable strategies for aligning corporate objectives with the 2030 agenda.

Keywords:

Corporate strategies, Sustainable Development Goals, Stakeholder Theory, National prosperity, Environmental stewardship

INTRODUCTION

Corporate strategies, as conceptualized in this study, refer to deliberate actions and long-term plans that align company objectives with stakeholder interests and broader societal goals, ensuring sustainable growth and value creation (Elkington, 1998; Freeman, 1984). Stakeholder Theory, introduced by Freeman (1984), emphasizes the interconnectedness between business success and societal well-being, advocating for businesses to balance the interests of all stakeholders: employees, customers, communities, and the environment. This theory provides a foundational lens for understanding how corporate strategies can integrate sustainability priorities while addressing diverse stakeholder needs.

The adoption of the United Nations Sustainable Development Goals (SDGs) in 2015 established a universal framework for fostering inclusive growth, environmental sustainability, and social equity. This framework emphasizes the need for integrated, collaborative efforts among governments, businesses, and civil society to tackle global challenges such as poverty, inequality, and environmental degradation and ensure prosperity for all by 2030 (United Nations, 2015). Corporations are positioned as critical actors in this framework, with their

strategies playing a pivotal role in achieving both global and national prosperity (Sachs et al., 2020).

To localize this vision, Nigeria launched the SDGs Implementation Plan (2020–2030) in June 2021, aiming to align national priorities with the 2030 Agenda. However, significant systemic challenges threaten the country's ability to fulfill these commitments. Chief among these are infrastructural deficits and innovation barriers, which undermine progress toward critical goals such as affordable and clean energy (SDG 7), industry, innovation, and infrastructure (SDG 9), and climate action (SDG 13). For instance, Nigeria's infrastructure stock is estimated at 30% of its Gross Domestic Product (GDP), far below the World Bank's recommended benchmark of 70% (Dataphyte, 2024). Bridging this gap requires an investment of approximately \$2.3 trillion over the next 30 years, translating to an annual investment of about \$150 billion (Dataphyte, 2024). The 2019 Global Competitiveness Index ranked Nigeria 130th out of 141 countries for infrastructure quality, underscoring the urgency of addressing these deficiencies.

Innovation within Nigeria also faces significant constraints, including inadequate funding, limited access to modern technologies, and insufficient investment in research and development (R&D). These barriers are especially pronounced in industries like construction, where low R&D investment and fragmentation hinder progress (Cambridge Nigeria Publications, 2021). Government institutions further exacerbate these challenges through cultural and budgetary constraints that delay technology adoption (Academy of Business Studies, 2024). These shortcomings impede sustainability priorities, such as sustainable cities (SDG 11) and climate resilience (SDG 13).

Beyond innovation and infrastructure, inconsistent adherence to governance frameworks such as the Nigerian Codes of Corporate Governance (NCCG) undermines transparency, accountability, and stakeholder trust. Despite the NCCG's emphasis on sustainability as a cornerstone of corporate performance, non-compliance remains a significant challenge across industries (Lawuyi, 2022; NCCG, 2018). This lack of compliance erodes the credibility of governance frameworks, diminishing their potential to support SDGs such as reduced inequalities (SDG 10) and sustainable economic growth (SDG 8).

Another systemic challenge is the inadequate development of public-private partnerships (PPPs), which are vital for financing and executing large-scale infrastructure projects. Nigeria's significant deficits in energy, transportation, and digital infrastructure hinder corporate and national sustainability efforts. Robust PPPs are essential to address these gaps, scale successful initiatives, and drive industrial and national prosperity (Ogunsola et al., 2024).

Corporate strategies that address these systemic challenges can directly contribute to sustainable development by aligning business practices with the SDGs. For example, deliberate investments in renewable energy, gender-inclusive workforce policies, and waste reduction can yield measurable progress toward achieving both corporate and national goals. This paper introduces a conceptual framework that demonstrates how corporations can leverage their strategies to address these barriers and achieve SDG alignment. The study aims to provide actionable insights for driving inclusive growth, environmental stewardship, and social equity by integrating stakeholder interests, fostering collaboration, and emphasizing governance compliance.

This study offers a comprehensive framework that links corporate strategy with the Sustainable Development Goals (SDGs), providing practical insights for a wide range of stakeholders. For corporate leaders, it outlines a structured approach to embedding sustainability into core business models, encouraging innovation, ethical practices, and long-term resilience. Policymakers are also equipped with recommendations to close governance gaps and align national regulations with global sustainability standards. These include financial incentives for green initiatives and stricter enforcement of corporate governance codes such as the Nigerian Code of Corporate Governance (NCCG), fostering an environment conducive to sustainable enterprise.

Moreover, the study advances theoretical discourse by applying Stakeholder Theory to the context of corporate sustainability in emerging economies, offering a foundation for future interdisciplinary research. Civil society organizations and local communities benefit from its emphasis on inclusive growth and corporate social responsibility, while investors gain valuable perspectives on sustainability-linked financial decisions. By highlighting corporate compliance with SDGs and responsible governance, the study reinforces investor confidence and promotes green financing opportunities. Overall, it serves as a strategic tool for driving corporate transformation, influencing policy reforms, informing advocacy, and contributing meaningfully to the realization of the 2030 Agenda for Sustainable Development.

This study seeks to answer the following key questions:

- i. How can corporations integrate the three pillars of sustainability (economic, social, and environmental) into their strategies to support the SDGs?
- ii. What role does corporate governance play in aligning corporate practices with SDG objectives?
- iii. What contributions have Nigerian corporations made toward key SDGs, and what gaps remain?
- iv. What policy recommendations can enhance corporate contributions to SDGs in Nigeria?

LITERATURE REVIEW

This literature review explores key concepts including corporate strategy, sustainability, corporate governance, and national development and critically examines existing studies that bridge these areas. It also identifies prevailing challenges and emerging solutions, particularly within the Nigerian context, thereby laying the groundwork for a nuanced investigation into the strategic role of businesses in advancing the SDGs.

Corporate strategies refer to overarching plans and actions that guide a company's long-term objectives, competitive positioning, and stakeholder engagement (Porter, 1985). These strategies are pivotal for ensuring value creation and sustainability. According to Elkington (1998), effective corporate strategies must integrate economic, social, and environmental dimensions to align with global sustainability standards. In Nigeria, strategic focus areas include renewable energy adoption, inclusive workforce development, and resource-efficient production processes.

The SDGs provide a comprehensive blueprint for achieving a sustainable and equitable future. They emphasize inclusive growth, environmental stewardship, and social equity (Sachs et al., 2020). In Nigeria, achieving SDG 7 (clean energy) and SDG 10 (reduced inequalities) is crucial for addressing socio-economic challenges. Businesses play a transformative role by leveraging innovation, investment, and collaboration to align their operations with SDG objectives.

Business practices encompass the operational and ethical standards guiding corporate activities. Integrating sustainability into these practices involves transparent governance frameworks, ethical supply chain management, and socially responsible investments (Carroll & Shabana, 2010).

National development refers to holistic socio-economic progress that improves citizens' quality of life. Key drivers include sustainable industrialization, infrastructure development, and human capital investment (World Bank, 2020). Corporate contributions in renewable energy and skill development directly support Nigeria's national development objectives, creating synergies between corporate strategies and the SDGs (IRENA, 2023; Minas et al., 2024).

Corporate governance (CG) is widely acknowledged as a critical mechanism for enhancing corporate accountability, transparency, and long-term sustainability. In Nigeria, the evolution of corporate governance

frameworks most notably the 2018 Revised Nigerian Code of Corporate Governance (NCCG) has sought to align corporate behaviour with global best practices. These reforms are crucial for shaping corporate strategies that support the attainment of the United Nations Sustainable Development Goals (SDGs). The 2018 NCCG was issued by the Financial Reporting Council of Nigeria to unify and strengthen corporate governance practices across all sectors. The code replaced previous sector-specific codes and emphasized principles such as board effectiveness, ethical leadership, accountability, stakeholder management, and sustainability reporting.

The 2018 Revised Nigerian Code of Corporate Governance (NCCG) introduced key reforms aimed at enhancing transparency, accountability, and stakeholder engagement across all sectors. Scholars such as Ozili, Uadiale, and Edeigba (2023) note that while the code strengthens board oversight and promotes ethical leadership, it underestimates the risk of board power misuse and lacks sufficient mechanisms for stakeholder and academic input. These limitations may hinder firms from embedding sustainability in their governance models. Empirical studies also show mixed results regarding the impact of governance variables like board size and independence on firm performance in Nigeria, raising concerns about the practical effectiveness of governance reforms in promoting responsible corporate behaviour.

Nevertheless, the NCCG provides a valuable foundation for aligning corporate strategies with the United Nations Sustainable Development Goals (SDGs), especially those focused on institutional integrity, climate action, and responsible consumption. Drawing lessons from Ghana, Saeed et al. (2025) emphasize the importance of mandatory ESG disclosures and board-level commitment to SDG integration. In the Nigerian context, this calls for regulatory incentives, sustainability-linked performance metrics, and capacity-building for board members. Strong governance practices when effectively implemented can enable Nigerian firms to balance profitability with societal progress and play a pivotal role in advancing national and global development goals.

The alignment of corporate strategies with sustainability goals has gained significant academic and practical attention, particularly since the adoption of the 2030 Agenda for Sustainable Development. Scholars like Domingo-Posada, González-Torre, and Vidal-Suárez (2024) highlight the rapid increase in research exploring this intersection, noting the lack of systematic approaches to integrate economic dimensions with governance and societal contributions. Their work emphasizes the need for comprehensive frameworks that guide organizations in embedding sustainability into their long-term strategies, thus providing a foundation for further exploration in this field.

Stakeholder engagement plays a pivotal role in aligning corporate strategies with the Sustainable Development Goals (SDGs). Pirzada, Ahmed, and Moens (2023) argue that transparent governance and responsible resource management are essential for embedding sustainable development into corporate practices. The incorporation of diverse stakeholder interests ensures that corporate actions address critical societal and environmental challenges while maintaining profitability. This perspective aligns with the growing recognition that sustainability is not solely a corporate responsibility but a shared societal imperative.

Higher education institutions (HEIs) have been identified as critical enablers of sustainable development. Fleacă, Fleacă, and Maiduc (2018) demonstrate how HEIs align their operational models with SDGs, acting as incubators for knowledge dissemination and innovation. By integrating sustainability principles into research, education, and community outreach, HEIs provide a blueprint for corporations seeking to incorporate sustainability into their strategies. Furthermore, leveraging global frameworks such as ISO 26000 has helped organizations enhance transparency and ethical practices, forming a strong foundation for corporate social responsibility (CSR).

Despite these advancements, significant challenges persist in the practical implementation of sustainability

strategies. Balukja (2024) highlights barriers such as regulatory complexities and organizational resistance to change, which hinder progress in aligning corporate strategies with SDGs. Addressing these challenges requires actionable strategies that foster organizational flexibility and regulatory clarity. Additionally, global reporting standards, such as the Global Reporting Initiative (GRI), offer consistent tools to measure and report sustainability performance, ensuring accountability and facilitating progress tracking.

Technological innovation is another crucial driver for aligning corporate strategies with sustainability goals. Fleacă et al. (2018) emphasize the potential of emerging technologies, such as blockchain and artificial intelligence, to optimize resource use and enhance supply chain transparency. These advancements enable organizations to tackle sustainability challenges effectively, creating pathways for integrating innovative solutions into corporate operations. Alongside technological adoption, public-private partnerships (PPPs) play a vital role in addressing systemic challenges like infrastructure deficits. Domingo-Posada et al. (2024) underscore the importance of collaborative frameworks between governments and corporations in scaling sustainable initiatives and ensuring their long-term viability.

Governance remains a critical pillar for aligning corporate strategies with sustainability. Strong governance frameworks, such as the Nigerian Codes of Corporate Governance (NCCG, 2018), are essential for ensuring accountability and compliance with sustainability provisions. Pirzada et al. (2023) stress the need for robust governance mechanisms to foster transparency and build trust among stakeholders. However, concerns over superficial commitments to sustainability, termed “SDG-washing,” highlight the need for stricter evaluation mechanisms to distinguish genuine efforts from symbolic gestures.

In conclusion, this review reveals a robust yet fragmented body of literature addressing the alignment of corporate strategies with sustainability goals. While significant progress has been made in areas such as stakeholder engagement, governance, and technological innovation, gaps remain in integrating context-specific challenges and opportunities, particularly in developing economies like Nigeria. This paper contributes to the literature by addressing these gaps through a focus on Nigeria's unique socio-economic conditions and systemic barriers. By proposing actionable strategies that emphasize innovation, compliance, and collaboration, this study advances theoretical and practical understanding of how corporations can align their strategies with SDGs to foster national prosperity.

THEORETICAL FRAMEWORK: STAKEHOLDER THEORY

Stakeholder Theory, introduced by Freeman (1984), emphasizes balancing the diverse interests of stakeholders including employees, customers, suppliers, communities, and the environment in corporate decision-making processes. The theory posits that businesses should create value not only for shareholders but for all stakeholders whose well-being is affected by corporate activities. By doing so, organizations ensure long-term sustainability and societal well-being.

This theory provides a foundational lens for understanding how corporate strategies can align with the Sustainable Development Goals (SDGs). The interconnectedness between business success and societal well-being underscores the responsibility of corporations to integrate economic, social, and environmental priorities into their operations. Stakeholder Theory challenges the traditional profit-maximization paradigm by advocating for a balanced approach that considers the interests of all stakeholders.

In the Nigerian context, Stakeholder Theory highlights critical areas where corporate engagement can drive sustainable development. For instance, corporations can address inequality by promoting inclusive workforce policies, foster environmental stewardship through renewable energy projects, and contribute to governance improvements by adopting transparent and ethical practices. This approach is especially relevant given Nigeria's

systemic challenges, including weak infrastructure, limited innovation, and non-compliance with governance standards.

Aligning with the aim of this paper, Stakeholder Theory underscores the need for corporations to actively engage with diverse stakeholders to overcome these systemic barriers. By adopting stakeholder-centric strategies, businesses can contribute to national prosperity while achieving the 2030 Agenda. This theoretical foundation guides the study's exploration of how corporations in Nigeria can align their strategies with SDGs through innovation, compliance, and collaboration.

CASE STUDIES

Dangote Cement: Energy-Efficient Technologies (SDG 7)

Dangote Cement has implemented energy-efficient technologies to reduce its carbon footprint and enhance operational efficiency. The company invested in alternative energy sources such as natural gas, waste-derived fuels, and biomass to replace traditional fossil fuels. This effort aligned with SDG 7 (Affordable and Clean Energy) which promotes cleaner and more sustainable energy solutions in its manufacturing processes (Dangote Cement, 2022).

Access Bank: Gender Inclusion and Workforce Development (SDGs 5 and 8)

Access Bank has championed gender inclusion and workforce development through initiatives like the Womenpreneur Program, which empowers female entrepreneurs with financial support, business training, and mentorship. These efforts align with SDG 5 (Gender Equality) and SDG 8 (Decent Work and Economic Growth) (Access Bank, 2022).

Oando PLC: Renewable Energy Initiatives (SDGs 7 and 13)

Oando PLC has embraced renewable energy projects, including solar energy solutions for rural electrification, aligning with SDG 7 (Affordable and Clean Energy) and SDG 13 (Climate Action). The company also focuses on reducing carbon emissions through cleaner energy technologies (Oando PLC, 2022).

FRAMEWORK ALIGNING CORPORATE STRATEGIES WITH SDGs

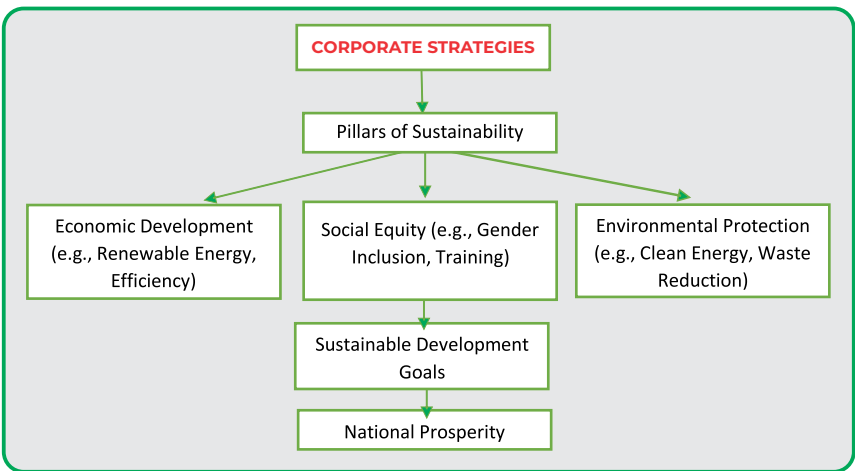


Figure 1 Source: (Authors' design, 2025)

Conceptual Framework for Aligning Corporate Strategies with Sustainable Development Goals (SDGs).

This framework illustrates the relationships among corporate strategies, the three pillars of sustainability (economic, social, and environmental), the SDGs, and their contribution to national prosperity.

At the top level, **corporate strategies** are defined as deliberate actions and long-term plans that guide a company's objectives, stakeholder alignment, and competitive positioning. These strategies serve as the foundation for integrating sustainability into business practices, forming the basis for aligning organizational goals with societal and environmental needs. By prioritizing sustainability in their strategic plans, corporations can address critical challenges and leverage opportunities to foster sustainable development.

The framework then emphasizes the **three pillars of sustainability** as the core dimensions of alignment. These pillars (economic development, social equity, and environmental protection) are interdependent and crucial for achieving sustainable growth:

- i. **Economic Development** focuses on growth-oriented strategies that balance profitability with responsible resource utilization. Examples include investments in renewable energy, energy-efficient technologies, and infrastructure development. Corporate actions under this pillar contribute to SDGs such as SDG 7 (Affordable and Clean Energy) and SDG 9 (Industry, Innovation, and Infrastructure).
- ii. **Social Equity** ensures inclusivity and equality in corporate practices and operations. Initiatives like workforce diversity programs, gender inclusion strategies, and vocational training for marginalized groups align with SDG 5 (Gender Equality) and SDG 8 (Decent Work and Economic Growth). These efforts promote fairness and cohesion within society.
- iii. **Environmental Protection** involves mitigating environmental impact through sustainable practices, such as adopting renewable energy, reducing waste, and implementing pollution control measures. These activities directly address SDG 13 (Climate Action) and SDG 12 (Responsible Consumption and Production), ensuring ecological sustainability.

At the lower middle level, the **Sustainable Development Goals (SDGs)** provide a universal framework for addressing global challenges through inclusive, equitable, and sustainable development. The framework demonstrates how corporate strategies aligned with the three pillars of sustainability can target specific SDGs effectively. For instance, economic strategies address clean energy and innovation, social strategies promote gender equality and decent work, and environmental strategies tackle climate action and sustainability.

At the bottom level, **national prosperity** is defined as holistic socio-economic progress that improves quality of life, reduces inequalities, and ensures long-term environmental sustainability. By aligning corporate strategies with SDGs, companies contribute to national prosperity through:

- i. Economic growth driven by responsible and innovative industries.
- ii. Social cohesion fostered by inclusive corporate practices.
- iii. Environmental preservation supported by sustainable operations.

The framework further incorporates interconnections represented by arrows, illustrating the flow of influence. Corporate strategies initiate the alignment process by addressing the three pillars of sustainability. These pillars collectively influence how companies align their operations with specific SDGs. Ultimately, the successful alignment of corporate strategies with SDGs contributes to achieving national prosperity. Additionally, a feedback loop exists, where achieving SDG-related milestones inspires further refinements in corporate strategies, reinforcing the framework's cyclical nature.

This framework provides a holistic approach by combining corporate strategies with the three pillars of sustainability, offering a structured pathway for companies to contribute meaningfully to the SDGs. It connects theoretical concepts (sustainability, SDGs, corporate governance) with actionable steps for corporations. Particularly in Nigeria, the framework underscores how addressing local challenges, such as infrastructural deficits and gender disparities, through sustainable corporate practices, can drive national development.

FINDINGS AND RECOMMENDATIONS

Findings

The findings of this study reveal significant insights into how corporate strategies align with the Sustainable Development Goals (SDGs) and their contribution to national prosperity. First, the integration of the three pillars of sustainability (economic development, social equity, and environmental protection) is pivotal for achieving sustainable corporate practices. Companies that invest in renewable energy, infrastructure development, and responsible resource utilization contribute to economic growth while aligning with SDGs 7 and 9. Simultaneously, initiatives promoting workforce diversity, gender inclusion, and vocational training address social equity by targeting SDGs 5 and 8. Environmental sustainability is achieved through measures such as waste reduction and renewable energy adoption, directly impacting SDGs 12 and 13.

Corporate governance emerged as a critical enabler for aligning corporate strategies with SDGs. The Nigerian Code of Corporate Governance (NCCG, 2018) emphasizes transparency, accountability, and ethical practices, providing a robust framework for sustainability. However, inconsistent compliance undermines its effectiveness, highlighting the need for stricter enforcement and incentivization mechanisms. Additionally, the contributions of Nigerian corporations to SDGs are evident through case studies such as Dangote Cement's energy-efficient technologies and Access Bank's gender inclusion initiatives. Despite these contributions, gaps remain, particularly in innovation, governance compliance, and public-private partnerships (PPPs).

Recommendations

To address these findings, the study proposes actionable recommendations that align corporate strategies with SDGs and enhance their impact on national development.

Strengthening Renewable Energy Policies: The lack of investment and clear regulatory frameworks in the renewable energy sector necessitates immediate action. Introducing tax incentives and subsidies can encourage private-sector participation, while streamlining regulatory frameworks will facilitate the approval and implementation of renewable energy initiatives. These measures align corporate efforts with SDG 7 (Affordable and Clean Energy) and drive sustainable energy solutions.

Promoting Vocational Training and Inclusive Workforce Development: Workforce development gaps, particularly among youth and women, hinder progress toward SDG 8 (Decent Work and Economic Growth). Establishing robust training programs and collaborating with academic institutions to align curricula with industry needs will enhance employability and foster inclusivity. These efforts will ensure a skilled workforce capable of meeting market demands and advancing national prosperity.

Enhancing Infrastructure Development through Public-Private Partnerships: Infrastructure deficits remain a barrier to sustainable development. Leveraging public-private partnerships (PPPs) is essential for financing and executing large-scale infrastructure projects. Priority should be given to initiatives that improve energy access, transportation, and digital connectivity, thereby supporting corporate and national sustainability goals. This aligns with SDG 9 (Industry, Innovation, and Infrastructure) and addresses systemic infrastructural challenges.

Fostering Corporate Compliance and Ethical Practices: Non-compliance with governance codes such as the NCCG undermines transparency and accountability. Regular independent audits and the recognition of companies that adopt sustainable and ethical practices can incentivize adherence to governance frameworks. These measures will strengthen the governance landscape and promote a culture of sustainability within the corporate sector.

Supporting Research and Development (R&D): Innovation-driven projects are critical for addressing systemic challenges and advancing corporate sustainability. Allocating resources to R&D in sectors such as ICT, agriculture, and renewable energy, and fostering collaboration between corporations and academic institutions, will accelerate technological advancements. This supports SDGs and addresses context-specific challenges, particularly in developing economies like Nigeria.

Addressing Economic Barriers through Financial Innovations: Economic barriers, such as limited access to capital for sustainable projects, hinder corporate contributions to SDGs. Developing financial instruments like green bonds and impact investments can attract long-term capital, while risk-sharing mechanisms can mitigate uncertainties for corporations. These strategies align with SDGs 12 (Responsible Consumption and Production) and 13 (Climate Action) and encourage sustainable investments.

CONCLUSION

The findings and recommendations outlined in this study provide actionable pathways for aligning corporate strategies with sustainability goals. By addressing renewable energy policies, workforce development, infrastructure deficits, governance compliance, innovation, and economic barriers, Nigerian corporations can overcome systemic challenges and contribute meaningfully to national prosperity. These measures, grounded in the findings of this study, ensure that corporate practices not only drive economic growth but also advance social equity and environmental stewardship, fulfilling the objectives of the 2030 Agenda.

Future research should explore the applicability of the proposed framework in other developing economies, especially those facing similar systemic challenges such as infrastructural deficits, innovation barriers, and governance issues. Comparative studies across regions can provide insights into adapting corporate strategies to diverse socio-economic contexts. Additionally, investigating the long-term impacts of stakeholder integration on sustainability outcomes can enhance the understanding of collaborative approaches to achieving the SDGs.

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MODERATING EFFECT OF AUDIT COMMITTEE EXPERTISE ON SUSTAINABILITY DISCLOSURE AND THE VALUE OF LISTED NON-FINANCIAL COMPANIES IN NIGERIA

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Abstract

This study examined the moderating effect of audit committee financial expertise on the relationship between sustainability disclosure and the value of listed non-financial firms in Nigeria. The study adopted ex-post facto research design. The population of the study consisted of the 111 non-financial companies listed on the Nigeria Exchange Group (NGX) as at 31st December, 2023. The study employed a census approach. The data used for this study was sourced from the financial report of the sampled non-financial firms in Nigeria. The study employed multiple regression analysis technique to test the hypotheses. The study revealed that, Audit committee financial expertise has positive and significant moderating effect on the relationship between social disclosure and the value of listed non-financial companies in Nigeria. Audit committee financial expertise has negative and insignificant moderating effect on the relationship between environmental disclosure and the value of listed non-financial companies in Nigeria. Audit committee financial expertise has positive and significant moderating effect on the relationship between governance disclosure and the value of listed non-financial companies in Nigeria. Audit committee financial expertise has positive and significant moderating effect on the relationship between economic disclosure and the value of listed non-financial companies in Nigeria. The study concluded that companies with audit committees possessing strong financial knowledge are more likely to adopt and disclose practices that positively affect their value. The study recommended that non-financial companies in Nigeria should prioritize the inclusion of audit committee members with robust financial and accounting expertise to ensure comprehensive and transparent disclosures.

Keywords:

Budget Implementation,
Corporate Income Tax,
Custom and Excise Duties,
Tax Revenue, Value Added
Tax

INTRODUCTION

In today's globalized economic environment, firms strive to maximize their value. This goal is rooted in the understanding that increasing a firm's value ultimately enhances shareholder wealth, often regarded as a primary purpose of a company's existence. However, this objective frequently creates a divergence of interests between the company and shareholders, as shareholders typically focus on short-term gains while companies must consider their long-term survival. This short-term focus often drives economic activities centered solely

on profit maximization, neglecting social and environmental impacts, which leads to issues such as pollution, environmental degradation, global warming, and social inequality (Elkington, 2004). In response, global awareness of sustainable development encourages stakeholders to align development activities with the principles of sustainability. Sustainable development is defined as meeting the needs of the present without compromising the ability of future generations to meet their needs (WCED, 1987). This principle emphasizes a balance between economic growth, social welfare, and environmental protection.

Over recent years, non-financial corporate performance has gained increasing attention from investment professionals who realize that profitability alone is insufficient for a firm's long-term growth. Engaging in sustainability activities and reporting on them has become a common practice globally. Beyond economic and operational considerations, sustainability reporting integrates environmental and social factors, thereby enhancing corporate transparency, strengthening risk management, promoting stakeholder engagement, and improving communication (GRI, 2011). While firms are traditionally perceived as pursuing profit maximization, sustainability reporting reflects their commitment to transparency and accountability (Godha & Jain, 2015). Though sustainability initiatives may involve significant short-term costs, they offer substantial long-term benefits, including enhanced reputation and stakeholder trust (Bhatia & Tuli, 2015).

Basically, as human populations grow and consumption intensifies, environmental resources continue to deteriorate. Vlek and Steg (2007) highlight concerns such as biodiversity loss, freshwater scarcity, overfishing, global warming, air and water pollution, and environmental degradation. Thus, non-compliance with environmental sustainability exacerbates resource depletion, leading to social and economic instability. Organizations, being central to these issues, must also be central to their solutions. This passivity contributes to social injustices, ecological harm, and economic instability, which jeopardize future generations. Consequently, stakeholders increasingly demand corporate responsibility in areas such as environmental protection, human rights, and product safety (Aondoakaa, 2015).

Corporate sustainability reporting (CSR) involves firms disclosing their environmental, social, economic, and governance measures, as well as their ability to manage associated risks (Ballou, Heitger & Landes, 2006). Previously non-existent, CSR has now become a vital component of corporate reporting due to rising stakeholder expectations. Meeting these expectations is critical for aligning sustainability reporting with strategic business objectives. While maximizing shareholder value remains a priority, companies cannot achieve this in the long term without addressing the interests of other stakeholders (Ballou, Heitger & Landes, 2006). However, firms may hesitate to disclose sustainability information due to uncertainties about market reactions. Positive reception may boost firm value, while unfavorable responses could harm the firm's reputation.

Environmental reporting specifically addresses the impact of processes, products, and services on air, water, land, biodiversity, and human health (Barnea, Heinkel & Kraus, 2013). Social and environmental responsibility is increasingly recognized as a long-term value creation strategy for all stakeholders, not just shareholders (Ghelli, 2013). This shift has prompted investment institutions to adopt socially responsible investing, where environmental and social considerations influence investment decisions. According to the theory of signal (Spence, 1973), sustainability disclosures serve as signals to investors, influencing their decisions. Corporate governance plays a critical role in sustainability issues by fostering relationships among management, the board, shareholders, and stakeholders. Effective governance ensures management acts in the company's best interest, minimizing agency costs and enhancing performance (Ganescu & Gangone, 2012).

Economic disclosures, another dimension of sustainability reporting, address a firm's impact on local, national, and global economic systems. These disclosures, which include profitability and economic contributions to communities, demonstrate a firm's commitment to sustainable economic development (Tarigan & Hatane,

2014). They also reassure stakeholders of the firm's competitive resources and low-risk operations. Furthermore, the effectiveness of audit committees in overseeing sustainability reporting has garnered significant attention. In the wake of corporate frauds involving firms like Enron and Parmalat, regulatory reforms worldwide have emphasized strengthening corporate governance mechanisms, particularly the audit committee's role in monitoring disclosures (Carcello & Neal, 2003).

The presence of accounting and finance experts on audit committees is crucial for addressing agency conflicts and ensuring transparency. These experts enhance internal control mechanisms and financial reporting quality, positively influencing market perceptions and firm value (Mangena & Pike, 2005; Bedard et al., 2004). McMullen and Raghunandan (1996) further assert that these experts raise awareness of internal control and financial reporting issues. As stakeholders increasingly demand accountability and transparency, audit committees play a pivotal role in aligning non-financial disclosures with stakeholder expectations. This alignment reinforces the long-term strategic objectives of firms, ensuring sustainable growth and value creation.

Many companies have since reassessed their corporate purpose, considering how to drive long-term sustainability by addressing environmental, social, economic, and governance challenges (Wiwik, 2020). The critical role of the board of directors and its committees in ensuring corporate transparency around sustainability initiatives remains a central issue in discussions on the Global Reporting Initiative (GRI) framework. Governance, in this context, refers to the structures, policies, and practices employed by organizations to assign responsibilities and decision-making rights, forming the foundation for accountability and credibility (Emeka-Nwokeji & Osisioma, 2019).

Investors and other stakeholders are increasingly pressuring companies to incorporate sustainability objectives into their strategies and decision-making processes to create long-term value. While some companies are at the early stages of integrating sustainability into their operations, others have implemented mature systems that identify, monitor, measure, and communicate sustainability factors to stakeholders. Moving from a reactive to a proactive and integrated approach to sustainability remains a critical challenge for many companies. Recent events, including the pandemic and social justice movements, have accelerated the adoption of sustainability frameworks in corporate strategies, prompting companies to address sustainability issues more intentionally and holistically (Wiwik, 2020).

Research highlights the benefits of sustainability reporting, such as increased operational efficiency, higher employee retention, and reduced cost of capital (Ahmed & Manab, 2016; Al-Shaer & Zaman, 2016; García-Sánchez et al., 2019). Following the GRI framework, sustainability reporting encompasses four main categories: economic, environmental, social, and governance indicators. Despite the recognized benefits, identifying specific determinants of sustainability reporting remains a significant concern for academics, practitioners, and policymakers.

Extant literatures (Barnea & Rubin, 2010; Tan & Wilson, 2013; Yossi, 2018; Eka et al., 2019; Wiwik, 2020; Yang et al., 2020; Wu & Shen, 2020) have explored the extent of sustainability reporting, primarily in developed economies, but there is limited empirical evidence on its impact on firm value, particularly in developing countries. In Nigeria, research on sustainability reporting and firm value in the non-financial sector remains sparse. Studies such as those by Olayinka and Temitope (2011), Nze et al. (2016), Ahmad (2017), Amaechi and Nwankwe (2017), Asoquo, Dada, and Onyeogaziri (2018), and Uwueigbe (2018) have reported inconsistencies in their findings, often omitting key variables such as the GRI disclosure index. Additionally, many studies have used proxies like ROA or ROE for firm value, whereas this study employs Tobin's Q, a more comprehensive measure.

This research is unique in its consideration of audit committee financial expertise as a moderating factor in the

relationship between sustainability disclosure and firm value. Audit committees play a pivotal role in the financial reporting process, and their expertise is crucial in enhancing transparency and accountability. To the best of the researchers' knowledge, the moderating effect of audit committee financial expertise on the relationship between sustainability disclosure and firm value has not been explored in the Nigerian context. This study, therefore, extends prior research by examining this relationship specifically in listed non-financial companies in Nigeria.

LITERATURE REVIEW

Conceptual Review

Sustainability Disclosure

Sustainability reporting lacks a universally accepted definition but is broadly understood as the disclosure of a company's economic, environmental, and social performance. Corporate sustainability reports, which detail a company's environmental, social, and governance (ESG) activities, have been an important focus since their emergence in the late 1980s (Global Reporting Initiative, 2012). These reports not only help organizations reduce costs and adapt to change for long-term sustainability but also fulfill legal requirements and meet stakeholders' informational needs, including those of regulators and the public. The Global Reporting Initiative (2011) and Johari and Komathy (2019) emphasize that sustainability reporting involves measuring, disclosing, and being accountable to both internal and external stakeholders, aligning this activity with the organization's vision, mission, and strategic goals.

Sustainability reporting is also seen as a subset of financial accounting focused on non-financial disclosures that address a company's societal, environmental, and economic impact (Hossain, 2020). It is sometimes referred to as social or corporate social responsibility accounting and provides information crucial for management decision-making and stakeholder engagement. Omoloso et al. (2020) describe it as a voluntary activity that enhances an organization's reputation and attracts investors. By presenting sustainability as both a process and a product, these definitions highlight its importance in corporate transparency and strategic planning, offering tangible benefits for organizations and their stakeholders (Hossain, 2020). This study conceptualizes sustainability reporting as the practice of measuring, disclosing, and being accountable to internal and external stakeholders for an organization's economic, environmental, and social performance, with the aim of achieving sustainable development goals.

Social Disclosure

Social disclosure practices refer to activities undertaken by companies to foster strong relationships with stakeholders while indirectly creating value for shareholders. Companies' communication of their social responsibility initiatives plays a critical role in maintaining and enhancing relationships with stakeholders. Social reporting is increasingly recognized worldwide and is often associated with related concepts like corporate sustainability, sustainable development, and corporate responsibility. Social responsibility practices involve the intentional integration of public interests into corporate decision-making while adhering to the triple bottom line framework of People, Planet, and Profit (Harpreet, 2009). Branco and Rodrigues (2008) define these practices as methods organizations use to inform and assure society that they are meeting social expectations. Social reporting acts as a tool for companies to demonstrate accountability by outlining their future vision and reviewing past performances. Effectively communicating social initiatives can lead to reputational benefits and foster trust-based relationships with the communities in which companies operate (Grahova, 2010). Similarly, Gray, Javad, Power, and Sinclair (2001) describe social practices as the process of conveying the social impacts of a company's economic actions to relevant societal groups. Akano (2013) further notes that organizations

leverage corporate social responsibility disclosures as a strategy to legitimize their activities in the eyes of the public.

Environmental Disclosure

Environmental reporting involves the disclosure of information on the effects of a company's processes, products, and services on air, water, land, biodiversity, and human health (Barnea, Heinke & Kraus, 2013). It addresses the impacts of a company's activities on the natural environment, including ecosystems, land, air, and water, and reflects a broader commitment to social and environmental responsibility. This approach aims to create long-term value not just for shareholders but for all stakeholders by managing risks and seizing opportunities (Chirieleison, 2004; Ghelli, 2013). As awareness of social and environmental responsibility grows, many investment institutions now factor it into their decisions, adopting socially responsible investing (SRI). The disclosure of social and environmental impacts is a means of communicating the consequences of an organization's economic activities to specific groups and society as a whole (Gray, 1987). Following the signal theory (Spence, 1973), such disclosures serve as signals to external stakeholders, particularly investors, influencing their decisions.

Environmental disclosure provides insights into a company's behavior towards the environment and its associated economic consequences, encompassing both financial and non-financial information (Panigrati, 2015). Ejoh et al. (2014) describe it as a collection of information about a company's past, present, and future environmental activities, while Ong et al. (2016) view it as an annual report detailing environmental objectives, policies, and impacts. This practice helps companies capture public perception of their operations and serves as a communication bridge between the company and stakeholders (Dibia & Onwuchekwu, 2015). Abubakar et al. (2017) emphasize the necessity of such disclosures due to the significant environmental consequences of corporate activities, highlighting the critical role they play in fostering transparency and accountability.

Governance Disclosure

Corporate governance reporting practices involve the procedures and structures used to manage an organization's operations and affairs to enhance business success, fulfill corporate responsibilities, and achieve long-term shareholder value while considering the interests of other stakeholders (Said et al., 2009). Corporate governance mechanisms ensure that management acts in the company's best interests, minimizing agency costs and improving performance (Ganescu & Gangone, 2012). Effective governance enhances oversight, supports efficient operations (Krafft, 2013), and positively impacts financial performance. The board of directors plays a critical role in promoting corporate social responsibility (CSR) (Zahra, 1989) and fostering ethical practices throughout the organization (Al-Malkawi & Bhatti, 2014). In cases of ownership separation, the board represents shareholders, ensuring assets are used to maximize value, monitoring management effectiveness, ensuring legal compliance, and preventing misconduct. Good corporate governance is essential to safeguarding stakeholder interests and maintaining accountability (Al-Malkawi et al., 2014).

Economic Disclosure

Economic reporting focuses on disclosing information related to payroll expenses, job creation, labor productivity, outsourcing costs, research and development, and investments in training and human capital (Nwobu, 2015). It highlights the economic impacts of a company's activities on its stakeholders and the broader economic systems at local, national, and global levels. Additionally, economic disclosures include company profitability, which directly influences a firm's value. Profitability, as the ultimate goal of management policies and financial decisions, demonstrates the company's ability to achieve sustained operations and attract fair

investments (Bringham et al., 2001; Endri, 2018). By consistently showcasing profitability, companies can secure competitive capital resources and maintain low-risk profiles, as well as demonstrate their contributions to local economic development (Tarigan & Hatane, 2014). Economic reporting, particularly in sustainability disclosures, builds trust and strengthens relationships with investors and creditors, enhancing corporate reputation and improving market performance over time.

Audit Committee Financial Expertise

Audit committee financial expertise refers to the presence of individuals within an audit committee who possess specialized knowledge and experience in accounting, financial management, or related areas, which enhances the committee's ability to oversee financial reporting and ensure audit quality. Originating from recommendations like those of the Blue-Ribbon Committee (1999), the concept highlights the critical role of expertise in improving the effectiveness of audit committees as a corporate governance mechanism. Financial expertise can be technical, such as accounting qualifications or auditing experience, or supervisory, involving roles that oversee financial statement preparation. Regulatory frameworks, such as Nigeria's SEC Codes (2011, 2018) and the US SEC, mandate that at least one audit committee member must have financial expertise to enhance reporting quality, mitigate agency problems, and promote stakeholder confidence. While research supports the positive impact of financial expertise on audit quality, there is debate about whether technical or supervisory expertise is more effective, with evidence suggesting that accounting expertise has a more significant effect on audit quality. Overall, financial expertise is essential for reducing information asymmetry, detecting earnings management, and improving the credibility and transparency of financial disclosures.

Firm Value

Firm value refers to the overall worth of a company as perceived by investors and stakeholders, reflecting its financial health, performance, and potential for growth. It is a crucial indicator of shareholder prosperity and is influenced by factors such as earnings power, asset management, debt policy, and market dynamics. Measurements like Tobin's Q, market capitalization, and stock prices are commonly used to assess firm value, with Tobin's Q providing insights into the relationship between market value and asset replacement costs. Firm value is affected by internal elements like organizational structure, human resources, and technology, as well as external factors like market competition and macroeconomic conditions. Investors prioritize firm value when making investment decisions, as it represents both potential returns and the firm's stability in the market.

Empirical Review

Ajayi and Olamide (2024) examine the effect of sustainability disclosures on firm value within Nigeria's oil and gas industry. Given the environmental challenges faced by the sector, the study focuses on how corporate disclosures regarding environmental and social impacts influence investor perceptions and, ultimately, firm value. The authors use a difference-in-differences (DID) approach to analyze the effects of sustainability disclosures on firm value, specifically looking at Nigerian oil and gas companies from 2015 to 2022. The study measures firm value using stock market performance and financial ratios. The study finds that sustainability disclosures have a significant positive impact on firm value, particularly in the oil and gas sector. The study is limited to oil and gas sector while the current study is on all non-financial companies.

Oladpo (2022) investigates how sustainability reporting, particularly environmental disclosures, impacts the value of Nigerian firms. The author focuses on whether detailed sustainability disclosures affect investor decisions and, in turn, firm valuation. Using data from Nigerian firms listed on the Nigerian Stock Exchange (NSE) between 2016 and 2021, the study employs regression analysis to examine the relationship between the extent of sustainability disclosures and firm market value. The study finds that there is a statistically significant

positive relationship between sustainability reporting and firm value. Firms that provided more detailed sustainability reports, especially on environmental and social governance issues, tended to have higher stock prices and better market valuation.

Azam and Wang (2021) examined the influence of the characteristics of the audit committee on Palestinian firms' value. The research explores precisely the effect on the Audit Committee characteristics' efficiency, namely, independence, expertise, evaluating the relationship among dependent and independent variables. Secondary data collected from a list of companies were registered in the Palestine Stock Exchange from 2011 to 2018. Individual variables considered are the independence & expertise of the audit committee, whereas the ROA is employed as the dependent variable as an indicator of a firm's value. The results showed that the Audit Committee's independence & expertise substantially positive with ROA. The study concluded that the audit committee's characteristics are enhancing firm performance. This current study measures firm value using Tobins Q given its superiority in measuring the value of a firm devoid bias from managerial opportunistic behaviour instead of ROA used in the previous study.

Yang et al. (2020) examine the impact of environmental information disclosure on the firm value of listed manufacturing firms: evidence from china. Based on a panel dataset composed of the listed manufacturing firms in China during 2006–2016, this paper used the difference-in-differences (DID) model and the propensity score matching (PSM) method to investigate whether the Environmental Information Disclosure Measure (for Trial Implementation; EIDMT) affects the firm value. The results showed that EIDMT exerts a significant impact on the listed manufacturing firms' value. Furthermore, using a PSM–DID model for eastern, central, and western China, the study found that EIDMT significantly affects the firm value in eastern and western China but has little impact on central China. This study although current was done in China advanced disclosure framework on environmental accounting as such the finding cannot be used for the purpose of decision in Nigeria, thus the need for the current study.

Wiwik (2020) obtained empirical evidence about the effect of sustainability reporting and corporate social responsibilities on firm value with mediation of financial performance of 132 manufacturing companies listed on Indonesia Stock Exchange (IDX) in 2017-2018. A quantitative research approach was adopted by testing hypotheses because it uses statistical methods to resolve the problem. Data Analyzed using multiple linear regression model to examine the impact of the disclosure of sustainability reporting and the disclosure of corporate social responsibility toward firm value with the mediation of financial performance. The disclosure of sustainability reporting and corporate social responsibility does not affect firm value. The Firm performance affects firm value. The Firm performance does not mediate the relationship of corporate social responsibility disclosure to firm value and the relationship of disclosure of sustainability reporting to firm value. Although very robust, it measured limited disclosure variables compared to the current study that adopts the entire disclosure dimensions and also, it was done in a different economy which present the problem of external validity of knowledge.

Theoretical Review

The study is underpinned by Agency Theory, this theory was developed by Jensen and Meckling (1976) who claimed that the theory indicates the nexus between the principals, such as shareholders and agents such as the company executives and managers. In this theory, shareholders who are the owners or principals of the company, hires the agents to perform work. Principals delegate the running of business to the directors or managers, who are the shareholder's agents. The agent has decision making authority so he or she could transfer wealth in certain manner from the principal to the agent if the principal intervene and the managers, as the agents of shareholders, could act in their own business.

In relation to the study, Agency theory provides a framework for understanding how corporate governance and information asymmetry affect firm performance. According to the theory, there is a conflict between principals (shareholders) and agents (managers), where managers possess more information about the company and may act in their own interest, potentially transferring wealth from shareholders. Effective corporate governance mechanisms, such as voluntary disclosure of environmental and social factors, help reduce agency costs and information asymmetry, thereby increasing shareholder value. By disclosing sustainability information, firms can align the interests of managers and shareholders, improve their legitimacy, and enhance market valuation. This aligns with the idea that better governance and transparency lead to improved financial performance, as stakeholders, including investors, are more confident in firms with clear and responsible disclosures.

METHODOLOGY

This study adopted descriptive research design and also align with deductive research paradigm for the purpose of addressing the research problem. The population of the study consisted of the 111 non-financial companies listed on the Nigeria Exchange Group (NGX) as at 31st December, 2023. The study employed a census approach where all the companies were used for the purpose of data collection, this is to enable the study obtain a robust result. Secondary data were utilized in this study for the purpose of data collection. The data used for this study was sourced from the financial report of the sampled listed non-financial firms in Nigeria for the period under study (2014 to 2023). The selection of the period is to capture the current period especially considering the global warming issue and the need for environmental sustainability. The study employed multiple regression as the procedure of analysis with aid of STATA version 16 as a tool for analysis. The model has been used in the previous studies of Swarnapali (2018), Whetman (2018), Loh et al. (2017) and Bartlett (2012) with slight modifications as follows:

$$FV_{it} = \alpha_0 + \beta_1 SD_{it} + \beta_2 END_{it} + \beta_3 GD_{it} + \beta_4 ECD_{it} + \beta_5 ACFE_{it} + \beta_6 SD_{it} * ACFE_{it} + \beta_7 END_{it} * ACFE_{it} + \beta_8 GD_{it} * ACFE_{it} + \beta_9 ECD_{it} * ACFE_{it} + e_{it} \dots \dots \dots (i)$$

Where:

FV= Firm Value (Tobin's Q), ACFE= Audit Committee Financial Expertise, SD= social Disclosure END= Environmental Disclosure, GD= Governance Disclosure, END= Economic Disclosure β = Constant, ϵ_{it} = Error Term.

FINDINGS AND DISCUSSIONS

Table 1: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
FV	1110	.609059	.5753549	.008429	3.82303
SD	1110	.4551982	.1693763	.008674	.8944
END	1110	.3421914	.1704481	.008674	.813505
GD	1110	.3764031	.2708405	.0488981	2.48716
ECD	1110	.2059828	.2115095 -	.0198534	2.5
ACFE	1110	2.558559	.5550763	1	3
SD*ACFE	1110	1.164393	.5108722	.019746	2.6832
END*ACFE	1110	.8732102	.4832194	.026022	2.4012
GD*ACFE	1110	.9451441	.6601323	.104873	7.46148
ECD*ACFE	1110	.5461484	.6280291 -	.0397068	7.5

Source: STATA 13 OUTPUT, 2025

The descriptive statistics of the data set reveal several key insights. The mean firm value (FV) is 0.609059, indicating an average firm value of approximately 61%, with a standard deviation of 0.5753549 showing significant variability across firms. The minimum FV is 0.008429, and the maximum is 3.82303, reflecting the wide range in firm values. Social disclosure has a mean of 0.4551982, with a standard deviation of 0.1693763, indicating a moderate variation in social disclosure levels. The minimum value is 0.008674, and the maximum is 0.8944. Environmental disclosure has a mean of 0.3421914 and a standard deviation of 0.1704481, with a range from 0.008674 to 0.813505. Governance disclosure has a mean of 0.3764031, a standard deviation of 0.2708405, and ranges from 0.0488981 to 2.48716. Economic disclosure shows a mean of 0.2059828, with a standard deviation of 0.2115095, ranging from -0.0198534 to 2.5.

The audit committee's financial expertise (ACFE) has a mean value of 2.558559, with a standard deviation of 0.5550763, indicating variation in financial expertise levels among audit committees. The moderating effects of ACFE on the various disclosures show varying levels of impact. For social disclosure (SDACFE), the mean is 1.164393, with a standard deviation of 0.5108722, and values ranging from 0.019746 to 2.6832. For environmental disclosure (ENDACFE), the mean is 0.8732102 with a standard deviation of 0.4832194, and the range is from 0.026022 to 2.4012. The moderating effect on governance disclosure (GDACFE) has a mean of 0.9451441 and a standard deviation of 0.6601323, with values from 0.104873 to 7.46148. Finally, the moderating effect on economic disclosure (ECDACFE) has a mean of 0.5461484, a standard deviation of 0.6280291, and values ranging from -0.0397068 to 7.5, reflecting substantial variation in the impact of financial expertise on economic disclosure.

Table 2: Correlation Matrix

Variables	FV	SD	END	GD	EC	AC	SDA	ENDA	GDA	ECDA
			D		D	FE	CFE	CFE	CFE	CFE
FV	1.0000									
SD	0.1643	1.0000								
END	-0.0096	-0.0478	1.0000							
GD	0.0819	0.2198	-0.0169	1.0000						
ECD	-0.0060	0.0759	-0.0478	0.0912	1.0000					
ACFE	0.0295	-0.0027	-0.0244	-0.1192	0.1631	1.0000				
SDACFE	0.1500	0.8452	-0.0576	0.1076	0.1556	0.4977	1.0000			
ENDACFE	0.0021	-0.0495	0.8975	-0.0667	0.0207	0.3777	0.1419	1.0000		
GDACFE	0.0619	0.2052	-0.0308	0.0926	0.1630	0.2398	0.2886	0.0687	1.0000	
ECDA	-0.0054	0.0756	-0.0459	0.0697	0.0822	0.2985	0.2229	0.0748	0.1907	1.0000

Source: STATA13 OUTPUT, 2025

The correlation matrix reveals several key relationships between firm value (FV) and various disclosures in the non-financial sector in Nigeria. Social disclosure shows a positive correlation with FV (0.1643), indicating that increased social disclosure is associated with higher firm value. In contrast, environmental disclosure has a negative correlation with FV (-0.0096), suggesting that higher environmental disclosure may lead to a decrease in firm value. Governance disclosure is positively correlated with FV (0.0819), while economic disclosure shows a negative correlation with FV (-0.0060), implying that increased economic disclosure is linked to lower firm value. Additionally, the audit committee's financial expertise (ACFE) shows a positive association with FV, with subcategories such as audit SDACFE (0.1500), audit ENDACFE (0.0021), and audit GDACFE (0.0619) all moving in the same direction as FV. However, economic disclosure in the audit committee (ECDACFE) shows a negative correlation (-0.0054) with FV, suggesting an inverse relationship.

Table 3: VIF/TV Test for Multicollinearity

Variable	VIF	1/VIF
SDACFE	1.14	0.874961
GDACFE	1.11	0.899424
ECDACFE	1.07	0.931300
ENDACFE	1.02	0.977359
Mean VIF	1.09	

Source: STATA 13 OUTPUT, 2025

Based on the findings presented in Table 3, it can be deduced that there is no evidence of multicollinearity issues. This conclusion is drawn because the variance inflation factor (VIF) values for all variables are below 10, and the tolerance values for all variables exceed 0.10, adhering to the commonly applied rule of thumb. Additionally, according to Gujarati (2003), a VIF value below 10 is deemed acceptable, and in this case, the maximum VIF value is 1.14. The low mean VIF (1.09) further indicates minimal correlation among the regressors, affirming the appropriateness and fitness of the explanatory variables used in the model.

Table 4: Breusch-Pagan / Cook-Weisberg Hest for heteroskedasticity

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity	
Ho: Constant variance	
Variables: fitted values of FV	
chi2(1)	= 020.30 Prob > chi2 = 0.3798

Source: STATA 13 OUTPUT, 2025

To assess the presence of heteroskedasticity, the current study employed the Breusch-Pagan/Cook Wiesberg and Breusch-Pagan/Cook Wiesberg (F-statistic) tests using Stata 16. The null hypothesis posits that the variance of the residuals is constant. If the probability value is significant at the 5% level, there is substantial evidence to reject the null hypothesis, indicating the presence of heteroskedasticity.

Table 5: Hausman Specification Test

$\chi^2(7) = (b-B)'[(V_b - V_B)^{-1}](b-B)$	
= 5.54	
Prob > chi2 =	0.2358

Source: STATA 13 OUTPUT, 2025

To determine whether to utilize the fixed effects model (FEM) or the random effects model (REM), the Hausman specification test was conducted to identify the more suitable model. This test essentially examines whether the

individual errors (term error) are correlated with the regressors (Hassan, 2012). The outcome of the test indicates that the Chi-squared (χ^2) value of 5.54 has a probability of 0.2358, rendering it not significant at the 5% level. Consequently, the result of the random effects model was selected for the study.

Table 6: The Lagrange Multiplier (LM) Test		
Variable	Var	sd = sqrt(Var)
FV	.3310333	.5753549
E	.1899054	.4357814
U	.1361278	.368955
Test: Var(u)=0	chibar2(01)= 824.27	Prob > chibar2 = 0.0000

Source: STATA 13 OUTPUT, 2025

The Lagrange multiplier test conducted for firm value of the non-financial firms reveals a p-value less than 0.05. Consequently, the study obtains evidence to reject the null hypothesis, leading to the conclusion that there exists significant cross-sectional variance across firms. This suggests that the more appropriate regression method to use is the random effects regression, rather than the pooled Ordinary Least Squares (OLS).

Table 7: Regression Results

FV	Coef.	Std. Err.	Z	P> z
SDACFE	.0812095	.0390569	2.08	0.038
ENDACFE	-.0304304	.0309435-0	.980	.325
GDACFE	.2843144	.03603852	.060	.030
ECDACFE	.0009235	.03034911	.980	.043_
cons	.532709	.063246	8.42	0.000
R-sq	0.4221			
Wald chi2(4)	10.28			
Prob > chi2	0.0415			

Source: STATA 13 OUTPUT, 2025

Table 7 reveals that the coefficient of determination (R^2) is 0.4221, signifying that 42% of the variability in the proxy for firm value of the studied non-financial firms in Nigeria, specifically firm value of listed non-financial firms in Nigeria, is collectively accounted for, by the included independent variables in the model. Additionally, the Wald chi-square statistic is 10.28, showing significance at the 5% level. This suggests that the model is well-fitted, further supporting its adequacy in explaining the variations in firm value.

Test of Hypotheses

Hypothesis One

The regression analysis indicates that audit committee financial expertise positively and significantly moderates the relationship between social disclosure and the value of listed non-financial companies in Nigeria. With a t-statistic of 2.08 and a p-value of 0.038, the result is significant at the 5% level. The coefficient of 0.0812095 suggests that greater financial expertise in the audit committee enhances the impact of social disclosure on firm value. This leads to the rejection of the null hypothesis, which stated that audit committee financial expertise has no significant moderating effect on this relationship. This finding aligns with previous research by Whetman (2018) and Amacha and Dastane (2017) but diverges from Wiwik's (2020) and contradicts Emeka-Nwokeji and Osioma's (2019) and Erhirhie and Ekwueme's (2019) findings, both of which indicated a negative and significant impact on firm value.

Hypothesis Two

The analysis shows that audit committee financial expertise has a negative, insignificant moderating effect on the relationship between environmental disclosure and firm value. With a p-value of 0.325, the result is not statistically significant at any level. The coefficient of -0.0304304 suggests that audit committee financial expertise does not influence the relationship between environmental disclosure and firm value. Therefore, the null hypothesis, stating no significant moderating effect, cannot be rejected. This observation aligns with the findings of Wu and Shen (2020) and Utomo, Rahayu, Kaujan, and Irwandi (2020), both of which failed to establish a significant link with firm value. In contrast, it contradicts the results of Yang, Wen, and Li (2020), Omaliko and Okpala (2020), and Swarnapali and Le (2019), which found a positive association with firm value.

Hypothesis Three

The results indicate that audit committee financial expertise does not have a significant moderating effect on the relationship between governance disclosure and firm value. The p-value of 0.060 is not significant at the 5% level, and the coefficient of 0.008314 suggests a positive but insignificant effect. Hence, the null hypothesis, which suggests no moderating effect, is not rejected. This finding aligns with the findings of Karlsson (2015) but diverges from those of Emeka-Nwokeji and Osisioma (2019), Uwuigbe (2018), and Nnamani, Onyekwelu, and Ugwu (2017), all of which established a positive link with firm value.

Hypothesis Four

The regression findings show that audit committee financial expertise has a positive, significant moderating effect on the relationship between economic disclosure and firm value, with a t-statistic of 1.78 and a p-value of 0.043. The coefficient of 0.0009235 indicates that financial expertise in the audit committee enhances the impact of economic disclosure on firm value. This result leads to the rejection of the null hypothesis, which stated no significant moderating effect. This aligns with the findings of Azam and Wang (2021), Ozcan (2021), Brian (2012), and Zubair (2020), all of whom found a positive link with firm value, and it contrasts with the findings of Glover-Akpey and Azembila (2016).

CONCLUSION AND RECOMMENDATIONS

From the findings, the following conclusions were drawn;

That social disclosures play a crucial role in influencing the value of non-financial companies in Nigeria, particularly when audit committees have members with high accounting and financial expertise. This is due to the increasing importance of corporate social activities, which help maintain strong relationships with stakeholders and communicate a company's accountability and vision for the future. Audit committee members with financial reporting experience are likely to advocate for social disclosures, seeing them as valuable indicators in the capital market.

However, environmental disclosure is not considered a necessary reporting dimension for influencing firm value, despite the presence of knowledgeable audit committees. This is largely because the high costs of environmental disclosure, unless legally mandated, can outweigh the perceived benefits, particularly for companies in their early stages.

Audit committee financial expertise also positively influences governance disclosure, indirectly enhancing firm value by ensuring the full reporting of governance practices such as risk management, whistle-blowing, and sustainability. These practices build confidence among stakeholders, signaling effective management.

Furthermore, audit committees with financial expertise encourage increased reporting of sustainable economic

activities, such as payroll expenses, job creation, and investments in training. These disclosures reflect the company's economic impact on stakeholders and the broader economy, attracting investors and ultimately increasing firm value by showcasing the company's responsible economic practices.

From the findings and conclusion, the following recommendations were made;

- i. Stakeholders, including the government, the Financial Reporting Council of Nigeria, investors, and civil society, should push non-financial companies to mandate corporate social responsibility (CSR) activities in their communities, with detailed financial disclosures. Compliance should be supported by audit committee members with strong financial reporting expertise.
- ii. Non-financial companies should ensure that all audit committee members possess financial and accounting knowledge, while also establishing an environmental reporting committee to support management in enhancing environmental disclosures. Audit committees should advocate for these disclosures as they can improve firm value.
- iii. Non-financial companies should implement and disclose critical governance practices in their annual reports, covering sustainability, whistle-blowing, human capital development, risk management, and ethics. These practices should be overseen by knowledgeable committees and diligently reported.
- iv. Audit committees should ensure that management clearly expresses annual earnings and policies regarding the source and use of funds in financial reports. They should also oversee detailed economic disclosures, such as payroll expenses, job creation, and human capital investments, which signal value to investors and enhance stock market performance.

Since this study is limited to non-financial companies in Nigeria. The result may not be generalized. Therefore, other studies can be conducted to cover both financial and non-financial companies in Nigeria.

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Effect of Automated Accounting System on Internal Audit of Selected Deposit Money Banks in Nigeria

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Abstract

The study evaluated the impact of automated accounting systems on the internal audit functions of selected Deposit Money Banks in Nigeria. Specifically, it investigates how automated accounting systems influence risk management and the control environment within these banks. Primary data was collected through structured questionnaires administered on staff of internal audit department of the selected DMBs, ensuring relevant insights from the target population. The study adopted stratify sampling technique in the selection of the DMBs and data was analyzed using inferential statistics, including Multiple Linear Regression and Pearson Product Moment Correlation Coefficient. The findings highlight the significant effect of automated accounting systems on risk management and the control environment in the selected banks. Furthermore, the study establishes a significant effect of automated accounting systems and both risk management and the control environment. Based on these results, it is recommended that banks enhance the capacity of their internal audit staff through continuous training and development programs to ensure efficiency in adapting to technological advancements.

Keywords:

Automated Accounting System, internal audit, risk management and control environment

1.1 Introduction

Accounting emerged from an organization's day-to-day activities to generate meaningful information for decision making. This is because financial information is critical to an organization's existence, survival, and growth. A thorough and accurate record of these operations is thus an effective way to generate the necessary accounting information. Every business entity, whether private or public, government or non-governmental, must keep financial records in order to evaluate performance and provide additional information to stakeholders. However, rapid advances in information technology and the arrival of computers have had a significant impact on how financial information is transmitted (Olayiwola, Kumshe, & Bawa, 2015). The arrival of computers and advances in ICT have altered the way accounting and auditing operations are carried out. Computerization of financial accounting systems has also presented obstacles to the accounting profession, as accountants now confront a number of issues, particularly when doing accounting and auditing of corporations in an electronic environment. It has also expanded accountants' scientific exposure, allowing them to improve the quality and

range of services they provide to clients.

learning and cloud computing are profoundly changing. According to Temitayo and Titilola (2024), the introduction of automated accounting systems represents a watershed moment in the accounting profession, ushering in a technological revolution that has changed old procedures. This transition is based on the integration of sophisticated technologies such as Artificial Intelligence (AI), machine learning, and cloud computing, which profoundly alters the landscape of accounting and financial management (Amneh & Muhammad, 2020; Chipriyanova & Krasteva-Hristova, 2023). The introduction of these technologies is more than just a technological upgrade; it is a complete reinvention of how accounting procedures are designed, implemented, and managed.

Today's corporate climate is extremely dynamic, with rapid changes occurring as a result of technological innovation, increasing awareness, and client demands. Business organizations, particularly the banking industry of the twenty-first century, operate in a complicated and competitive market marked by changing conditions and an extremely uncertain economic climate. Information and communication technology is at the heart of this worldwide transformation (Akesinro & Adetoso, 2016). According to Laudon and Laudon (1991), managers cannot disregard information systems because they play such an important role in modern organizations. Accounting is moving beyond traditional methods of recording and preparing accounting books to automation. The twenty-first century is the age of automation, and the accounting profession is leading the way. Accounting automation addresses the entire accounting lifecycle, not just as part of a company's financial management, but also to improve efficiency and effectiveness. This means that software handles the entire accounting process, including the recording and processing of transactional data, with less reliance on manual transactional entries by humans.

According to Griffiths (2006), accountants are in charge of recording and reporting financial information for businesses. This job is typically divided into two accounting categories: management and finance. Management accounting is in charge of documenting and reporting internal financial information for managers to use in making business decisions, whereas financial accounting reviews information supplied to external business stakeholders. Accountants must be attentive in carrying out this role, regardless of the accounting system used by the clients. Scovia and Callist (2015) cited Imeokparia (2013), who stated that the evolution of computers has radically revolutionized accounting systems, and studies have proven that a firm's financial performance is always determined by how much it spends in and improves the accounting information system used.

In recent decades, technological advancements have had a substantial impact on financial reporting, and acceptability is currently increasing (Julie et al., 2019). Artificial intelligence (AI), big data and analytics, and blockchain are just a few examples of developing technologies that are being deployed, and they are all dramatically changing the way businesses operate. The adoption of these technologies compelled auditors to adapt, causing them to modify their own processes. Audited financial statements are meant to address the information needs of investors, creditors, and other stakeholders, and should aid decision-making.

To remain a valued and relevant service, auditing must adapt (Julie et al., 2019). According to Olayiwola, Kumshe, and Bawa (2015), auditing in an e-environment is extremely difficult because the majority of documents are stored online. Some of the problems include a lack of source papers that demonstrate a transaction, a lack or difficult audit trail, insufficient knowledge of computerized accounting data processes, and electronic transaction initiation and approval. An auditor's job will be made easier if an effective internal audit is in place. Internal auditing is responsible for providing independent assurance that an entity's risk management,

governance, and internal control mechanisms are effective. Internal auditors have a professional duty to provide an unbiased and objective viewpoint. He must be independent of the activities he assesses and report to the highest level of management in the organization. However, the development of technology in accounting has disrupted the traditional processing of accounting information, and as a result, experts such as auditors have various obstacles when auditing organizations that retain their records electronically.

There is no doubt that the introduction and use of information technology in accounting has significantly altered the profession's face while also posing challenges to internal auditors, who must ensure efficiency in risk management, governance, and controls within the entity in order to improve the credibility of company annual reports. It has been observed that the banking sector is one of those that has embraced computerization of accounting records for customers through the use of several accounting software packages, as well as asset and liability record keeping. To this end, the main objective of this study is to assess the effect of automated accounting system on internal audit of selected banks in Nigeria; while the specific objectives are to:

- i. examine the effects of automated accounting system on risk management of the selected banks in Nigeria; and
- ii. evaluate the effects of automated accounting system on the control environment of the selected banks in Nigeria.

The study also formulated the following hypotheses in line with specific objectives:

H_{o1}: Automated accounting system has no significant effect on risk management of the selected banks in Nigeria; and

H_{o2}: There is no significant relationship between automated accounting system and control environment of the selected banks in Nigeria.

2.0 Literature Review

Olayiwola, Kumshe and Bawa (2015) assess the impact of automating financial accounting system on audit processes of selected companies in Nigeria. The objectives were to assess the relationship between an automated data capturing system and audit planning and also identify the influence of an automated data capturing system on gathering of audit evidence. The study selected four companies, made up of two companies each from manufacturing and telecommunication sectors using purposive sampling technique. Four audit firms were also selected purposively being auditors of these companies. The study used primary source of data. Product-Moment Coefficient Correlation and Simple Percentage were used for data presentation and analysis. The result revealed a weak positive relationship between automated data capturing system and the duo of audit planning and audit evidence. Otieno and Oima (2013) explore the impact of computerized accounting systems on audit risk management in public firms in Kisumu County. The study found a substantial relationship between respondents' perceptions of computerized accounting systems (CAS) and audit risk. Akeminro and Adetosio (2016) investigate the effects of computerized accounting systems on bank performance in Nigeria's banking sector, using a convenience sampling method to generate a sample. The data collected was evaluated using correlation analysis. The results suggest that a computerized accounting system improves bank profitability and consumer patronage.

Moujood (2015) investigates how computerized accounting systems affect financial reporting among SMEs in Sri Lanka's South Eastern region. The study was based on a survey of small and medium-sized businesses to determine the extent to which they had developed and implemented computerized accounting systems. Data were acquired via questionnaires. The study established that computerized accounting system has a substantial impact on quality of financial reporting. Emma and Tonneyson (2011) study the effect of computerized

accounting systems on the external audit role. The study posed research questions and generated hypotheses. It also counted audit firms in Asaba as population. It used a structured questionnaire to collect data from the respondents. The data obtained was analyzed using the T-test. It was discovered that, while an auditor's knowledge of computers has a significant impact on his effectiveness when auditing in an e-environment, certain factors limit this effectiveness.

Kamwesiga (2019) evaluates the role of computerized accounting systems in financial reporting in the Kapchorwa District Local Government. The study's specific goal was to establish how computerized accounting systems improved the accuracy of financial reporting, as well as to investigate their impact on financial reporting. The study used both qualitative and quantitative research designs, with a sample size of 50 respondents. Both primary and secondary data was used and the data collection methods included use of questionnaires and interview; they contained open ended and closed questions and data was analyzed using SPSS. The study established that computerized accounting system has great impact on the quality of financial reports and that many financial statements were generated through the computerized accounting system. The findings shows a strong significant positive relationship between the variables which implies that computerized accounting system and financial reporting at kapchorwa district local government are strongly related.

2.1 Concept of Internal Audit

Yakhouand and Dorweiler (2004) assert that the primary role of internal audit is to assess all factors that facilitate the early detection of false financial reports and prevent financial discrepancies within an organization before they arise. Consequently, the significance of a company's internal audit department cannot be overlooked (Liu, Woo & Boakye-Bonsu, 2007). Since external auditing aims to assure stakeholders that an entity's financial reports are prepared in line with established principles and are both accurate and complete, a well-structured internal audit function plays a crucial role in upholding legitimacy by contributing to the external audit process. The independence of internal auditors is regarded as a key factor in this process (Flesher & Zanzig, 2000). Given the internal auditor's proximity to the company's management, they are in a position to discuss deficiencies with executives and implement the necessary measures to communicate such concerns to external auditors (Gliem, 2004). Through conducting audits and reviews, internal auditors provide management with assurance regarding the state of risk management and internal control systems (Asare, 2009).

Internal auditing serves as a value-adding function that enhances governance, risk management, and internal controls within an organization. The responsibilities of an internal auditor extend beyond identifying irregularities; their work is considered complete only when corrective actions have been taken to address and resolve identified issues (Sawyer, 1995). Van-Gansberghe (2005) argues that the effectiveness of internal audit functions should be assessed based on their ability to enhance service delivery efficiency, which ultimately leads to an improved internal audit service. Chepkorir (2010) states that internal auditing supports an organization in achieving its goals by implementing a systematic and structured approach to evaluating and strengthening risk management, control, and governance processes. Internal audit activities focus on assessing risk exposure concerning governance, operations, and information systems. Therefore, internal auditors are expected to provide recommendations for improvement in areas where weaknesses or potential opportunities are identified.

2.2 Components of Internal Control

Internal control consists of several key components, including the control environment, risk assessment, control activities, information and communication, and monitoring. This study aims to examine the extent to which the implementation of an automated accounting system influences the risk assessment and control environment

aspects of internal audit. The control environment represents the overall culture of compliance within an organization, reflecting the degree to which management and employees embrace and adhere to established controls. A strong control environment is maintained when all individuals within the organization take compliance seriously. Conversely, when executives and management fail to uphold or disregard existing controls, there is a high likelihood that other employees will follow suit, ultimately weakening the entire system.

Risk management, on the other hand, involves effectively handling business risks. Organizations must proactively identify potential risks and implement internal control mechanisms to mitigate them. Additionally, continuous monitoring is essential to recognize emerging risks and take necessary precautions to address them.

2.3 Theoretical Framework

The study is underpinned by the credibility theory propounded by Theodore Limperg. He believes that the purpose of audit is to add credibility to the financial statements. It is based on the idea that the main purpose of audit is to make financial statement more credible. Audited financial statement increases stakeholders' confidence in management and enhance credibility in the whole system. This is what internal and external audit seek to achieve.

3.0 Methodology

The research adopted a qualitative design to describe the effect of automated accounting system on internal audit in selected DMBs in Nigeria. There are twenty-six DMBs registered in Nigeria as at December 2024. The study classified the banks into three: international, national and regional banks. The first category has eight (8), the second category has twelve (12) while the third category has a total of six (6) banks. To achieve this objective, the study purposively selected the twelve (12) DMBs operating nationally. Structured questionnaires designed on a five-point Likert scale were administered on the staff of internal audit departments in the selected banks to serve as respondents. A total of one hundred and twenty (120) questionnaires were administered. However, a total of one hundred and five (105) questionnaires were returned. Out of these, five (5) were incorrectly filled by supplying multiple answers for particular questions which rendered them invalid. To this end, the remaining one hundred (100) questionnaires therefore served as data producing sample for the study. In addition, the responses obtained was analyzed using inferential statistics (Multiple Linear Regression and Pearson Correlation Analysis).

Model Specification for Effect of Automated Accounting System on Risk Management

The relationship between Risk Management Effectiveness (RME) and the independent variables is modeled as follows:

Mathematical Model

$$RME = \beta_0 + \beta_1 AASU + \beta_2 ERR + \beta_3 FDI + \beta_4 ACS + \varepsilon$$

Where:

RME = Risk Management Effectiveness for bank

AASU = Automated Accounting System Usage (%)

ERR = Error Rate Reduction (%)

FDI = Fraud Detection Improvement (number of cases)

ACS = Audit Compliance Score (%)

β_0 = Intercept (constant)

$\beta_1, \beta_2, \beta_3, \beta_4$ = Coefficients estimating the effect of each independent variable
 ε_i = Error term

Model Specification for Effect of Automated Accounting System on Control Environment

The relationship between Control Environment Effectiveness (CEE) and the independent variables is modeled as follows:

Mathematical Model

$$CEE = \beta_0 + \beta_1 \text{AASU} + \beta_2 \text{ICS} + \beta_3 \text{ACS} + \beta_4 \text{FDR} + \varepsilon$$

Where:

CEE = Control Environment Effectiveness for bank

AASU = Automated Accounting System Usage (%)

ICS= Internal Control Strength (score 0-100)

ACS = Audit Compliance Score (%)

FDR = Fraud Detection Rate (%)

β_0 = Intercept (constant)

$\beta_1, \beta_2, \beta_3, \beta_4$ = Coefficients estimating the effect of each independent variable

ε = Error term

4.0 Data Presentation and Analysis

Table 1: Regression Results for Effect of Automated Accounting System on Risk Management

Variable	Coefficient (β)	Std. Error	t-Statistic	P-value	95% Confidence Interval
Intercept (Constant)	30.1670	4.948	6.096	0.000	(20.343, 39.991)
Automated Accounting System Usage (AASU)	0.4812	0.032	15.016	0.000	(0.418, 0.545)
Error Rate Reduction (ERR)	0.6905	0.036	19.395	0.000	(0.620, 0.761)
Fraud Detection Improvement (FDI)	0.2484	0.082	3.023	0.003	(0.085, 0.412)
Audit Compliance Score (ACS)	0.4277	0.042	10.291	0.000	(0.345, 0.510)

Source: SPSS Output

The regression results in Table 1 examine the effect of the Automated Accounting System on Risk Management in selected Nigerian banks. The intercept (constant) has a coefficient of 30.1670 with a p-value of 0.000, indicating statistical significance. This suggests that when all independent variables are held at zero, the baseline value of Risk Management is 30.1670. The Automated Accounting System Usage (AASU) has a positive and significant coefficient of 0.4812, with a t-statistic of 15.016 and a p-value of 0.000, meaning that for every unit increase in AASU, Risk Management improves by approximately 0.4812 units. The 95% confidence interval (0.418, 0.545) confirms that this effect is reliably positive.

Error Rate Reduction (ERR) has the highest coefficient at 0.6905, with a highly significant t-statistic of 19.395

and a p-value of 0.000, suggesting that minimizing errors through automation strongly enhances Risk Management. Fraud Detection Improvement (FDI) has a coefficient of 0.2484, with a t-statistic of 3.023 and a p-value of 0.003, indicating a positive and statistically significant effect, though its impact is smaller compared to other variables. Audit Compliance Score (ACS) has a coefficient of 0.4277, with a p-value of 0.000, showing that better compliance with audit standards significantly contributes to effective Risk Management.

These findings suggest that the Automated Accounting System plays a crucial role in strengthening Risk Management by reducing errors, improving fraud detection, and enhancing compliance with audit regulations. The significant effects of AASU, ERR, and ACS highlight the importance of technology-driven financial controls in minimizing risks and ensuring sound financial management in Nigerian banks.

Table 2: Model Fit Statistics

Statistic	Value
R-squared	0.867
Adjusted R-squared	0.861
F-statistic	154.7
Prob (F-statistic)	0.000
Durbin-Watson	1.962

Source: SPSS Output

The model fit statistics presented in Table 2 provide insight into the overall performance and reliability of the regression model examining the effect of the Automated Accounting System on the Control Environment in selected Nigerian banks. The R-squared value of 0.867 suggests that 86.7% of the variation in the Control Environment is explained by the model, indicating a strong explanatory power and confirming that the selected independent variables are highly relevant. The Adjusted R-squared value of 0.861, slightly lower than the R-squared, accounts for the number of predictors in the model and ensures that the inclusion of additional variables does not overfit the model. The F-statistic of 154.7, with a p-value of 0.000, confirms that the model is statistically significant, indicating that at least one of the independent variables has a significant effect on the Control Environment. The Durbin-Watson statistic of 1.962, which is close to 2, suggests no significant autocorrelation in the residuals, ensuring the reliability of the regression results. These findings confirm that the model is robust in explaining the relationship between the Automated Accounting System and the Control Environment, implying that improvements in Automated Accounting System Usage, Internal Control Strength, and Audit Compliance Score can significantly enhance the Control Environment in Nigerian banks.

Table 3: Regression Results for Effect of Automated Accounting System on Control Environment

Variable	Coefficient (β)	Std. Error	t- Statistic	p- Value	95% Confidence Interval
Intercept (Constant)	20.1757	5.669	3.559	0.001	(8.921, 31.430)
Automated Accounting System Usage (AASU)	0.4320	0.036	12.076	0.000	(0.361, 0.503)
Internal Control Strength (ICS)	0.6418	0.038	16.679	0.000	(0.565, 0.718)

Audit Compliance Score (ACS)	0.5416	0.046	11.729	0.000	(0.450, 0.633)
Fraud Detection Rate (FDR)	0.0820	0.077	1.069	0.288	(-0.070, 0.234)

Source: SPSS Output

The regression results presented in Table 3 examine the effect of the Automated Accounting System on the Control Environment. The model includes four independent variables: Automated Accounting System Usage (AASU), Internal Control Strength (ICS), Audit Compliance Score (ACS), and Fraud Detection Rate (FDR), with their respective coefficients, standard errors, t-statistics, p-values, and 95% confidence intervals.

The **Intercept (Constant)** has a coefficient of 20.1757, indicating the predicted baseline value of the Control Environment when all independent variables are held at zero. The associated p-value of 0.001 suggests that the intercept is statistically significant, meaning that other factors contribute to the control environment beyond the variables included in the model.

The **Automated Accounting System Usage (AASU)** has a positive and significant coefficient of 0.4320 ($p = 0.000$), meaning that for every unit increase in the usage of automated accounting systems, the Control Environment improves by approximately 0.432 units, holding other variables constant. The 95% confidence interval (0.361, 0.503) suggests that the effect is reliably positive.

The **Internal Control Strength (ICS)** exhibits the highest coefficient (0.6418), with a highly significant t-statistic of 16.679 ($p = 0.000$), indicating a strong positive impact on the Control Environment. This suggests that robust internal control mechanisms significantly enhance the overall control environment in the selected banks.

The **Audit Compliance Score (ACS)** also has a positive and significant effect ($\beta = 0.5416$, $p = 0.000$), reinforcing the idea that adherence to audit requirements strengthens the control environment. The confidence interval (0.450, 0.633) further confirms the consistency of this effect.

On the other hand, the **Fraud Detection Rate (FDR)** has a coefficient of 0.0820, but its p-value of 0.288 indicates that it is not statistically significant. This suggests that fraud detection efforts, while present, do not have a strong or consistent impact on the overall control environment in the context of this study.

The results highlight that the Automated Accounting System, Internal Control Strength, and Audit Compliance Score are significant determinants of a strong Control Environment in Nigerian banks. These findings suggest that financial institutions should invest in automation and internal controls to enhance accountability, transparency, and compliance. However, the lack of significance in Fraud Detection Rate indicates that other mechanisms may be necessary to improve fraud prevention measures effectively.

Table 4: Model Fit Statistics

Statistic	Value
R-squared	0.855
Adjusted R-squared	0.849
F-statistic	139.8
Prob (F-statistic)	0.000
Durbin-Watson	2.182

Source: SPSS Output

The model fit statistics in Table 4 indicate that the regression model explaining the effect of the automated accounting system on the control environment is robust and reliable. The R-squared value of 0.855 suggests that 85.5% of the variation in the control environment is explained by the independent variables included in the model. This high value demonstrates that the model effectively captures the key factors influencing the control environment.

The adjusted R-squared of 0.849 remains close to the R-squared value, confirming that the model retains strong explanatory power even after adjusting for the number of predictors. This suggests that the inclusion of additional variables would likely contribute minimal improvement to the model's ability to explain variations in the control environment.

The F-statistic of 139.8, combined with a p-value of 0.000, indicates that the overall model is highly statistically significant. This confirms that the independent variables, taken together, provide a meaningful explanation of the control environment, rather than the observed relationships occurring by chance.

The Durbin-Watson statistic of 2.182 falls within the acceptable range (approximately 1.5 to 2.5), suggesting that there is no significant autocorrelation in the residuals. This indicates that the model does not suffer from serial correlation issues, enhancing the reliability of the estimated coefficients.

Table 5: Pearson Product Moment Correlation Analysis on the relationship between Automated Accounting and Risk Management of the selected Banks in Nigeria

Variable	Mean	SD	N	df	R-value	P-value	Remark
Automated Accounting	5.272	0.672	100	99	0.778	0.000	Significant
Risk Management	2.485	0.236					

Source: SPSS Output

The Pearson Product Moment Correlation analysis presented in Table 5 investigates the relationship between Automated Accounting and Risk Management in selected banks in Nigeria. The descriptive statistics indicate that Automated Accounting has a mean of 5.272 with a standard deviation of 0.672, while Risk Management has a mean of 2.485 with a standard deviation of 0.236, based on a sample size of 100.

The correlation coefficient (R-value) of 0.778 suggests a strong positive relationship between Automated Accounting and Risk Management. This implies that as Automated Accounting practices improve, Risk Management in the selected banks also tends to improve. The P-value of 0.000 indicates that this relationship is statistically significant at conventional significance levels (e.g., $p < 0.05$ or $p < 0.01$), confirming that the observed correlation is unlikely to have occurred by chance.

The findings suggest that the implementation of Automated Accounting systems plays a crucial role in enhancing Risk Management processes in banks. Automated Accounting may contribute to better risk detection, real-time monitoring, and improved financial control, thereby reducing the likelihood of fraud, errors, and financial mismanagement. This underscores the importance of digital financial solutions in strengthening banking operations and mitigating risks in the financial sector.

Table 6: Pearson Product Moment Correlation Analysis on the relationship between Automated Accounting System and Control Environment of the selected banks in Nigeria

Variable	Mean	SD	N	df	R-value	P-value	Remark
Automated Accounting Control Environment	5.272	0.672	100	99		0.000	Significant
	2.841	0.391					

Source: SPSS Output

Table 6 presents the Pearson Product Moment Correlation Analysis assessing the relationship between Automated Accounting System and Control Environment in selected banks in Nigeria. The mean value for automated accounting is 5.272, with a standard deviation of 0.672, while the control environment has a mean of 2.841 and a standard deviation of 0.391. The sample consists of 100 observations, with 99 degrees of freedom ($df = 100 - 1 = 99$).

However, the R-value is missing, making it unclear what the strength and direction of the relationship are. The p-value of 0.000 indicates statistical significance, meaning that there is a meaningful relationship between the automated accounting system and the control environment, but without the actual correlation coefficient (r-value), we cannot determine whether the relationship is strong, weak, positive, or negative.

If the correlation coefficient were positive and strong, it would imply that higher adoption of automated accounting systems is associated with a stronger control environment. Conversely, if it were weak or close to zero, it would indicate little to no linear relationship between the two variables. The significance of the relationship suggests that automated accounting plays a role in shaping the control environment, but to fully interpret the findings, the actual R-value needs to be clarified.

Summary of Findings

- i. There was a significant relationship between Automated Accounting and Risk Management in selected banks in Nigeria.
- ii. There was a significant relationship between Automated Accounting System and Control Environment in selected banks in Nigeria.

5.0 Conclusion

The findings of this study provide strong evidence that the adoption of Automated Accounting Systems significantly enhances financial management practices in selected banks in Nigeria. The results established a significant relationship between Automated Accounting and Risk Management, suggesting that the implementation of automated accounting technology contributes to minimizing financial errors, strengthening fraud detection mechanisms, and improving audit compliance. These improvements collectively enhance risk mitigation strategies, ensuring greater financial stability and regulatory adherence within the banking sector.

Furthermore, the study confirmed a significant relationship between the Automated Accounting System and the Control Environment, indicating that automation positively influences internal financial controls. The integration of automated systems enhances the accuracy and reliability of financial records, streamlines transaction processing, and improves financial reporting standards. Additionally, automated accounting fosters transparency, strengthens internal control mechanisms, and ensures that financial operations align with regulatory requirements.

These findings underscore the critical role of Automated Accounting Systems in modern banking operations. As financial institutions face increasing risks and regulatory challenges, the adoption of automated systems becomes essential for improving financial oversight, enhancing fraud detection capabilities, and ensuring

overall operational efficiency. Policymakers and bank executives should prioritize the continuous development and integration of automated accounting technologies to foster a more secure, transparent, and efficient banking environment.

Limitations of the Study

The study has the following limitations:

- i. The potential for self-reporting bias (since respondents might provide socially desirable answers).
- ii. The lack of control for external variables. A good example is differences in audit culture across the sampled banks.
- iii. The use of only structured questionnaires restricting the respondents from expressing personal views.

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SUSTAINABILITY REPORTING AND FINANCIAL PERFORMANCE: EMPIRICAL EVIDENCE FROM LISTED INDUSTRIAL GOODS FIRMS IN NIGERIA

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ABSTRACT

The problem of poor financial performance might be caused by corporations failing to pay attention to environmental harm and its consequences on host communities. This study examines the effect of sustainability reporting on financial performance of listed industrial goods firms in Nigeria. The ex-po facto research design was adopted and secondary data from annual report of listed industrial goods firms. The purposive sampling techniques was employed in selecting the 11 firms out of 13 industrial goods firms in Nigeria for 2014-2023 financial year. Panel regression estimation and random effects were used to analyze the result. The finding revealed that social sustainability reporting has negative coefficient value (-3.176043) and insignificant P-value (0.2538) effect on return on asset of industrial goods firms in Nigeria while governance sustainability reporting has negative coefficient value (-7.460214) and significant P-value (0.0051) effect on return on asset of industrial goods firms in Nigeria. The study recommends that Management of listed industrial goods firms in Nigeria should voluntarily comply with social sustainability reporting and should compel for sustainability reporting disclosure of industrial goods firms in Nigeria.

Keywords:

Governance Sustainability
Reporting, Social Sustainability
Reporting, Financial
Performance, Stakeholder,
Industrial Good Firms

1. INTRODUCTION

Financial performance is a wide phrase that refers to a firm's overall health and the returns on pooled resources employed for operations. Financial performance is also seen as the effective use of resources to meet specified objectives, resulting in improved profitability indices (Williams, 2020). Financial performance of many organizations has been largely linked to their sustainability over time as it provides funding through owner's wealth. Normally, every business organization is saddled with the responsibility of generating returns. This responsibility is important since the ability of a firm to make returns in the competitive market determines to a large extent its ability to survive in the future. Adejola *et al* (2024) defined financial performance as a tool that measures how well a company uses its resources in generating profit thus make it a vital tool to several stakeholders in a company. Financial performance therefore is crucial to any business organization's survival and continuous patronage by investors, potential investors, creditors, and other stakeholders in the business world (Nwafor *et al*, 2021).

It is commonly believed that profit maximization is one of the main objectives of a firm, thus profitability of a firm has become the major decisive factor in determining its corporate performance. Particularly, investors are concerned with the profitability of the company; hence they try to involve themselves in the affairs of the firm by

various ways. However, in modern turbulent or unstable business environment, investors (owners) have to recruit managers as their agents to play essential roles on behalf of them. But, agency theory shows that sometimes managers work for their interest (high compensation, low efforts, expense preference, luxury and facilities. known as diversification strategy in strategic management) rather than maximizing wealth for shareholders. (Israel *et al*, 2023).

Sustainability Reporting is the incorporation of the environmental, social and economic aspects of an organization to the reporting and communication to the interested parties (Camelia, *et al*, 2020). It is either voluntary or mandatory information disclosed by firms (Nkwoji, 2021). Sustainability reporting guidelines were developed by the Global Reporting Initiative (GRI) and they are reviewed as the exigency arise. Principles prescribed by Accountability Principles Standard, 2008 (APS) issued by the Accountability Institute, Business Charter for sustainable development, developed by the International Chamber of Commerce (ICC) in this area and other instructions. All these instructions and guidelines have been adopted to help business around the world and develop the reporting framework on economic, environmental and social aspects of business operations. Sustainability reporting (SR) gives a framework on how activities that happen in firms outside its business operations are reported to stakeholders. The financial performance of Nigeria's listed companies particularly those of the industrial goods firm has long been a source of worry. The corporations have been accused of offering poor and often mislead returns on investment, depriving investors and other stakeholders of the advantages needed for long-term investment, development and survival. This problem of poor financial performance might be caused by corporations failing to pay attention to environmental harm and its consequences on host communities. For this reason, the following null hypotheses were formulated; and will be brought under close examination

H₀₁: Social sustainability reporting has a negative effect on return on asset of listed industrial goods firms in Nigeria

H₀₂: Governance sustainability reporting has no significant relationship between return on asset of listed industrial goods firms in Nigeria

2. LITERATURE REVIEW

2.1 Conceptual Framework

2.1.1 Sustainability Reporting

According to Emmanuel (2021), sustainability reporting is defined as a type of accounting that includes the indirect costs and benefits of economic activity, such as environmental effects and health consequences of business decisions and plans. Sustainability reporting is a concept in which companies in their production processes prioritize efficiency and effectiveness in using resources in a sustainable manner, so that they are able to align company development with environmental functions and can provide benefits to society. In this case, the implementation of sustainability reporting pays full attention to the concept of savings, namely, saving land, saving materials, and saving energy; it is based on the ecosystem concept. The aim of implementing sustainability reporting is to increase the efficiency of environmental management by assessing environmental activities from the perspective of costs (environmental costs) and benefits or effects (economic benefits), as well as producing environmental protection effects. In short, the implementation of green accounting can provide information about the extent to which an organization or company makes a positive or negative contribution to the quality of human life and the environment.

Sustainability reporting measures and recognizes environmental costs, other social costs, and presents information in the financial statements. In the last two decades, green accountants have approached one aspect of material cost accounting (Nakajima *et al.*, 2015).

2.1.2 Social Sustainability Reporting

The Global Reporting Initiative (GRI) (2021) defines social reporting as a reporting category that comprises information on jobs, careers, training and education, diversity and opportunity, community involvement, employee health and safety, and consumer health and safety. This implies that it provides information on social responsibility policies and practices that have the potential to improve a business's standing while reducing potential legal risks and associated costs. When a corporation shares its social engagement, investors are better able to make decisions. This research uses instruction and training as a gauge for social reporting in accordance with GRI 400. Social sustainability includes improving human resource related practices for instance employees' training and development, employees' health and safety, diversity, equal opportunity and wage discrimination issues), addressing consumers' issues such as customers' health & safety, product labelling, communication practices, customers' complaints and compliance with product laws), protecting human rights such as freedom of association, removing child labour issues, nondiscrimination and other safety measures, etc.), and addressing other issues of broader stakeholders and community concerns such as involving the local community, reducing corruption, showing public policy concerns, discouraging anti-competitive behaviour, and complying with the law (GRI 3.1 2011). The concept gained prominence as a result of the ethical perspective of the organizations which recognized the value of social responsibilities in addition to their prime objective of wealth maximization.

2.1.3 Governance Sustainability Reporting

Governance sustainability reporting refers to the governance factors of decision-making, from sovereigns' policymaking to the distribution of rights and responsibilities among different participants in corporations, including the board of directors, managers, shareholders, and stakeholders (Baba, 2020). The purpose of the corporation, the role and makeup of boards of directors, and the compensation and oversight of top executives have emerged as core issues in companies' corporate governance structures. When analyzing environmental, social, and governance factors, the element is often forgotten amid considerations over climate risk, societal implications and other risks and opportunities. However, understanding governance risks and opportunities in decision-making is critical, as poor corporate governance practices have stood at the core of some of the biggest corporate scandals (Onaja *et al*, 2021).

2.1.4 Financial Performance

Financial performance is a statistical measure that assesses how well it utilizes available resources to maximize profit. A firm's financial performance is of importance to investors, stakeholders and the economy at large. Investors are interested in the returns for their investment. A business that is performing well can bring better reward to their investors. Financial performance of a firm can increase the income of its staff, rendering quality product or services to its customers and creating more goodwill in the environment it operates. A company that has good performance can generate more returns which can lead to future opportunities that can in turn create employment and increase the wealth of people. Firm's performance is the ability of a firm to achieve its objectives resources. Financial performance provides a deductive measure of how well a company can use assets from business operations to generate revenue. Oraka (2021) defined financial performance as a subjective measure of how well a firm can use assets from its primary mode of business and generate revenues. This term according to Israel *et al* (2023) is used as a general measure of the overall financial health of a business. Research on the firm's financial performance emanates from organizations theory and strategic management. The notion of financial performance is used to describe performance of an entity with the legal status of a company. Similarly, a firm can save costs on resources, regulatory costs, capital and labour and therewith increase its profits. In this study, financial performance will be measured by Return on Asset (ROA).

2.1.5 Return on Asset

Return on asset measure the effectiveness of the economic unit in using its assets to generate profit especially manufacturing, the higher this ratio, the better the economic unity of them as it indicates the management efficiency in using its assets to generate profit and also it represents the ratio of how much a has earned on its assets base, and the return on assets (ROA) is can be obtained by dividing net profit with total assets. Adejola *et al* (2024) noted that return on Asset (ROA) is measured as Profit before Tax/Average Total Assets. ROA is a measure of profitability that takes into consideration the assets necessary to produce income. Return on Assets expresses the net income earned by a company as a percentage of the total assets available for use by that company. ROA suggests that companies with higher amounts of assets should be able to earn higher levels of income. ROA measures management's ability to earn a return on the firm's resources (assets). The income amount used in this computation is income before the deduction of interest expense, since interest is the return to creditors for the resources that they provide to the firm. The resulting adjusted income amount is thereby the income before any distribution to those who provided funds to the company. ROA is computed by dividing net income plus interest expense by the company's average investment in asset during the year.

2.2. Empirical Review

Adejola *et al* (2024), examines how sustainability reporting affects the financial performance of Nigerian-listed agriculture and natural resource companies. Using return on assets (ROA) as a proxy for corporate financial performance, the study's particular goals were to ascertain if reporting on economic and social sustainability had an effect on the financial performance of the sampled industries. The annual reports of nine (9) chosen firms were the source of the data from 2014 to 2023. Using the E-Views statistical program, the panel least squares regression approach was used to assess the data. The study found that the financial performance of the examined firms is negatively and insignificantly impacted by reporting on economic and social sustainability. The study concluded that sustainability reporting had no significant effect on the performance of Nigerian listed agriculture and natural resources firms. The study recommends that managers focus on measures that foster a rise in the attributes of economic and social sustainability. The result cannot be generalized for industrial goods because it focuses on agriculture and natural resource firm in Nigeria.

Israel *et al* (2023), examined effect of sustainability reporting practices on the financial performance of listed industrial goods firms in Nigeria. The study adopted an ex-post facto research design and made use of secondary data sourced from annual reports and accounts of the sampled firms. The research work adopted panel data analysis to estimate the relationship between the variables. The result of the analysis showed that economic sustainability practice has a positive but insignificant relationship on change in total asset and positive significant relationship on change in stock price. Environmental sustainability practice has a positive and significant impact on the financial performance while community involvement sustainability practice has a positive and insignificant relationship on financial performance of the listed firms. The study, therefore, concluded that there is significant impact of environmental sustainability reporting practice on financial performance of listed industrial goods firms in Nigeria. The study recommended that the management should as a matter of fact integrate sustainability practices so that the impact can be felt on financial performance of firms. The researcher believe that if a robust data analysis was used the finding could have given a better result and conclusion.

Lawrence (2022), examined the impact of sustainability reporting compliance on the financial performance of listed firms in Nigeria. Secondary data was collected from annual reports of a sample of fifty seven companies listed on the Nigerian Exchange Group. Simple disclosure index was used to score sustainability reporting Compliance using Economic (ECM), Environmental (EVM) Social (SOC) and Governance (GOV) disclosures

in the annual reports of the sampled firms. The firms' financial performance was evaluated based on Net Profit Margin (NPM) and Return on Capital Employed (ROCE). Using least square panel data analysis, the results show that listed companies in Nigeria have significantly complied with the sustainability disclosure guideline. The aggregate average sustainability Reporting Compliance (SRC) by all the firms examined was 75%. It was also found that there is a significant association between sustainability Reporting Compliance and Net Profit Margin (NPM) as well as Return on Capital Employed (ROCE). It was recommended that companies, both local and international should adopt sustainability in their day-to-day policies to be legitimate in their daily activities on the planet and also enjoy better financial performance. The researcher believe that if a robust data analysis was used the finding could have given a good result and conclusion.

Faith and Grace (2022), examined the effect of environmental sustainability disclosure on financial performance of listed oil and gas companies in three countries within sub-Sahara Africa: Nigeria, Namibia, and Kenya. Ex-post facto research design and panel data was collected from fifteen (15) oil and gas listed firms in all three countries of interest within a nine (9) year time frame (2011 to 2019) were utilized. The study employed Robust Least Square Regression analyses technique to test the stated hypotheses. Finding showed that biodiversity and water disclosure significantly affect performance measures of return on equity (positively) and gross profit after tax margin (negatively). The study recommended that environmental sustainability disclosure compliance should be made mandatory for listed oil and gas companies and the guidelines for environmental assessment should be established to compel companies to accommodate environmental disclosure. The study result cannot be generalized for sustainability reporting of industrial goods firm in Nigeria because its scope is limited by 9 years

Ezejiolor and Emeneka (2022), examined the effect of Leverage on Social Sustainability Reporting of listed Oil and Gas firms in Nigeria. Based on the nature of the study, Ex-Post facto research design and content analysis method were adopted. Seven (7) listed Oil and Gas firms in Nigeria constituted the sample size of this study for the years 2010 and 2020. Secondary data were extracted from the annual reports and accounts of the sampled firms and extracts from the annual reports were analyzed using descriptive statistics and inferential statistics such as Pearson Correlation, Panel Least Square (PLS) regression analysis and Hausman test through E-Views 10.0 statistical software. Findings from the empirical analysis showed that Leverage had significant effect on Social Sustainability Reporting in Nigeria. The study recommended that firms should intensify efforts to understand the role of sound environmental practices and disclosures in reducing the cost of debt and enhancing financial performance. If the study used better proxies than leverage it could result in a better conclusion and recommendation.

Nita and Wiwik (2022), examine the effects of disclosure of sustainability, corporate governance mechanisms, and intellectual capital on the return on assets. The population of this study is banking companies listed on the IDX in 2016-2019. The samples were selected based on the criteria of 27 companies over a 4-year period, so that 108 samples were obtained. Regression analysis method on panel data. The results of this study indicate that sustainability disclosure has no significant effect on ROA, frequency of board of Commissioners meetings has a positive and significant effect on ROA, institutional ownership has no significant effect on ROA, and intellectual capital has a positive and significant effect on ROA. It is recommended for further research using samples in different sectors, research periods with a longer period of time, and adding different variables outside of the variables in this study. The scope and methodology are limited to 4 years and the data are obtained were too old to have meaningful bearing to current reality

Emmanuel (2021), examined green accounting disclosure and its effect on financial performance of listed manufacturing firms in Nigeria. Particularly, the study examined the effect of green accounting disclosure on ROA, ROE and share price of manufacturing firms in Nigeria. The ex-post facto research design was employed. Data from the annual reports of forty out of the sixty-six manufacturing companies listed in the Nigerian Stock

Exchange as at 31st December 2019 for the period spanning 2010 – 2019 were used. The descriptive statistics and the panel regression methods were employed for the data analysis. The Arellano and Bond (1991) GMM estimator which controls for potential endogeneity problem was employed to ensure robustness of the parameter. The study findings revealed that green accounting disclosure had a positive significant effect each on ROA and ROE. However, a negative effect subsists between green accounting disclosure and share price of manufacturing firms in Nigeria. The study recommends that manufacturing firms are encouraged to increase the extent of their green accounting activities for ease of assessment by stakeholders for investment decision making. The result cannot generalize for industrial goods firm because it focuses on manufacturing firm in Nigeria.

Nwafor *et al* (2021), examined the effect of green accounting on the financial performance of oil and gas companies 2010-2020. The specific objectives were to determine the effect of: environmental cost accounting and green management accounting on the financial performance of oil and gas companies in Nigeria. A quantitative technique was adopted and Ex post facto research design was employed for the study. Data were obtained from annual reports and accounts of the companies for the periods 2010 to 2020. The results showed that environmental cost accounting has a significant effect on the financial performance of oil and gas companies. Also, the study found that green management accounting has significant effect on the financial performance of oil and gas firms. Therefore, the study recommended that management of oil and gas companies in Nigeria should pay particular attention to environmental cost accounting to enhance the firm's operating environment and the financial performance of the companies. The researcher believe that if a robust data analysis was used the finding could have given a better result and conclusion.

2.3 Theoretical Framework

2.3.1 Stakeholder Theory

Stakeholder theory was developed by Freeman (1984), stakeholder theory has infiltrated the academic dialogue in management and a wide array of disciplines such as health care, law, and public policy (Freeman *et al*, 2014). Much attention has been paid to some basic themes that are now familiar in the literature that firms have stakeholders and should proactively pay attention to them, that stakeholder theory exists in tension (at least) with shareholder theory, that stakeholder theory provides a vehicle for connecting ethics and strategy (Solomon, 2020), and that firms that diligently seek to serve the interests of a broad group of stakeholders will create more value over time (Freeman *et al*, 2014). Nevertheless, there are so many different interpretations of basic stakeholder ideas that theory development has been difficult (Steve, 2020). The underlying assumption of most studies of this type is that economic measures capture the value created through good treatment of stakeholders, thus sidestepping the notion that much of the value stakeholders get from working with stakeholder-friendly firms may not be captured in economic measures. While economic returns are fundamental to a firm's core stakeholders, most stakeholders want other things as well (Bosse *et al*, 2015). Attention to these other factors may prove critical to understanding why firms succeed over time, why stakeholders are drawn to (and remain with) some firms, and which firms do the most for their stakeholders.

A stakeholder-based perspective of value is important from a managerial perspective because managers tend to focus attention on things that lead to higher performance based on what actually gets measured (Kaplan & Norton, 2012; Sachs *et al*, 2010). Rather than focusing primarily on economic measures of performance, a stakeholder-based performance measure challenges managers to examine more broadly the value their firms are creating from the perspective of the stakeholders who are involved in creating it.

2.3.2 Legitimacy Theory

Legitimacy theory was first developed by Dowling and Pfeffer (1975). The concept of legitimacy is important in analysing the relationships between companies and their environment. Parsons (2000) defines legitimacy as “the appraisal of action in terms of shared or common values in the context of the involvement of the action in the social society” This book contains a collection of ten essays. It provides a theory of formal organization. Central constructs of legitimacy research are provided. For example, it distinguishes “authority” from “legitimation” and “authorization. Maurer (2012) points out that legitimacy is the process whereby an organisation justifies to a peer or super ordinate system its right to exist; that is to continue, import, transform, and export energy material or information. Legitimacy theory is derived from the concept of organisational legitimacy, which has been defined as “a condition or status, which exists when an entity's value system is congruent with the value system of the large social system of which the entity is a part.” When a disparity, actual or potential, exists between the two value systems, there is a threat to the entity's legitimacy” (Dowling & Pfeffer, 2015). Preston (2005) point out that legitimacy is conceived as congruence between institutional actions and social values, and legitimization as actions that institutions take either to signal value congruency or to change social value. Legitimacy Theory underpins this study because it argues that organisations seek to ensure that they operate within the bounds and norms of society and conceived as congruence between institutional actions and social values, and legitimization as actions that institutions take either to signal value congruency or to change social value.

3. METHODOLOGY

The study adopted ex-post facto research designs to evaluate the effect of social and economic sustainability reporting on financial performance of industrial goods firms in Nigeria. The design is considered appropriate for the study since it is an after the fact design that explains the relationship between the variables after their occurrence. The population of the study consists of all the 13 firms listed on the Nigerian Exchange Group 2023, while the sample size is 11 firms. Panel regression technique was used to establish the relationship between sustainability reporting and financial performance. The model used to empirically test the hypotheses is adopted from Adejola *et al* (2024) and the functional relationship between the variables is represented below:

$$ROA_{it} = \beta_{0it} + \beta_1 SSR_{it} + \beta_2 GSR_{it} + \epsilon_{it} \dots\dots\dots(i)$$

Where:

β_0 = The autonomous parameter estimate (Intercept or constant term)

$\beta_1 - \beta_2$ = Parameter coefficient of Social and Economic Sustainability Reporting

ROA = Return on Asset

SSR = Social Sustainability Reporting

GSR = Governance Sustainability Reporting

ϵ_{it} = Stochastic Error term

β_0 = Intercept

β_1 to β_3 = Regression Coefficients

4. RESULT AND DISCUSSION

Descriptive Statistics

Descriptive statistics gives a presentation of the mean, maximum and minimum values of variables applied together with their standard deviations obtainable.

Table 4.1: Descriptive Statistics Result**Table 4.1: Descriptive Statistics Result**

	ROA	SSR	GSR
Mean	35.74636	0.257545	0.435754
Median	36.92500	0.235000	0.466667
Maximum	41.86000	0.588000	0.866667
Minimum	21.50000	0.035000	0.133333
Std. Dev.	4.486166	0.154464	0.171028
Skewness	-1.483600	0.292496	0.110158
Kurtosis	4.753311	1.837566	1.911978
Jarque-Bera	54.44255	7.761724	5.648183
Probability	0.000000	0.020633	0.059363
Sum	3932.100	28.32990	47.93297
Sum Sq. Dev.	2193.700	2.600630	3.188318
Observations	110	110	110

Source: E-View 12 Output (2025)

Table 4.1 presents the descriptive statistics of the social and governance sustainability reporting on return on asset of listed industrial firms in Nigeria during the period of 2014 to 2023. The table shows that return on asset (ROA) has a mean of 35.74636, with a standard deviation of 4.486166 as well as a minimum value of 21.50000 and maximum value of 41.86000 respectively. Given that the range between the minimum and maximum is quite wide, it implies unstable return on asset as the standard deviation indicated that there is no much slightly wide dispersion of the data from the mean value. For the other measure of social and governance sustainability reporting shows a mean of value of 0.257545 and 0.435754 with standard deviation of 0.154464 and 0.171028 with a minimum and maximum value of 0.03500, 0.133333, 0.58800 and 0.86666 respectively. This implies social and governance sustainability reporting witnessed a marginal increase during the study period, as the standard deviation is so large compared to the mean, together with the high range between the minimum and maximum values.

Correlation Analysis

Correlation analysis measure relationship values between dependent and independent variables and the correlation among the independent variables themselves.

Table 4.2: Correlation Matrix

Correlation Probability	ROA	SSR	GSR
ROA	1.000000 -----		
SSR	-0.073790 0.4436	1.000000 -----	
GSR	-0.166836 0.0815	0.196351 0.0398	1.000000 -----

Source: E-View 12 Output (2025)

In table 4.2 correlation analysis, which is used to quantify the association between two continuous variables. In correlation analysis, the study estimate a sample correlation coefficient, more specifically the Pearson Product Moment correlation coefficient. The sign of the correlation coefficient indicates the direction of the association. The analysis continues in this section in determining the degree of linear association between the sustainability reporting variables in pairs employing E-views 12 Statistical package. The result presented above confirms that social and governance sustainability reporting has negative correlation of -0.073790 and -0.166836 with return on asset.

Hausman Test

The Hausman test is a test for model specification in panel data analysis and this test is employed to choose between fixed effects model and the random effects model. Due to the panel nature of the data set utilized in this study, both fixed effect and random effect regressions were run. Hausman specification test was then conducted to choose the preferred model between the fixed effect and the random effect regression models. Thus, the decision rule for the Hausman specification test is stated thus; at 5% Level of significance:

Table 4.3: Hausman Test

Correlated Random Effects - Hausman Test

Equation: Untitled

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	3.838138	2	0.1467

Source: E - View 12 Output (2025)

The Result of Hausman test shows that chi-square statistics value is 3.838138 while the probability values of it is 0.1467. This implies that there is enough evidence to accept the alternate hypothesis which states that random effect is most appropriate for the Panel Regression analysis. It thus stands that error component model (fixed effect) estimator is not the most appropriate because the random effects are well correlated with the regressors. Thus, the most consistent and efficient estimation for the study is the random effect cross-sectional model. Consequently, the result suggests that the random effect regression model is most appropriate for the sampled data because the Hausman test statistics as represented by corresponding probability value is greater than 5%.

Table 4.4: Panel Regression Result (Random Effect)

Dependent Variable: ROAMethod: Panel EGLS (Cross-section random effects)

Date: 02/08/25 Time: 09:45

Sample: 2014 2023

Periods included: 10

Cross-sections included: 11

Total panel (balanced) observations: 110

Swamy and Arora estimator of component variances.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	39.81516	1.431083	27.82169	0.0000
SSR	-3.176043	2.767958	-1.147432	0.2538
GSR	-7.460214	2.606991	-2.861619	0.0051
Effects Specification				
			S.D.	Rho
Cross-section random			2.369580	0.2847
Idiosyncratic random			3.756327	0.7153
Weighted Statistics				
Root MSE	3.736436	R-squared		0.597547
Mean dependent var	16.01932	Adjusted R-squared		0.580679
S.D. dependent var	3.951195	S.E. of regression		3.788454
Sum squared resid	1535.705	F-statistic		5.782894
Durbin-Watson stat	0.853622	Prob(F-statistic)		0.004123

Source: E-View 12 Output (2025)

From table 4.7 above, the coefficient of multiple determinations (R^2) is 0.5975 and in line with the panel nature of the data used in this study, the regression model shows that the range of values between adjusted R^2 and R^2 falls between 59%, and 58% respectively. This indicates that about 64% of the total variations in return on asset (ROA) is explained by the variations in the independent variables (SSR and GSR), while the remaining 41% of the variation in the model is captured by the error term, which further indicates that the line of best fit is highly fitted. The panel regression result for the sampled of industrial goods firms as presented in table 4.7 above showed that there is a negative and insignificant relationship between social sustainability reporting, governance sustainability reporting and return on asset with a corresponding P-Value of 0.2538 and 0.0051. However, respective probability values, the parameter estimate for social sustainability reporting and governance sustainability reporting is positive and insignificant, given that the individual probability is 0.2538 and 0.0051 which is less than 5%. However, when taken collectively, the regressors (SSR and GSR) against the regressed return on asset (ROA), the value of F-statistic is 5.782894 and the value of the probability of F-statistic is 0.004123. This result implies that the overall regression is both positive and statistically significant at 5%.

.2 Discussion of Findings

This study examined effect of sustainability reporting on financial performance of listed industrial goods firm in Nigeria. Therefore, the findings of this study is on the basis of formulated hypotheses, models and analysis carried out.

Firstly assess of social sustainability reporting and return on asset of listed industrial goods firms in Nigeria revealed that a negative coefficient value of -3.176043 and insignificant P-value of 0.2538 effect on listed industrial goods firm in Nigeria. The findings of this study did not agree with the findings Emmanuel (2021) with study because a positive result was discovered by its study. But the finding of Adejola *et al* (2024), agree with the

study who examines how sustainability reporting affects the financial performance of Nigerian-listed agriculture and natural resource companies. Secondly, examine effect of governance sustainability reporting and return on asset have a negative coefficient value of -7.460214 but has significant P-value of 0.0051 effect on listed industrial goods firms in Nigeria. The result agrees with the findings of Israel *et al* (2023), examined effect of sustainability reporting practices on the financial performance of listed industrial goods firms in Nigeria. But the finding of Onaja *et al* (2021), who found a negative association between social sustainability reporting and performance of the firms. The implication is that social and economic sustainability reporting has significantly improve return on asset of listed industrial goods firms in Nigeria because of its positive effect of the industrial goods firms.

5. CONCLUSION AND RECOMMENDATIONS

The study examine the sustainability reporting on financial performance of listed industrial goods firms in Nigeria from 2014-2023 in Nigeria. The overall result has significant effect on the return on asset of listed industrial goods firms in Nigeria Therefore, study conclude that social and economic sustainability reporting has a positive and significant effect on return on asset of listed industrial goods firms in Nigeria.

Based on the findings of this study and the conclusion made, the study recommend that;

- i. Management of listed industrial goods firms in Nigeria should voluntarily comply with social sustainability reporting and should compel for sustainability reporting disclosure because of positive multiplier effect on return on asset of industrial goods firms in Nigeria.
- ii. Management of the industrial goods firm should as a matter of fact integrate more governance sustainability reporting as result of effect on financial performance of firms.

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Raw Data

COMPANY	COD E	YEAR S	ROA	GSR	SSR	FA
AutinLAZ Coy Plc	1	2014	21.5	0.251	0.294	9
AutinLAZ Coy Plc	1	2015	22.64	0.417	0.294	10
AutinLAZ Coy Plc	1	2016	30.87	0.417	0.294	11
AutinLAZ Coy Plc	1	2017	34.08	0.333	0.294	12
AutinLAZ Coy Plc	1	2018	32.65	0.667	0.294	13
AutinLAZ Coy Plc	1	2019	36.09	0.417	0.235	14
AutinLAZ Coy Plc	1	2020	32.8	0.511	0.235	15
AutinLAZ Coy Plc	1	2021	34.4	0.333	0.233	16
AutinLAZ Coy Plc	1	2022	35.6	0.333	0.176	17
AutinLAZ Coy Plc	1	2023	32.98	0.833	0.174	18
Berger Paint Plc	2	2014	32.09	0.251	0.117	16
Berger Paint Plc	2	2015	33.12	0.251	0.117	17
Berger Paint Plc	2	2016	32.51	0.251	0.117	18
Berger Paint Plc	2	2017	23.6	0.583	0.117	19
Berger Paint Plc	2	2018	35.87	0.251	0.294	20
Berger Paint Plc	2	2019	37.9	0.333	0.294	21
Berger Paint Plc	2	2020	37.98	0.416	0.117	22
Berger Paint Plc	2	2021	38.02	0.416	0.117	23
Berger Paint Plc	2	2022	32.98	0.417	0.116	24
Berger Paint Plc	2	2023	39.7	0.250	0.117	25
Beta Glass Plc	3	2014	35.09	0.166	0.352	10
Beta Glass Plc	3	2015	36.08	0.166	0.411	11
Beta Glass Plc	3	2016	35.67	0.250	0.411	12
Beta Glass Plc	3	2017	36.98	0.500	0.411	13
Beta Glass Plc	3	2018	36.23	0.250	0.411	14
Beta Glass Plc	3	2019	35	0.333	0.588	15
Beta Glass Plc	3	2020	37.34	0.250	0.117	16
Beta Glass Plc	3	2021	36.98	0.250	0.588	17
Beta Glass Plc	3	2022	37.97	0.333	0.117	18
Beta Glass Plc	3	2023	38.98	0.333	0.117	19
Cap Plc	4	2014	39.65	0.417	0.176	17
Cap Plc	4	2015	39.67	0.333	0.235	18
Cap Plc	4	2016	40.9	0.416	0.294	19
Cap Plc	4	2017	35.87	0.417	0.352	20
Cap Plc	4	2018	36.98	0.417	0.294	21
Cap Plc	4	2019	37.76	0.250	0.294	22
Cap Plc	4	2020	38.76	0.250	0.291	23
Cap Plc	4	2021	39.65	0.583	0.117	24
Cap Plc	4	2022	39.54	0.416	0.112	25

Cap Plc	4	2023	40.43	0.166	0.058	26
Cutix Plc	5	2014	24.76	0.833	0.058	7
Cutix Plc	5	2015	24.87	0.916	0.058	8
Cutix Plc	5	2016	25.64	0.500	0.470	9
Cutix Plc	5	2017	26.75	0.583	0.176	10
Cutix Plc	5	2018	27.98	0.583	0.176	11
Cutix Plc	5	2019	30.56	0.583	0.176	12
Cutix Plc	5	2020	37.98	0.583	0.176	13
Cutix Plc	5	2021	39.01	0.583	0.117	14
Cutix Plc	5	2022	38.98	0.750	0.116	15
Cutix Plc	5	2023	39.98	0.750	0.058	16
Dangote Cement	6	2014	33.08	0.750	0.352	8
Dangote Cement	6	2015	34.5	0.417	0.235	9
Dangote Cement	6	2016	35.43	0.417	0.352	10
Dangote Cement	6	2017	36.54	0.167	0.291	11
Dangote Cement	6	2018	37.89	0.167	0.058	12
Dangote Cement	6	2019	38.76	0.167	0.117	13
Dangote Cement	6	2020	39.54	0.167	0.117	14
Dangote Cement	6	2021	39.09	0.500	0.058	15
Dangote Cement	6	2022	40.56	0.417	0.058	16
Dangote Cement	6	2023	40.54	0.417	0.058	17
Greif Nig	7	2014	23.76	0.333	0.294	9
Greif Nig	7	2015	33.97	0.500	0.352	10
Greif Nig	7	2016	23.87	0.333	0.352	11
Greif Nig	7	2017	35.09	0.583	0.353	12
Greif Nig	7	2018	36.98	0.417	0.411	13
Greif Nig	7	2019	38.09	0.250	0.352	14
Greif Nig	7	2020	39.54	0.833	0.411	15
Greif Nig	7	2021	39.76	0.333	0.176	16
Greif Nig	7	2022	39.87	0.333	0.117	17
Greif Nig	7	2023	40.98	0.083	0.117	18
Larfarge Africa Plc	8	2014	33	0.083	0.117	6
Larfarge Africa Plc	8	2015	34	0.167	0.117	7
Larfarge Africa Plc	8	2016	35	0.250	0.176	8
Larfarge Africa Plc	8	2017	36	0.417	0.114	9
Larfarge Africa Plc	8	2018	36	0.417	0.235	10
Larfarge Africa Plc	8	2019	35.05	0.417	0.352	11
Larfarge Africa Plc	8	2020	35.87	0.833	0.353	12
Larfarge Africa Plc	8	2021	37.87	0.250	0.352	13
Larfarge Africa Plc	8	2022	38.09	0.833	0.411	14
Larfarge Africa Plc	8	2023	39.55	0.750	0.411	15
Meryer Plc	9	2014	34	0.333	0.176	9
Meryer Plc	9	2015	34.87	0.333	0.413	10

Meryer Plc	9	2016	34.76	0.750	0.470	11
Meryer Plc	9	2017	35.65	0.750	0.471	12
Meryer Plc	9	2018	36.87	0.750	0.529	13
Meryer Plc	9	2019	38.01	0.750	0.524	14
Meryer Plc	9	2020	38.77	0.500	0.411	15
Meryer Plc	9	2021	39.44	0.750	0.470	16
Meryer Plc	9	2022	40.06	0.750	0.471	17
Meryer Plc	9	2023	41.86	0.750	0.470	18
Premier Paint Plc	10	2014	24.98	0.167	0.478	6
Premier Paint Plc	10	2015	34.8	0.333	0.472	7
Premier Paint Plc	10	2016	32.6	0.250	0.529	8
Premier Paint Plc	10	2017	35.9	0.250	0.411	9
Premier Paint Plc	10	2018	36.65	0.417	0.529	10
Premier Paint Plc	10	2019	35.7	0.500	0.529	11
Premier Paint Plc	10	2020	38.97	0.417	0.117	12
Premier Paint Plc	10	2021	39.54	0.333	0.058	13
Premier Paint Plc	10	2022	38.87	0.417	0.058	14
Premier Paint Plc	10	2023	39.78	0.417	0.052	15
Tripple Gee Company	11	2014	35.42	0.167	0.058	20
Tripple Gee Company	11	2015	37.65	0.167	0.058	21
Tripple Gee Company	11	2016	36.98	0.250	0.035	22
Tripple Gee Company	11	2017	38.76	0.250	0.113	23
Tripple Gee Company	11	2018	36.98	0.250	0.117	24
Tripple Gee Company	11	2019	39.21	0.345	0.053	25
Tripple Gee Company	11	2020	39.09	0.324	0.352	26
Tripple Gee Company	11	2021	39.12	0.322	0.355	27
Tripple Gee Company	11	2022	39.45	0.352	0.456	28
Tripple Gee Company	11	2023	39.67	0.333	0.453	29
Source: Computation from financial statement firm (2023)						

Moderating Effect of Anchor Borrower Programme on the Relationship between Attitude of Small Entrepreneurs and Income Tax Compliance in Borno State, Nigeria

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ABSTRACT

This study examines the moderating effect of the Anchor Borrower Program (ABP) on the relationship between the attitudes of Small Scale Enterprise (SSE) owners and their income tax compliance in Borno State, Nigeria. Taxation is essential for generating public revenue, yet low tax compliance remains a significant challenge in developing countries, particularly in regions facing socio-political and economic instability. Through a combination of descriptive and inferential statistics, including Partial Least Squares Structural Equation Modelling (PLS-SEM), the study analyses the data collected from 255 SSE owners in the region. The findings indicate that while attitudes have a weak but statistically significant positive effect on income tax compliance, the ABP does not significantly moderate this relationship. The study suggests that while positive attitudes toward tax compliance are crucial, government interventions, such as ABP, may require more targeted strategies to influence compliance behaviours effectively. This study therefore, recommends ABP be redesign accommodate tax compliance as prerequisites, this will enhance tax compliance among small business owners in Borno State.

Keywords:

Tax Compliance, ABP, Attitude, Moderating Effect and Income Tax.

Introduction

Socio-political and economic significance of taxation as a main source for generating the necessary resources for public infrastructure and development can never be overemphasized. Taxation serves as a crucial mechanism for financing government activities and facilitating national growth (Deyganto, 2018). According to Mustapha et al. (2017), taxes are mandatory levies imposed by governments to secure the financial resources required for public expenditures, and a well-organised tax system helps to mobilise internal resources efficiently. Hence, tax is important source of revenue to every government, it is the only source that ensures sustainable funding of the government activity. This is because, it is the present generation that provide for the funding of the activities, unlike mineral exploration or borrowing which has future effects. However, it depends largely on the willingness of the individual taxpayers.

Success taxation to raise taxes as the mechanism of funding public expenditure largely depends on the

compliance level of the taxpayers with the tax regulations of the country (Safian & Ngah, 2020). According to Mustapha and Dandago, (2024) though the government is trying to raise money to fund public expenditure by taxing entrepreneurs, they see tax as additional liability on their revenue. Hence, as entrepreneurs are trying to reduce cost for saving and expansions, tax compliance might be hindered. In many developing countries, tax authorities face significant challenges, including political and economic instability, ineffective tax systems, and widespread tax evasion and avoidance. These challenges are often worsened by low tax morale and negative attitudes income toward tax. In Nigeria, for instance, low tax compliance remains a persistent issue, as highlighted by Momoh (2018) and Olusegun (2021).

Furthermore, Kumshe et al. (2017) examines the determinants of tax compliance among self-employed individuals in Borno State, Nigeria, emphasized the critical role of behavioural factors like socio-political and psychological factors do influence tax compliance behaviour of individual taxpayer. Similarly, according Mukhlis et al., (2015) it is believed that, governmental activities and public sector performance can shape taxpayers' attitudes. Hence, government financial interventions to entrepreneurs and enterprises could enhance or shape taxpayers' attitude toward income tax from negative to positive.

Despite the importance of taxation in funding public expenditures, many citizens engage in negative tax behaviours, such as underreporting or delaying their tax obligations to reduce liabilities (Amina & Saniy, 2015; Muflihah & Nuswantara, 2021). The conflict of interest between governments aiming to maximize revenue and taxpayers seeking to minimize their liabilities is a practical challenge in understanding enterprise owners' tax compliance behaviours. Some researchers argue that well-informed enterprise owners are less likely to engage in negative tax compliance behaviours, as governmental activities and public sector performance can shape taxpayers' attitudes (Appah & Wosowei, 2016).

The efficiency of governance, bureaucratic quality, rule of law, and levels of corruption are considered critical factors in shaping government performance (Amanamah, 2016; Yahaya et al., 2022). Government commitment to these factors significantly impacts tax compliance behaviour. Studies by Safian and Ngah (2020) and Yahaya et al. (2022) further highlight the importance of government effectiveness, transparency, and attitudes in shaping taxpayer compliance. In Nigeria, Olusegun (2021) identified factors such as tax complexity, deterrence, and information as key determinants influencing tax compliance among SMEs, while tax rates and compliance costs had less impact.

Furthermore, Yahaya et al. (2022) identified that, government attitudes and transparency strongly influence taxpayers' willingness to comply. Hence, government financial interventions to enterprises and entrepreneurs may influenced decisions for voluntary tax compliance. While studies like Eze and Nduka (2023), Ogunlela, Bello, and Adebisi (2023), Mustapha and Babatunde (2023), and Adebayo and Adeola (2023), have explored the importance of tailored incentives, economic growth programmes, simplified tax systems, and taxpayer education in improving compliance, therefore, moderating role of government financial interventions (GFI), such as the Anchor Borrower Program (ABP), on the relationship between attitude of SSE owners and tax compliance, particularly in a place like Borno State is an empirical research gap

Similarly, existing studies lack sufficient focus on the behavioural analysis of SSE owners with specific quantitative models that incorporate moderating variables like GFI ABP. Furthermore, gap exist in integrating behavioural tax compliance models with economic empowerment frameworks to explain how ABP can bridge compliance challenges. However, Pampel et al. (2019) suggested that regional studies, rather than cross-national experiments, could provide more reliable insights into attitude and tax compliance. Given Borno State's unique economic activities and tax administration conditions, offers a distinct setting for studying tax

compliance. This paper therefore, aims to examine the moderating effect of the Anchor Borrower Programme on the relationship between attitude of Small Scale Enterprise (SSE) owners and their income tax compliance in Borno State, Nigeria. By exploring this relationship, the study will contribute to a deeper understanding of the factors influencing tax compliance in developing nations, with specific insights into the role of ABP in enhancing voluntary compliance among small enterprise owners in the region.

Conceptual Review

Taxation is a fundamental tool for government revenue generation, enabling the provision of public services and infrastructure. It is a mandatory financial charge imposed on individuals and businesses without direct benefits in return (Musgrave & Musgrave, 1989). Taxes are classified based on incidence, rates, and base, with a key distinction between direct and indirect taxes. Direct taxes, such as income tax, are levied on individuals and corporations and cannot be transferred, whereas indirect taxes, like Value Added Tax (VAT), are collected by intermediaries and ultimately borne by consumers (Adebisi & Gbegi, 2013). While direct taxes promote equity, they are susceptible to evasion, whereas indirect taxes are more difficult to evade but depend on intermediary compliance (James & Alley, 2004).

Income tax in Nigeria consists of Personal Income Tax, Companies Income Tax, Capital Gains Tax, and Withholding Tax. Personal Income Tax is imposed progressively on individuals, while company income tax varies by turnover, with companies with a turnover of: 100 million naira and above pay 30%; greater than 25 million naira and less than 100 million naira pay 20%; and less than 25 million naira pay 0% every of assessment (Inim et al., 2020; Federal Inland Revenue Service, 2021; and PwC, 2024). However, a minimum tax of 0.5% of gross turnover is payable by a company having no taxable profits for the tax year or where the tax on profits is below the minimum tax.

Similarly, companies in the first four of commencement, primary agriculture companies and small companies are exempt from minimum tax (PwC, 2024). Capital Gains Tax applies to asset sales, and Withholding Tax ensures deductions at the source. Tax compliance is measured by the “tax gap,” the difference between potential and actual revenue collected (Alm, 2012). Tax compliance behaviour varies, ranging from committed taxpayers to those who exploit legal loopholes to minimise liabilities. While factors influencing tax compliance include awareness, trust in tax authorities, and perceived fairness of the tax system (Kirchler, 2007).

There are some factors responsible for tax compliance, including financial capacity, social norms, economic conditions, institutional strength, and demographic influences. That is, some taxpayers willingly comply due to a sense of civic duty, while others evade taxes due to financial hardship or distrust in government (Torgler, 2003). In order to overcome negative tax attitude, Authorities employ tax education, tax audits, and penalties to improve compliance and mitigate revenue losses. Tax noncompliance is a major challenge in developing economies where tax revenues often fall short of public expenditure needs (Cobham, 2005). Despite frequent tax reforms, personal income tax remains underutilised in many economies (Bird & Zolt, 2005).

To enhance tax compliance, tax authorities make reference to the Australian Taxation Office (ATO) Compliance Model (Braithwaite, 2007). This model categorises taxpayers based on willingness to comply and uses education, facilitation, and enforcement to improve compliance. Those with lower resistance to tax authorities are more likely to comply, whereas disengaged taxpayers require stricter enforcement (OECD, 2010). An effective tax system depends on efficient administration, trust in authorities, and a balance between education and enforcement. Strengthening institutions, simplifying processes, and promoting voluntary compliance are crucial for increasing revenue and fostering economic growth (Fjeldstad & Semboja, 2001). Therefore, it will vital to examine the influence of government intervention in relation to tax compliance.

Anchor borrower is a government intervention programme of the Central Bank of Nigeria (CBN), in order to achieve its developmental mandate, it aims to create a direct linkage between smallholder farmers (SHFs) and the anchor companies that are engaged in the processing of key agricultural commodities (CBN, 2020). The programme provides farm inputs both in kind and cash (to cover farm labour costs) to SHFs. It is intended to boost agricultural production, stabilize the supply of inputs to agro-processors, and to reduce Nigeria's negative balance of payments on food. Upon harvest, the SHFs supply their produce to the anchor companies, which then pays the cash equivalent directly into the farmers' accounts. Hence, the concepts and model discussed indicates there is relationship between attitudes of taxpayer and his tax compliance behaviour, similarly governmental interventions can also shape tax attitude of a taxpayer.

Empirical Review

The study further conduct empirical review to examine relationship between the variable of the study. Nkwe (2013) assessed relationship between attitudes and tax compliance behaviour by identifying factors which influence taxpayers' attitudes, 200 taxpayers were sampled and administered with closed-ended questionnaire. 180 responses were analysed using descriptive statistics and Chi-Square correlation coefficient, and found a strong positive correlation ($r = 0.9412$, $p < 0.05$) between taxpayer attitudes and compliance behaviour among Botswana SMEs, though the study's limited statistical tools suggest the need for further research using robust methods.

Similarly, Kuria and Omboi (2016) investigated the effect of taxpayers' attitudes on tax compliance, used a cross-sectional survey of top 100 SMEs in Kenya. the study focus on level of tax compliance, the impact of taxpayers' attitudes, and taxpayers' perception of government accountability, 35 firms were sampled and data was analysed using regression techniques. The findings revealed taxpayers' perception on tax had a significant effect on compliance behaviour, but perceptions on government accountability and tax laws had an insignificant impact on taxpayers' attitudes and compliance. While Jayawardane and Low (2016) examined attitudes and Tax Compliance decisions, sampled 200 respondents. The analysis using descriptive statistics and a Chi-square revealed attitudes has significant effect on tax compliance, and poor attitude of Government spending had negative significant effect on tax compliance. The study indicates governments' spending can influence tax compliance.

Tehulu (2016) examined factors influencing tax compliance attitude, 600 were sampled but 387 responses were analysed using Ordered Logistic Regression result reveals, tax compliance attitude is not affected by gender, tax category, and age of the taxpayer. While religion, educational background, and knowledge of the taxpayer has significant effect on tax compliance attitude. Similarly, Deyganto (2018) examined large taxpayers' category to identify the determinants of tax compliance attitude. A cross-sectional Survey of 291 taxpayers using binary logistic regression model and Pearson correlation matrix showed that gender, age, tax knowledge, simplicity of the tax system, perception of fairness and tax rate, awareness of penalty, and probability of audit were determinants of tax compliance attitude. While education level and tax authority efficiency have no significant impact on tax compliance attitude.

Furthermore, Pampel et al. (2019) extended the discussion through cross-national experiments, finding mixed results on institutional and cultural influences on compliance, further highlighting the variability of tax behaviour across regions. Safian and Ngah (2020) examined tax compliance and attitude of the taxpayers 120 civil servants participated as respondents. The data were analysed using Pearson Correlation. The finding concludes that there is a significant positive relationship between attitude of taxpayers and their tax compliance behaviour. Olusegun (2021) assessed economic and behavioural determinants of tax compliance behaviour of SMEs, 392 participated using ordinary least squares (OLS), findings showed that tax system complexity, tax

deterrence sanction, tax non-compliance opportunity, tax information, as well as tax attitude and perception are important determinants of tax compliance behaviour, while tax rate and tax compliance cost may not have a significant influence.

Yahaya et al. (2022) examined effect of government attitudes on voluntary tax compliance, used questionnaires, 296 responses were found useful and responses were analysed using SEM- PLS findings show: government effectiveness, tax authority transparency, and government attitude has significant effect on voluntary tax compliance. Similarly, Mustapha and Dandago (2024) examined moderating effect of micro, small and medium scale enterprise development fund (MSMEDF) on the relationship between norm and tax compliance, 225 responses were used and result showed a significant effect of norm on tax compliance while MSMEDF has insignificant moderating effect on their relationship.

Theory of Planned Behaviour (TPB)

The Theory of Planned Behaviour (TPB), developed by Icek Ajzen, expands on the Theory of Reasoned Action by integrating additional components to better explain human behaviour. the suggest that stronger intentions lead to a higher likelihood of human behaviour. according to the theory behaviour is jointly influenced by three components: attitude for the behaviour (personal evaluation of the action), subjective norm (perceived social pressure to perform or not to perform the action), and perceived behavioural control (the perceived ease or difficulty of performing the action). These factors shape a person's behavioural intentions, which, when combined with actual control over the behaviour, determine whether it is carried out.

The Theory of Planned Behaviour (TPB) posits that both intention and ability are essential for achieving a specific behaviour, with intention reflecting an individual's motivation to act. The theory emphasizes that motivation and ability interact to influence behavioural outcomes, where stronger intention leads to higher likelihood of behaviour execution. TPB is particularly effective in understanding the behaviour of Small Scale Enterprise (SSE) owners regarding tax compliance, as it explains how attitude, to act in a particular way shape intentions and actions. In the context of this study, attitude is seen as crucial in influencing SSE owners' tax compliance behaviour, illustrating the applicability of the TPB within their socio-economic environment. Hence, this study chooses TPB to underpin it.

Methodology

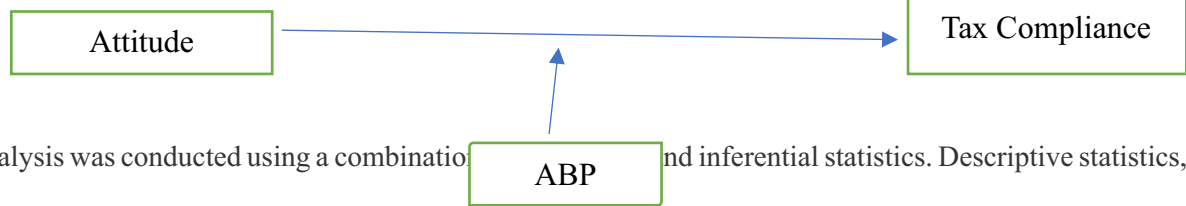
The population consisted of 1,250 active self-employed taxpayers registered with the Borno State Internal Revenue Service (BSBIR), of which 800 were identified as small self-employed taxpayers. A sample size of 334 SSE owners was determined using Yaro Yamani's formula, with an additional 25% included to account for potential missing responses. The study adopted a multi-stage sampling technique: first, all senatorial districts were included, followed by grouping SSE owners into farming, commerce, and trading categories. Questionnaires were then randomly administered within these groups.

Tax Compliance

Research Framework

Attitude

Research Framework



Data analysis was conducted using a combination of ABP and inferential statistics. Descriptive statistics,

including percentages, means, standard deviations, and histograms, were used to assess data skewness and fitness. For inferential analysis, Partial Least Squares Structural Equation Modeling (PLS-SEM) was employed at a 5% significance level. The tool is consistent in the methodologies of prior studies like: Nkwe, (2013); Appah and Wosowei, (2016); Huzaimi et al., (2021); and Mustapha and Dandago (2024). This rigorous methodology ensured robust findings and provided an empirical basis for evaluating the relationship between attitude and tax compliance in the study area. The model developed for the study captures these analytical dimensions effectively.

$$\begin{aligned}
 \text{AtTC} &= \alpha + \beta_1\text{At1} + \beta_2\text{At2} + \beta_3\text{At3} + \beta_4\text{At4} + \beta_5\text{At5} + \varepsilon \\
 \text{abPTC} &= \alpha + \beta_1\text{ab1} + \beta_2\text{ab2} + \beta_3\text{ab3} + \beta_4\text{ab4} + \beta_5\text{ab5} + \varepsilon \\
 \text{ATCB} &= \alpha + \beta\text{AbP} + \beta\text{AtTC} + \varepsilon
 \end{aligned}$$

Where:

AtTC = Attitude to tax compliance
 abPTC = ABP and tax compliance behaviour
 ATCB = moderating effect of ABP on tax compliance behaviour
 a = constant
 β = beta coefficient
 β₁At₁ – β₅At₅ = beta coefficient of questions one – five
 β₁ab₁ – β₅ab₅ = beta coefficient of questions one – five
 ε = error term

Results and Discussion

Table 1: Response Rate

ITEM	FREQUENCY	(%)
Distributed copies of the questionnaires	334	100
Returned copies of the questionnaires	302	90
Not Returned copies of the questionnaires	32	10
Incomplete copies of the questionnaires	47	16
Useful copies of the questionnaires	255	84

Source: Field Survey, 2024

The Useful copies of questionnaires are 255 which is 84% of the questionnaire administered but it is 96% according to Taro Yamani's sample size estimation of 267.

Table 2 Descriptive Statistics

	Mean	Std. Deviation	Observation
Income	3.453	1.0698	255
Attitude	3.807	1.2224	255
Anchor	3.629	.9959	255

The descriptive statistics provide insights into the distribution of Income, Attitude, and Anchor across 255

Source: Field Survey, 2024

observations. Income has a mean of 3.453 with a standard deviation of 1.0698, indicating that the average response is slightly above the midpoint, with moderate variability in responses. Attitude has a mean of 3.807 and a standard deviation of 1.2224, suggesting a generally positive attitude but with greater variability in responses compared to Income. Anchor has a mean of 3.629 and a standard deviation of 0.9959, meaning responses are fairly consistent with less variation compared to Attitude. Overall, the results suggest that respondents generally exhibit positive attitudes and moderate income levels, with Attitude showing the highest variation among the three variables.

Table 3 Correlation Matrix of Exogenous Latent Construct

	Attitude	IncTax	Anchor Borrow
Attitude	1.0000		
IncTax	0.7435	1.0000	
Anchor Borrow	0.3988	0.4157	1.0000

Source: SPSS Output

The correlation matrix provides insights into the relationships between Attitude, Income Tax Compliance (IncTax), and Anchor Borrower. *Attitude and Income Tax Compliance* ($r = 0.7435$): There is a strong positive correlation. *Attitude and Anchor Borrower* ($r = 0.3988$): A moderate positive correlation indicates that attitude has some effect of anchor borrower on it but is not as strongly related as it is to tax compliance. *Income Tax Compliance and Anchor Borrowing* ($r = 0.4157$): A moderate positive relationship suggests that compliance with income tax obligations is somewhat linked to borrowing behaviour, possibly due to financial discipline or regulatory requirements.

Table 4 Loadings, Composite Reliability, and Average Variance Extracted

Table 4 Loadings, Composite Reliability, and Average Variance Extracted

	Factor Loading	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Income Tax Compliance		0.883	0.886	0.915	0.683
I1	0.794				
I2	0.819				
I3	0.869				
I4	0.867				
I5	0.778				
Attitude		0.851	0.859	0.894	0.629
A1	0.668				
A2	0.817				
A3	0.864				
A4	0.812				
A5	0.791				
Anchor Borrowing		0.874	0.886	0.907	0.662
AB1	0.818				
AB2	0.823				

AB3	0.799				
AB4	0.814				
AB5	0.814				

Source: Smart-PLS Output

The table provides key metrics for evaluating the reliability and validity of the factors associated with Income Tax Compliance, Attitude, and Anchor Borrower.

Factor Loadings: The factor loadings for individual items (e.g., I1, I2, I3, etc.) are high across all constructs, with values ranging from 0.778 to 0.869 for Income Tax Compliance, 0.668 to 0.864 for Attitude, and 0.799 to 0.823 for Anchor Borrowing. These values indicate that each item contributes meaningfully to its respective latent variable, with all loadings well above the threshold of 0.7.

Cronbach's Alpha (α): Income Tax Compliance (0.883), Attitude (0.851), and Anchor Borrowing (0.874) have high Cronbach's alpha values, which suggest good internal consistency, meaning that the items within each construct are measuring the same underlying concept reliably.

Composite Reliability (ρ_a and ρ_c): For Income Tax Compliance, Attitude, and Anchor Borrowing, both ρ_a and ρ_c values are above the generally accepted threshold of 0.7, with ρ_a values ranging from 0.886 to 0.915 and ρ_c values from 0.894 to 0.907. These high values indicate that the constructs are reliably measured, and the items within each factor are consistent in measuring the underlying concepts.

Average Variance Extracted (AVE): The AVE values for all three constructs—Income Tax Compliance (0.683), Attitude (0.629), and Anchor Borrowing (0.662) are above the acceptable threshold of 0.5, suggesting that each construct explains a substantial proportion of the variance in its items. These values reflect good convergent validity, indicating that the measures capture the intended concepts effectively.

In summary, the high factor loadings, Cronbach's alpha, composite reliability, and AVE values suggest that the constructs of Income Tax Compliance, Attitude, and Anchor Borrowing are measured with good reliability and validity, making them suitable for further analysis.

Table 5 Hypothesis Testing

Table 5 Hypothesis Testing

Path	Beta	T-statistics	P values
Attitude -> Income Tax Compliance	0.087	1.931	0.05
Anchor Borrowing -> Income Tax Compliance	0.061	0.701	0.484
Anchor Borrowing x Attitude -> Income Tax Compliance	0.108	0.614	0.539

Source: Developed by Researcher, (2024)

The table presents the results of path coefficients, their statistical significance, and associated p-values for the relationships between Attitude, Anchor Borrowing, and Income Tax Compliance. Here's the interpretation:

Attitude → Income Tax Compliance:

Beta = 0.087: This path coefficient indicates a small positive relationship between Attitude and Income Tax Compliance. *T-statistics = 1.931:* The t-statistic suggests that the relationship is marginally significant, at a 0.05 level. Therefore, we can conclude that Attitude has a statistically significant, though small, positive influence on Income Tax Compliance. Tehulu (2016) using OLS opined that, factors influencing tax compliance includes attitude among others while, Nkwe (2013) used Chi-Square correlation coefficient, says there is a strong positive correlation between attitudes and compliance behaviour in Botswana. This difference justified claims

of Pampel et al. (2019) that difference in study area can difference in empirical results and the use of SEM-PLS. Furthermore, it also justifies, TPB which says intention to behave is influenced by three factors of attitude, norm and perceived behaviour.

Anchor Borrowing → Income Tax Compliance:

Beta = 0.061: The path coefficient is positive, but indicating a very weak positive effect of Anchor Borrowing on Income Tax Compliance. *T-statistics = 0.701*: The t-statistic is well below the threshold of 1.96, indicating the relationship is not statistically significant. And *P-value = 0.484*: is greater than 0.05 suggests that Anchor Borrowing does not have a significant direct effect on Income Tax Compliance. This finding is Kuria and Omboi (2016) and Mustapha and Dandago (2024), that is, perception on government spending and MSMEDF has insignificant effect on tax compliance respectively and is different from Deyganto (2018) which says perception of government fairness, and Yahaya et al. (2022) which says government effectiveness, has significant effect on tax compliance.

Anchor Borrowing x Attitude → Income Tax Compliance:

Beta = 0.108: This indicates a weak positive interaction effect between Anchor Borrowing and Attitude on Income Tax Compliance. *T-statistics = 0.614*: The low t-statistic indicates the interaction is not statistically significant. *P-value = 0.539*: is greater than 0.05, the interaction between Anchor Borrowing and Attitude does not significantly influence Income Tax Compliance. this finding also similar to that of Mustapha and Dandago (2024) which says MSMEDF as one programme to serve several function strategy does not influence tax compliance behaviour.

Summary: Attitude has a small but statistically significant positive effect on Income Tax Compliance; Anchor Borrowing does not have a significant direct impact on Income Tax Compliance; and The interaction between Anchor Borrowing and Attitude does not significantly influence Income Tax Compliance.

Conclusion and Recommendation

This study concludes that Anchor Borrower Programme to serve as programme that functions for many purpose, does not significantly moderate relationship between attitude of SSEs owners and income tax compliance. Hence, specific tailored policy be included into the programmes to encourage positive income tax attitude among SSE owners. These results suggest that while attitude plays a small role in promoting compliance, the ABP does not significantly enhance or weaken this relationship.

Therefore, to foster better tax compliance, the ABP should include tax incentives like pioneer status, tax clearance certificate serves to benefit participants among others. its potential can further be leveraged by increasing accessibility, raising awareness of its benefits, and integrating it with policies like consistent tax compliance attracts longer loan duration. Additionally, efforts should include targeted education and awareness campaigns that highlight the benefits of compliance and build trust in the tax system.

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IMPACT OF CASHLESS PAYMENT POLICY ON ECONOMIC GROWTH IN NIGERIA

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Abstract

This research set out to offer an in-depth review of existing literature on the influence of cashless payment policies on Nigeria's economic growth. The objective was to provide an initial, wide-ranging overview for academic scholars and to serve as a practical guide for shaping financial policy decisions regarding the role of cashless transactions in economic development. The study adopted an exploratory and descriptive research approach, relying on documentary analysis. A qualitative text analysis method was employed to examine and interpret relevant documents, enabling the researcher to derive meaningful conclusions on the subject matter. Articles were carefully selected through a content-focused screening process that involved identifying key terms aligned with the study's objectives. This systematic literature search was conducted using keywords such as "cashless policy" and "economic growth." Upon analyzing the findings from various sources, the study observed a general consensus that cashless payment policies positively influence economic growth. However, the extent of this impact varies across regions due to differences in economic structures, technological adoption, and other contextual factors. Therefore, the positive outcomes observed in Nigeria may not necessarily be applicable to countries like those in the G7, G20, OECD, or CPMI, as highlighted in the reviewed literature.

Keywords:

Cashless Economy,
Cashless payment, Digital
Payment System,
Economic Growth, Gross
Domestic Product (GDP)

Introduction

The global economy is shifting towards digitization and a cashless economy, aiming for a unified global economic village. The World Health Organization (WHO) recommends contactless activities, including payments, to minimize direct contact. According to Kumari and Khanna (2017) a big chunk of the world's population is without a formal financial system and bank account. Currently, 2 billion people, or 38% of adults worldwide, lack access to basic financial services and do not have a bank account. Many of these unbanked individuals live in low-income countries, with women making up around 55% of this population. Furthermore, 57% of adults are considered underbanked, meaning they have a bank account but limited access to financial products like investments and insurance. However, it's predicted that by 2030, these 2 billion unbanked adults will use their phones for transactions and storing money (Koh et al., 2018).

Global cashless payment volumes are expected to surge, with an 80% increase from 2020 to 2025, reaching nearly 1.9 trillion transactions, and almost tripling by 2030, according to PwC analysis. The Asia-Pacific region

will lead the growth, followed by Africa, Europe, and Latin America. The US and Canada will experience slower growth. Mobile phone usage and mobile money accounts are on the rise, particularly in Africa, with over 500 million users currently and projected to reach 725 million. The mobile money market is expected to grow, with transactions in sub-Saharan Africa potentially exceeding \$1.3 billion. The World Payments Report (2021) notes an 8% increase in cashless transactions in 2020, with electronic money and instant payments expected to capture 25% of global cashless transactions by 2025, indicating a shift towards a cashless society.

Also, the COVID-19 pandemic has accelerated the need for digital financial services to integrate into the global economy, posing challenges for developing countries like Nigeria. For example, lockdowns and curfews highlighted the importance of advanced technology in finance, making digital access to financial services a pressing priority. The pandemic has driven significant changes, underscoring the need for digital financial inclusion.

In today's digital world, cashless payments have become a driving force, boosting global economies by enhancing efficiency, convenience, and security. Nigeria, known for its vibrant entrepreneurial spirit, rich natural resources, and cultural diversity, is actively participating in this digital transformation. Whether it's through card swipes, smartphone taps, or online transactions, traditional commercial limitations are rapidly fading, paving the way for new possibilities for both individuals and businesses. Technology has revolutionized banking, making it largely paperless and contributing significantly to the nation's socioeconomic growth (Agug & Agu, 2020). As digital innovations continue to evolve, physical cash is slowly being replaced by electronic data flows. This shift isn't just a passing phase but a powerful trend capable of redefining Nigeria's economic structure. Over a decade ago, the Central Bank of Nigeria (CBN) introduced the cashless policy to reduce reliance on physical currency and promote a more digital economy. A move towards a cashless society aligns with the globalized nature of today's world. Furthermore, in a recent development, the Nigerian federal government mandated that only the naira should be used for transactions within the country. This decision came in response to the weakening value of the naira against the dollar, as it was found that many transactions were being conducted in foreign currencies, particularly the dollar.

But what exactly does a cashless payment or cashless society mean, and how does it influence Nigeria's economic development? At its core, a cashless payment involves the electronic transfer of money, removing the reliance on physical cash. In other words, a cashless economy is one where financial transactions are carried out without the use of paper money or coins. Instead, it operates through digital platforms that facilitate the exchange and recording of money in electronic form. As defined by Business Novice, a cashless society is “an economic system where transactions are carried out electronically rather than with physical currency.” This shift—from credit and debit cards to mobile payments and digital currencies is significantly transforming Nigeria's financial system.

Problem Statement

Recently, various Nigerian newspapers have revealed that it costs approximately four naira (₦4) to produce a single naira note. This means that creating one billion naira in currency notes would require a staggering four billion naira (₦4 billion). This estimate doesn't even account for the additional expenses associated with handling and maintaining the notes, which often suffer from wear and tear due to misuse. This high cost is one of the reasons the Central Bank of Nigeria (CBN) has advocated for a shift towards a cashless economy—to cut down on the expenses of printing and managing physical currency, among other economic advantages.

Most importantly, ensuring 99.999% network availability is crucial for Nigeria's ICT-driven economic model, but the Central Bank of Nigeria's approach seems premature without addressing underlying infrastructure issues. Key questions arise: What conditions are necessary for sustainability and improved services? How can

network failures in banking transactions be technically resolved? The answer to the questions raised above is one of the main driven motives behind the current study among others.

Before the cashless policy, commercial bank customers in Nigeria faced significant challenges, including armed robbery risks due to carrying large sums of cash and congested banking halls with long queues for transactions (Achor & Anuforo, 2013). The introduction of cashless transactions has prompted a shift towards a cashless economy, but this transition poses challenges for developing countries like Nigeria. This study explores the opportunities and challenges associated with digital transactions in the Nigerian economy, aiming to understand their impact and potential benefits.

As the world shifts towards digitization and a cashless economy, researchers are increasingly interested in the impact of digital finance on sustainable development. While studies have examined the relationship between financial sector development and economic growth, there's a growing focus on digital payment systems (Park and Shin, 2015; Cojocarui et al., 2016; Durusu-Ciftci et al., 2017). Most existing research on cashless payments and economic growth has centered on European countries and India, leaving a gap in understanding the implications for developing countries like Nigeria (Bolt et al., 2008; Hasan et al., 2012; Tee and Ong, 2016; Grzelczak & Pastusiak, 2020; Ravikumar et al., 2019; Sreenu, 2020). This study aims to bridge this gap by reviewing existing literature and providing insights on how to improve the use of digital technologies in Nigeria to achieve sustainable development. These reasons among others, informed the need to embark on the current study.

Furthermore, the rise of digital and cashless payments has sparked extensive research, with varying findings on their impact on economic growth. While some studies, mainly in European countries, suggest a positive effect, others have yielded mixed results depending on the payment platform and timeframe (Lau et al. 2020; Zandi et al. 2016; Tee and Ong's 2016; Narayan 2019; Ravikumar et al. 2019; Sreenu 2020; Aldaas's result 2020; Grzelczak and Pastusiak 2020; Pang, Ng, & Lau, 2022). Notably, there's a lack of research on the relationship between cashless payments and economic growth in African countries, particularly Nigeria, prompting the need for this study to explore this topic.

Therefore, this study aims to provide crucial insights for policymakers in Nigeria, helping them determine whether to continue promoting cashless payments or stick with traditional methods. By examining the potential benefits of cashless payments in stimulating economic growth, as seen in European countries, the study will offer recommendations on implementing a cashless payment system in Nigeria. The research seeks to inform decision-making and potentially drive economic development through digital transactions.

The primary aim of this study is to unravel the multi-faceted impacts of cashless payment on Nigeria's economic growth by synthesizing previous related studies in this area. Beyond the obvious convenience and efficiency, it brings to financial transactions, and to further highlight the intricate web of benefits that ripple through the nation's economy. And to expound the ever-evolving world of cashless payments and its profound implications for Nigeria's economic growth. In addition, the study will elaborate more on how this emerging digital frontier has the potential to shape a brighter, more prosperous future for this resilient nation, bridging the gap between aspirations and achievements, and ushering in a new era of boundless possibilities. Thus, from stimulating e-commerce and driving financial inclusion to combating corruption and amplifying transparency, the ramifications of embracing a cashless society are both far-reaching and transformative.

Conceptual Issues and Review of Literature

Concept of Cashless Payment/Cashless Economy/Digital Payment System

A cashless economy is characterized by the use of electronic payment methods, such as credit or debit cards, instead of physical currency for transactions (Elechi & Rufus, 2016). This concept is also described as a system

with minimal cash flow, where transactions are facilitated through digital means (Ezuwore et al., 2014). Similarly, a digital payment system involves the automated exchange of monetary value between parties over information and communication technology (ICT) networks (Harash et al., 2014). These definitions highlight the shift towards technology-driven financial transactions, reducing the need for physical cash.

According to Akhalume and Ohiokha (2012), a cashless economy doesn't mean the complete elimination of cash transactions, but rather a significant reduction in cash usage, with most transactions being electronic. This implies a scarcity of cash as digital payments dominate. They also define cashless payments as transactions where goods and services are exchanged without physical cash, using electronic transfers or checks instead. The trend towards cashless payments is seen as an inevitable part of global economic development.

Research by ForexBonuses.org (2019) highlights the rapid growth of cashless payment systems globally, categorizing them into paper-based, card-based, and electronic-based instruments. The study identifies six key criteria to measure the adoption of cashless payments, including card ownership, contactless functionality, growth rate, and awareness of mobile payments. According to the research, countries like Canada and Sweden are leading the way in cashless transactions, with Canada having over two credit cards per person and Sweden conducting 59% of transactions non-cash. Table 1 shows the world's most cashless countries. Canada is one top country that implements cashless technology in which there are over two credit cards for every person living. Followed by Sweden in which 59% of Swedish consumer transactions are completed through non-cash methods. In Asia, China and Japan are experiencing significant growth in cashless payments.

Figure 1

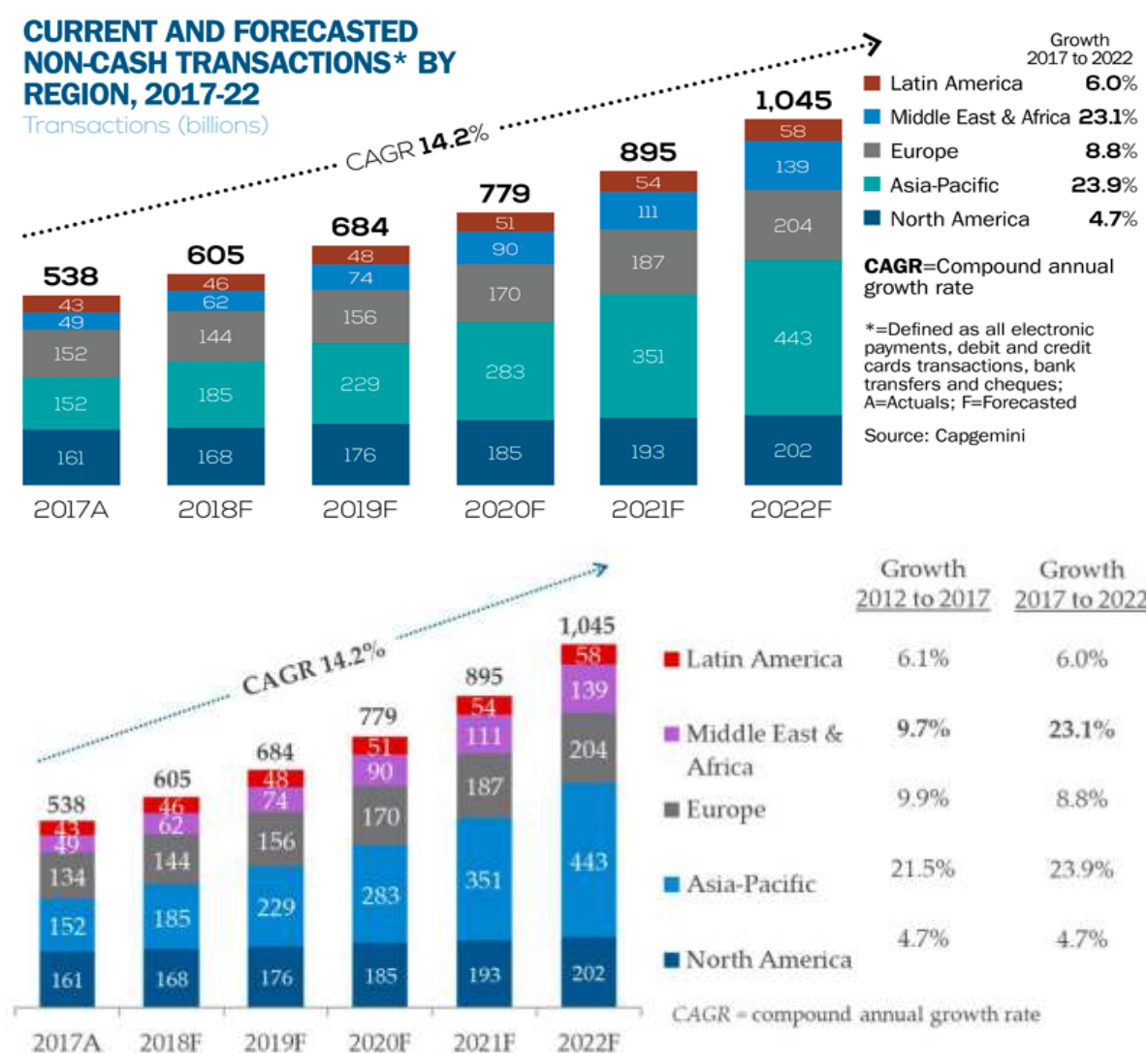


Figure 1. Current and forecasted non-cash transactions by region for 2017–2022, in billion transactions, (A) actuals and (F) forecasted. Non-cash transactions here are defined as all electronic payments, debit and credit cards transactions, bank transfers, and cheques ([Capgemini 2019](#)).

Nigerian Cashless Payment Policy

The Nigerian government introduced a cashless policy to reduce physical cash circulation and promote electronic payments. This initiative, driven by the Central Bank of Nigeria, aims to minimize cash handling and transactions, not eliminate cash entirely. The policy's objectives include;

- Reducing Cash Handling Costs: decrease the high costs associated with physical cash management
- Mitigating Illegal Activities: curb corruption, leakages, and money laundering by increasing transparency in transactions
- Increasing Financial Inclusion: provide more efficient transaction options and greater financial access
- Improving Economic Development: foster a stable environment for economic growth through effective monetary and exchange rate policies

The policy encourages the use of electronic payment channels such as:

- Automated Teller Machines (ATMs)
- Point of Sale (POS) terminals
- Mobile banking
- NIBSS instant payment
- NIBSS electronic fund transfer
- Cheques

By adopting electronic payments, Nigeria aims to²³:

- Enhance Convenience: faster and more convenient transactions
- Improve Security: reduced risk of theft and loss
- Boost Tax Base: increased transparency for government revenue tracking
- Drive Economic Growth: more efficient financial transactions contributing to GDP growth and reduced unemployment

The Central Bank of Nigeria (CBN) introduced the cashless policy in 2012, starting with a pilot program in Lagos state. The policy was later expanded to other states and the Federal Capital Territory in 2013, before being implemented nationwide on July 31, 2014. According to the CBN's 2019 report, the most popular digital payment channels in 2018 were ATMs (68.3%), POS terminals (23.1%), Mobile payments (4.6%)

This data highlights the dominance of ATMs in Nigeria's digital payment landscape at the time, with POS terminals and mobile payments also playing significant roles. The CBN's initiative aimed to reduce cash dependency and promote electronic transactions, aligning with global trends towards digital economies.

The Concept of Economic Growth

Economic growth is defined as “a rise in the total output (goods or services) produced by a country” (Laeven, Levine & Michalopoulos, 2015). Also, economic growth refers to the quantity of goods and services produced; it says nothing about the way in which they are produced (Mills & Mackinnon, 1973). Economic Growth is a concept used to explain the constant and gradual improvement of the volume of production or output of a given country (Appah, Tebepah & Newstyle, 2023). According to Soyer et al (2020), economic growth is an annual increase of material production expressed in value, the rate of growth of GDP or national income. Similarly, Appah, Tebepah and Newstyle, (2023) opine that economic growth is a sustained increase in per capita national output or net national product over an extended period. As argued by Ndebbio (2004), and Iram and Nishat

(2009), the economic growth of a country depends on capital, which is one of the basic ingredients for maintaining and boosting growth. Economic growth occurs whenever people take resources and rearrange them in ways that are more valuable. It is an increase in the capacity of an economy to produce goods and services, compared from one period of time to another. Economic growth is usually used to determine the standard of living of the society and national improvement. In general, this concept is usually used to explain the state of health of an economy and represent an increase in the nation's income or gross domestic product (GDP). This implies that the rate of increase in total output must be higher than the rate of population growth thereby resulting to improvement or increased in standard of living of the citizens.

Economic growth refers to an increase in the total output of goods and services produced by a country, often measured by the growth rate of Gross Domestic Product (GDP) or national income (Laeven, Levine & Michalopoulos, 2015). It represents a sustained rise in per capita national output or net national product over time, reflecting an economy's capacity to produce more valuable goods and services (Mills & Mackinnon, 1973). Economic growth is crucial for improving the standard of living and national development, requiring factors like capital to drive and maintain growth. A healthy economy with steady growth typically translates to increased GDP and improved living standards for its citizens (Appah, Tebepah & Newstyle, 2023). As argued by Iram and Nishat (2009) and Ndebbio (2004), the economic growth of a country depends on capital, which is one of the basic ingredients for maintaining and boosting growth. Economic growth happens when resources are utilized more efficiently to create greater value. It's measured by an economy's increased capacity to produce goods and services over time. This growth is a key indicator of a society's standard of living and national progress. A growing economy typically signifies improved health, increased national income, and rising GDP. For living standards to improve, the economy's growth rate must outpace population growth, leading to better living conditions for citizens

Gross Domestic Product (GDP)

Gross Domestic Product (GDP) represents the total monetary value of goods and services produced within a nation's borders over a specific period, regardless of the producers' nationality. There are different ways to measure GDP. The first one is the Nominal GDP, which measures the value at current prices. The second one is Real GDP (adjusts for inflation, providing a more accurate picture of economic growth). GDP includes involves goods and services produced for sale. It represents non-market production, like government-provided defense and education services. It also entails value-added goods and services, minus intermediate consumption. However, it doesn't account for unpaid work, like caring for a relative, black-market activities, income earned by citizens abroad. GDP is crucial for understanding a nation's economic health, size and growth. Real GDP growth indicates an economy's performance, with rising employment and income levels. However, GDP has limitations, such as not capturing income inequality or environmental degradation.

Cashless Payments and Economic Growth

Advances in payment systems have led to changes in consumer payment preferences, offering benefits in terms of convenience, timing, and costs. Cashless payments are expected to boost consumption and economic growth. Research has explored the economic impact of cashless payments from various angles, including banking, financial economics, macroeconomics, monetary and regulatory economics (Mustapha, 2018; Zandi et al., 2016; Tee & Ong, 2016; Zandi et al., 2013; Oyewole et al., 2013; Hasan, Renzis, & Schmiedel, 2012; Hasan, Schmiedel, & Song, 2012; Kahn & Roberds, 2009; Scholnick et al., 2008; Bolt et al., 2008; Berger, 2003; Humphrey et al., 1996).

Research suggests that digital financial services boost economic growth in both developed and developing

countries (Anane & Nie, 2022). Studies in specific countries have found that in Nigeria, Mobile banking, POS transactions, and ATM usage positively impact GDP, while web transactions have a negative effect (Olubukola et al., 2023). Findings in Kenya shows that Mobile money transfer services contribute to economic growth, with a positive correlation between mobile money users and GDP growth (Nyasimi, 2016). While in India the adoption of cashless payments has a positive impact on economic growth, with high acceptance of digital payment systems (Sreenu, 2020). These findings indicate that digital financial services can play a significant role in promoting economic development.

Furthermore, as the world shifts towards a cashless society, it's believed that this transition will have a positive impact on a nation's economy. A key measure of this economic health is the country's Gross Domestic Product (GDP). Based on the expenditure approach formula (equation 1.1), shows four key determinants that can affect the country's GDP (Y), which are household consumption (C), private investment (I), government expenditure (G), and net import (NX).

This equation states that there is a positive relationship between the GDP and each of the determinants.

$$Y = C + I + G + NX(I)$$

The study by Lau et al. (2020) proposes that cashless payments can positively affect the country's GDP through the three channels – C, I, and G.

Lau et al. (2020) proposed a model explaining how cashless payments can boost economic growth through three key channels which includes household consumption (increased spending and economic activity), private investment (enhanced investment opportunities and growth) and government expenditure (improved government revenue and spending). This model highlights the potential positive impact of cashless payments on economic growth.

Review of Empirical Studies

While numerous studies have explored digital payment systems and their impact on economic growth globally, there is a notable gap in research that synthesizes these findings to identify trends and gaps. Few studies have examined the optimal composition of payment gateways for maximum impact. Given the recent introduction of Nigeria's cashless policy, this study focuses on recent literature, particularly within the Nigerian context, to address this knowledge gap and provide insights into the effectiveness of digital payment systems in promoting economic growth.

Gbanador (2023) explored the impact of the cashless policy on economic growth in Nigeria. The study employed quarterly time series data from 2012 to 2021 and adopted an ex-post facto research design. Several diagnostic tests, including serial correlation, heteroskedasticity, and the Cusum test, were performed. Unit root tests were carried out using the Phillips-Perron and Kwiatkowski-Phillips-Schmidt-Shin (KPSS) tests, while the Auto-Regressive Distributed Lag (ARDL) model was used for data analysis. The findings revealed a significant relationship between Cheque (CQ) and Internet Banking (IB) with GDP, while the relationship between Automated Teller Machines (ATM) and GDP was found to be negatively insignificant. The study concluded that the cashless policy influences Nigeria's economic growth and recommended that the Central Bank of Nigeria encourage banks to enhance the quality of ATM services. However, the study focused on a limited number of cashless payment platforms and did not provide a clear explanation for the inconsistencies in its findings, making the results difficult to generalize. Additionally, the mixed findings could be attributed to the narrow scope of digital payment platforms considered in the study.

Likewise, Okoh, Olopade, and Eseyin (2023) investigated the impact of digital payments on Nigeria's Gross Domestic Product (GDP). The study used quarterly time series data from the first quarter of 2009 to the fourth quarter of 2020. The variables considered as proxies for digital payments in the Nigerian economy included

GDP, Automated Teller Machine (ATMV) value, Point of Sale (POSV) value, Mobile Application Payment (MAPV) value, and Instant Payment (NIPV) value. Data were sourced from the Central Bank of Nigeria's Statistical Bulletin (2020). The Phillips-Perron test results indicated that all variables, except for MAPV and the Consumer Price Index (CPI), were stationary at first difference. This means that ATMV, POSV, NIPV, GDP, and interest rates were integrated at order one, $I(1)$. The short-run ARDL regression results showed that MAPV and POSV had a positive and significant impact on GDP, attributed to the acceptance and adoption of digital payment technologies as part of the cashless policy in Nigeria. In contrast, NIPV and ATMV showed a negative and significant impact on GDP, which the study attributed to factors such as poor power supply, inadequate internet and machine infrastructure, delays in reversing failed bank transactions, and insufficient cash at ATM points. Although the study provided valuable insights into the reasons behind these inconsistencies, it did not comprehensively address all digital payment platforms.

Similarly, Appah, Tebepah, and Newstyle (2023) examined the relationship between digital financial services and Nigeria's economic growth from 2006 to 2021. The study used both *ex post facto* and correlational research designs, with data collected through purposive sampling. The sample consisted of quarterly data from 2006 to 2021, which was sourced from the Central Bank of Nigeria. The data were analyzed using univariate, bivariate, and multivariate analyses. The findings from the Vector Error Correction Model (VECM) showed that Automated Teller Machine (ATM) services had a positive but insignificant effect on real GDP, Point of Sale (POS) services had a positive and significant effect, mobile banking had a positive but insignificant effect, and web banking had a positive and significant effect on real GDP in Nigeria. Based on these findings, the study concluded that digital financial services do influence Nigeria's economic growth. This study differs from the current research in that it is an empirical study, while the present study involves a systematic review of previous research.

Conversely, Marafa (2022) investigated the impact of the digital payment system on economic growth in Nigeria. The study utilized quarterly data from 2010 Q1 to 2021 Q2 and employed the Autoregressive Distributed Lag (ARDL) bounds test and the Granger causality test. The ARDL bounds test results indicated a long-run relationship between digital payments and economic growth. Both the short-run and long-run coefficients showed that all digital payment variables positively and significantly affect economic growth. The Granger causality test revealed a unidirectional causality running from digital payment platforms to economic growth. The study concluded that digital payment systems have a positive and significant relationship with economic growth in Nigeria. This finding slightly contradicts the results of many other studies, as it suggests that digital payment variables have a positive and significant impact on economic growth in both the short and long run.

Similarly, Gbadamosi (2022) explored the impact of the cashless policy on the financial liberalization of Nigeria's economy. The study used an explanatory assessment approach to review existing research and provide a causal analysis of the subject. Secondary data were obtained from sources like the World Bank statistical index and the Macrotrends databank, covering Nigeria's economic growth, investment, and savings from 2000 to 2020. The findings revealed that the cashless transaction policy has significantly influenced the financial liberalization of the Nigerian economy. The study aligned with McKinnon-Shaw's (1973) theory in its exploratory analysis and concluded that the key policies needed for the effective implementation of a cashless society have not yet been fully realized. This study shares similarities with the current research, but the present study aims to assess the impact of Nigeria's cashless policy on the country's economy in comparison to other nations worldwide.

In the same vein, Osuigwe (2022) investigated the impact of financial innovation on economic growth in Nigeria. The study employed an *ex-post facto* research design, using time-series data sourced from the Central

Bank of Nigeria's Statistical Bulletin, Annual Reports and Accounts, and the Nigeria Bureau of Statistics (NBS) for the period under review. Data analysis was conducted using econometric techniques, including descriptive statistics, Augmented Dickey-Fuller and Phillips-Perron unit root tests, and Ordinary Least Squares (OLS). The study found that Automated Teller Machines (ATMs), Point of Sale (POS) systems, mobile banking, and internet banking all had a positive and significant effect on the annual growth of gross domestic product (GDP). The study concluded that financial innovation positively influences economic growth in Nigeria. This research is similar to the current study in that it used secondary data sources; however, it focused on a limited number of cashless payment platforms, while the current study encompasses a wider range of digital payment platforms. Additionally, the study's findings regarding ATM usage contradicted many other studies in the field.

Likewise, Anifowose and Ekperiware (2022) examined the impact of Automated Teller Machines (ATMs), Point of Sale (POS) terminals, and online banking transaction values on economic growth. The study used primary data collected through a questionnaire administered to 235 respondents. The data were presented using tables and simple percentages. The study concluded that the cashless policy is crucial for Nigeria's economy and emphasized the need for stakeholders to further promote ATM and POS platforms. This study differs from the current one in that it relied on primary data and focused on a limited number of cashless payment platforms, while the current study utilized secondary data sources and considered a broader range of digital payment platforms.

Furthermore, Nwakpa (2023) assessed the success, impacts, challenges, and prospects of the cashless policy as reported in selected Nigerian national daily newspapers. The study was based on the Diffusion of Innovation and Agenda Setting theories, utilizing secondary data gathered from five Nigerian national daily newspapers. The analysis focused on the editorial/opinion pieces and feature stories within the newspapers. The findings revealed several factors hindering the success of the cashless policy in Nigeria, including the lack of an appropriate legal and regulatory framework for e-payments, unreliable electricity supply, low literacy rates, inadequate financial infrastructure, the risk of identity theft, and poor service from network providers. The study concluded that while a cashless society offers a safer and more efficient alternative to cash-based transactions, the success of the initiative would depend on proper implementation, which could enhance Nigeria's economy. However, the study did not consider additional challenges, such as corruption and cybercrime, that could impede the policy's success and prospects. The study's approach is similar to the current research in that both rely on documentary reviews.

Akin to the current study, Ridwan, Abdullah, and Yusmita (2022) conducted a study focused on identifying fraud prevention strategies through the implementation of a cashless policy. The study was carried out systematically by searching articles using the keywords "cashless" and "fraud" in an article search engine, followed by inputting them into the Scopus journal search engine, utilizing secondary data from the Publish or Perish application. Journals and articles were selected based on their relevance to the topic and the quality of the content. The study found that innovations in local government payment systems have facilitated a shift to safer, more effective, and efficient non-cash payment methods. Cashless payments are seen as effective tools in preventing corruption, such as money laundering, bribery, and kickbacks in services or procurement. The study also suggests that if local governments mandate non-cash payments in both urban and rural areas, supported by the internet and advancing technology, people will increasingly adopt them. However, the study did not mention that the reduction of corruption through cashless systems could contribute to enhanced economic growth in the country.

In terms of studies conducted from other countries, Noman, Maydybura, Channa, Wong, and Chang (2023) explored the impact of cashless bank payments on economic growth in G7 countries, including Canada, Germany, Japan, France, Italy, the United Kingdom, and the United States. Using annual data from 2012 to

2020, the study employed the latest Panel ARDL model to analyze the relationship between various cashless payment methods—such as cards and e-money, credit transfers, and cheques—and real GDP. The results indicate that, in the long run, all forms of cashless payments examined show a strong positive association with economic growth. In the short term, card and e-money payments, as well as cheques, were found to have a significant positive effect on GDP, while credit transfers had no significant impact. Although the overall results are somewhat mixed, particularly regarding credit transfers, the study did not provide an explanation for this inconsistency.

Similarly, Pang, Ng, and Lau (2022) investigated the relationship between digital payments and economic growth across 27 CPMI countries, with a particular focus on comparing the effects between developed and developing nations. The study utilized data from multiple databases spanning the years 2013 to 2019, encompassing 18 developed and 9 developing countries within the CPMI membership. A fixed effects panel data model was applied to analyze the relationship between digital payments and GDP growth across (1) all CPMI countries, (2) developed CPMI countries, and (3) developing CPMI countries. Additionally, a comparative analysis was conducted between the two groups. The empirical findings revealed that all three forms of digital payments—debit cards, credit cards, and e-money—are positively associated with GDP growth across CPMI countries. Notably, e-money showed a significant positive relationship with economic growth, suggesting its role in facilitating economic activity. In contrast, debit and credit card payments did not exhibit a statistically significant impact. The authors also suggested that the influence of digital payments on economic growth may become more pronounced over time, as no country has yet fully transitioned to a cashless economy. Furthermore, the study found that digital payments have a stronger economic impact in developed countries compared to developing ones. Unlike the current study, which focuses solely on a developing country, this research undertook a comparative approach between developed and developing nations.

In the same vein, Tay, Tai, and Tan (2022) sought to expand the existing body of research on G7 countries by applying the more advanced Panel ARDL model, as opposed to the traditional methodologies used in earlier studies. The study adopted a systematic review approach guided by the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework. Selected articles were evaluated through content-centric analysis to address the study's research questions. The findings revealed that Asian countries are actively embracing and enhancing digital financial inclusion as a means to alleviate poverty. However, the study also highlighted a persistent digital divide in developing countries, particularly along lines of gender, income level, and urban-rural disparities in access to and use of digital financial services. While this study shares similarities with the current research, it differs in that it builds upon earlier studies focused on G7 nations.

Likewise, Tran and Wang (2023) explored the link between cashless payments and economic growth in both G20 countries and Vietnam. The study utilized a static panel data approach, along with descriptive statistics, to analyze annual data from 2011 to 2020. The findings suggest that check payments, as a form of cashless transaction, contribute positively to economic growth in the studied regions. Notably, the growth-enhancing effect of these payments was evident in the analysis. However, unlike studies focused on G7 countries—where a broader range of digital payment platforms were examined—this study's findings may be less comprehensive due to the more limited scope of payment instruments considered in the G20 context.

Also, in a study conducted by Grzelczak and Pastusiak (2020) investigated the relationship between cashless payment instruments and economic growth using Spearman's rank correlation. Their findings revealed that in Central and Eastern European countries, payment cards accounted for the largest share of total cashless transactions, followed by transfer orders. In contrast, Western European countries also showed high usage of payment cards and transfer orders, but with a growing prevalence of e-money transactions. The study concluded that there is a positive correlation between the use of cashless payment methods and economic growth. Unlike the current research, this was an empirical study focused on the European context.

Conversely, Wong, Lau, and Yip (2020) examined the relationship between cashless payments and economic growth in selected OECD countries, using annual data from 2007 to 2016. The study employed a static panel data method to quantify this relationship. Model selection was guided by the Breusch-Pagan Lagrangian Multiplier test, the Poolability F-test, and the Hausman test. The findings revealed two key insights: First, cashless payments stimulate economic growth in OECD countries. In particular, debit card payments were found to have a growth-enhancing effect, while credit card, e-money, and cheque payments showed no significant impact on economic growth. Second, the positive relationship between economic growth and debit card usage remained robust even after accounting for endogeneity, omitted variable bias, and outliers. These findings diverge from those of other studies, a discrepancy that may be attributed to socio-economic and environmental factors unique to the countries examined.

More so, on individual country basis, Irvy, Rohima, and Mardalena (2022) examined the impact of cashless payments on Indonesia's economy before and during the COVID-19 pandemic. In this study, economic growth was measured using GDP at constant prices, while cashless payments were represented by transactions through debit cards, credit cards, and e-money. The study utilized secondary time series data spanning from January 2018 to December 2022, sourced from Bank Indonesia (BI) and Statistics Indonesia (BPS). The analytical method employed was the Autoregressive Distributed Lag (ARDL) model. The estimation results indicated that, both in the short run and the long run, debit and credit card transactions had an insignificant effect on economic growth. In contrast, e-money transactions demonstrated a positive and significant impact. Overall, cashless payments were found to have a significantly positive effect on economic growth both before and during the COVID-19 pandemic. Notably, the impact was more pronounced during the pandemic period. This study produced a mixed result which contradict several other results in this area. Also, the study deferred from the current study because it compared the impact of cashless payment on the economy before and during COVID-19 pandemic.

Similarly, Aminata and Sjarif (2020) conducted a study to examine whether cashless payment instruments influence economic growth and interest rates, functioning as a tool of monetary policy in Indonesia. The cashless payment instruments analyzed included credit cards, debit/ATM cards, and electronic money. The study utilized secondary time-series data from 2013 to 2019, sourced from Bank Indonesia's Payment System Statistics and the Central Bureau of Statistics. Multiple linear regression analysis was employed, using two regression models. The findings revealed that debit card and electronic money transactions have a significant positive effect on economic growth. Additionally, credit card transactions were found to significantly and positively influence interest rates, while debit card transactions had a significant negative effect on interest rates. Overall, cashless payment instruments were found to have a significant simultaneous effect on both economic growth and interest rates in Indonesia. The authors concluded that the continued promotion and widespread adoption of cashless payments could enhance economic growth and improve efficiency in the broader economy. The result of this study is quite unique compared to other studies, in that it introduced interest rate in it study and hence resulting to the mixed finds.

Research Methodology

This study conducted a critical literature review on the relationship between cashless payment policies and economic growth. The research was explorative and descriptive in nature, relying on documentary review as its primary method. A qualitative text data analysis approach was employed, aiming “to provide knowledge and understanding of a definite phenomenon” (Downe-Wamboldt, 1992, p. 314). This method involves the examination of documents and the systematic interpretation of their content, enabling the researcher to draw inferences about specific situations (Corbin & Strauss, 2008).

According to Hsieh and Shannon (2005, p. 1278), this method involves the subjective interpretation of textual data through the systematic identification and classification of themes for critical elaboration. Consistent with prior studies of a similar nature (e.g., Kaaya, 2015a; Christensen & Nikolaev, 2012; Nasibah et al., 2009), this study employed a qualitative summative content analysis approach. This method enables the extraction and development of significant arguments and themes based on the researcher's interest or the reviewed literature, allowing for detailed explication. As noted by Stake (1995), this approach is regarded as rigorous and effective, facilitating an exhaustive analysis of a single, well-defined phenomenon—such as the one examined in the present study.

The study systematically searched for articles using keywords like "cashless policy" and "economic growth" and applied content-centric analysis to ensure relevance. The research relied on secondary data from various sources, including published books and articles, journals and newspapers, periodicals, conference papers, working papers and websites. Given the recent introduction of Nigeria's cashless policy, the study focused on recent literature, particularly research conducted within Nigeria.

Discussion of Findings

This section critically reviews and analyzes the impact of cashless payment policies on economic growth by highlighting strengths and weaknesses of existing studies and various payment gateways and their economic impact. However, the literature reveals conflicting results, likely due to differences in research environments. Therefore, the findings may not be universally applicable to countries with distinct economic and business contexts.

The findings from the various studies reviewed in this research indicate that the results from different payment platforms were mixed and inconsistent. This variation can be attributed to the fact that the studies were conducted in different regions, each with its unique cashless policies and other related factors such as the availability of network connectivity and electricity (Nworie and Okafor, 2023), the development of financial infrastructure for digital transactions (Singhraul and Garwal, 2018), population demographics (Tay, Tai, and Tan, 2022), and levels of corruption (Ridwan, Abdullah, and Yusmita, 2022). Despite these differences, most studies agree that the impact of digital payments on economic growth tends to be more pronounced over the long term, as no country has fully transitioned to a cashless society yet (Marafa, 2022; Pang, Ng, and Lau, 2022). Furthermore, the results suggest that digital payments have a greater impact on economic growth in developed countries compared to developing ones, primarily due to factors like better infrastructure (Pang, Ng, and Lau, 2022). Several studies in developed countries have also shown that over time, the adoption of cashless payment systems leads to significant economic impacts and enhances community activities (Irvy, Rohima, and Mardalena, 2022; Ha, 2020; Tee and Ong, 2016; Zandi et al., 2013). Therefore, it can be concluded that one key factor behind the mixed results may be the varying perceptions of people toward the use of digital payment platforms.

The findings from the reviewed literature also revealed that not all types of digital payment gateways have a significant impact on economic growth. In other words, certain digital payment platforms may positively influence economic growth in some countries, while having no effect in others. This inconsistency can be attributed to contextual environmental factors and the attitudes or perceptions of people in specific regions toward using these payment platforms.

Additionally, several studies reviewed in this research indicate that cashless payment instruments such as e-money, cheques, online/electronic banking, transfer orders, debit cards, and credit cards are positively correlated with GDP growth (Tran & Wang 2023; Appah, Tebepah & Newstyle 2023; Nwakpa 2023; Gbadamosi 2022; Osuigwe 2022; Anifowose & Ekperiware 2022; Grzelczak & Pastusiak 2020; Wong, Lau, & Yip 2020;

Aminata & Sjarif 2020; Levine and Michalopoulos 2015; Sekhar 2013). This positive impact is attributed to the adoption of digital payment methods and the diffusion of cashless policies, which ultimately support economic growth. However, some studies challenge these findings, suggesting that certain cashless payment instruments may have an insignificant or even negative impact on GDP (Okoh, Olopade & Eseyin 2023; Gbanador 2023). These negative effects are linked to factors like inadequate power supply, poor internet and infrastructure, delays in reversing failed transactions, cash shortages at ATMs, and user perceptions. Other studies argue that the impact of cashless payment policies on economic growth is only noticeable in the long run, not the short run (Noman, Maydybura, Channa, Wong & Chang 2023; Marafa 2022). Supporters of the long-term impact of cashless payments emphasize that the influence on economic growth strengthens over time, as no country has yet fully transitioned to a cashless society (Pang, Ng & Lau 2022; Irvy, Rohima & Mardalena 2022). In general, the literature confirms that most digital payment methods and financial innovations contribute to driving economic growth.

Anifowose and Ekperiware (2022) concluded that the cashless policy is crucial for the Nigerian economy and emphasized the need for stakeholders to further promote various digital payment platforms. To achieve this, financial innovation should be strongly encouraged. This viewpoint was also supported by Osuigwe (2022), who noted that existing literature affirms that financial innovation, such as the cashless payment policy, contributes to driving economic growth (Levine and Michalopoulos, 2015; Sekhar, 2013).

The study also identified several factors that contribute to the insignificant impact of the cashless policy on the Nigerian economy. These factors include negative perceptions and attitudes towards usage, insufficient awareness of the benefits, fear of fraud due to the prevalence of financial fraud, network issues, high levels of illiteracy, cybercrime and hacking, and the limited accessibility of banks, particularly in rural areas. This list is by no means exhaustive, given the socio-economic context of the country.

Additionally, the findings from the various studies reviewed indicate that most research conducted within the Nigerian context primarily focused on digital payment platforms such as Automated Teller Machines, Point of Sale terminals, and electronic/online banking transactions. In contrast, studies from other countries often used platforms like e-money, cheques, debit/credit cards, and transfer orders. It was also noted that a majority of studies, especially those within Nigeria, employed the Auto-regressive Distributed Lag (ARDL) analytical method for data analysis.

The review also reveals that many studies conducted outside Nigeria involved collaborations with other member countries (e.g., G7, G20, OECD, CPMI). This is likely aimed at promoting cashless transactions among member countries, thus facilitating smooth, seamless digital transactions and fostering economic growth within these nations. Additionally, it was found that certain countries within these groups tend to favor specific types of cashless payment instruments (such as e-money, debit/credit cards, checks, or transfer orders) over others, possibly due to environmental factors that influence the use of each instrument. Furthermore, the review indicated that the adoption of cashless payment methods is often geographically specific. For instance, e-money, cheques, debit cards, and credit cards are more commonly used in European and Asian countries, whereas ATM, POS, and online banking are more popular in other regions.

Finally, this study also aimed to incorporate research conducted before, during, and after the COVID-19 pandemic to examine how the use of cashless payment instruments influenced economic growth. The findings revealed that cashless payments had a significant positive impact on economic growth both before and during, as well as after the pandemic. However, during the pandemic, the impact of cashless payments on economic growth

was found to be even more pronounced. This could be attributed to the lockdown, which restricted access to traditional cashless payment methods like ATMs and POS, and left banks largely non-functional.

Conclusion and Recommendation

This study set out to offer a thorough analysis of existing literature concerning the effect of cashless payment policies on Nigeria's economic growth. It serves both as a foundational resource for academic researchers and as a practical guide for formulating financial policies related to cashless payments and their influence on economic development. After assessing the outcomes of various studies, it was observed that nearly all agree that cashless payment policies positively affect a country's economic growth. However, given the differences in economic structures and levels of technological advancement, the positive impact observed in Nigeria may not be directly applicable to countries in regions like Europe or among member nations of groups such as the G7, G20, OECD, and CPPI, as discussed in the review.

Moreover, if cashless payment systems are proven to be advantageous and capable of driving economic growth—as supported by the literature reviewed in this study—it is recommended that Nigeria fully adopt and promote the implementation of such systems. It is anticipated that as more citizens begin to utilize one or more digital payment platforms under the government's ongoing cashless policy, there will be notable improvements in the country's economic growth. To achieve this, however, the Nigerian government must address persistent challenges hindering the success of digital payments, including network instability, cybercrime, and high bank charges. Additionally, when considering technical solutions to resolve network failures in banking transactions, the ideal benchmark is achieving 99.999% network uptime—commonly referred to as "five nines" availability—though it is recognized as being costly to implement (Adigwe, 2022).

Therefore, Hence, this paper holds significant value as it provides guidance for policymakers in determining whether Nigeria should persist in advancing cashless payment systems or revert to traditional cash-based methods. As a policy recommendation, the findings suggest that Nigeria should continue promoting cashless transactions, as they have demonstrated the most substantial positive effect on economic growth. This would enable the country to fully leverage the advantages of a cashless economy (Roshan, 2008; Peterson, 2017). Additionally, adopting a cashless system simplifies transactions for individuals, businesses, and the government alike. Nonetheless, a key limitation of this study lies in the number of databases consulted during the literature review. The databases selected were based on specific criteria, including their reliability and the breadth of reference materials they offered.

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CHALLENGES OF THE NIGERIAN BANKING SECTOR AND THE WAY FORWARD

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ABSTRACT

Nigerian banking sector struggle with challenges in the day to day running of their business activities, challenges are enormous and can either be market or operational challenges and regulatory or reforms challenges instituted by the regulatory agencies such as CBN, NDIC, SEC and CIBN etc. Therefore, this paper seeks to examine the challenges facing the Nigerian banking sector and proper possible solutions to the challenges based on the prevailing economic environment. The paper utilized questionnaires as source of data collection, fifteen out of 24 banks were selected based on purposive sampling method. Chi-Square (χ^2) method was adopted as a statistical tool of data analysis to analyze the collected data. The result reveals that myriad of challenges exist in the Nigerian banking sector some of which are challenges both within and outside Nigeria. Banks are left behind in technological innovation aspect of banking transactions, movement of high volume of deposit or capital flight to foreign banks by the political class which reduce banks opportunity to expand their market base and the prevalent of fraud in the sector also hinders the banks progress, these challenges affects the sector to compete equally with banking sector in the developed nations. However, we also found that the challenges does not affect their financial performance. It is recommended that that government and relevant regulatory agencies should put heads together to render support and address those challenges identified that affect the sector; also Nigerian banking sector should invest in both technological innovation and human capital development, they should imbibe the culture of good corporate governance and stick to the issue of banking ethics and professionalism among others.

Keywords:

Banking Sector, challenges, Nigeria, Nigerian Economy

1.0 INTRODUCTION

The banking sector of any nation is important to the size of its economy. Banking system occupies a unique position in every economy [Kanayo & Micheal, 2011]. Nigerian economy is not an exception. Most of the developing economy places more responsibilities on the banking sector to support the economic activities of the nation. Example banks are expected to mobilize the needed capital to facilitate production, generate employment and income. An economy that does not experience growth on sustained basis is likely to have a very passive financial sector as there are no incentives for investment [Basil, 2013].

Through the process of growth, banking system offers a wide range of portfolio options for savers and issuable instruments for investors, a function often referred to as financial intermediation. Banks are known to be one of

the major player in the money market, they perform very important role of intermediation, whereby ensuring mobilization of idle funds from the surplus sector of the Nigerian economy to the deficit sector. They also help government to implement monetary policy through issuance of treasury bills and government bonds. It is generally recognized worldwide that the banking sector plays a catalyst role in the process of economic development [Ekundayo 2011], as such banking sector of any nation is a function of the size of its economy. A developing economy places more responsibilities on the banking sector to mobilize the needed capital to facilitate production, generate employment and income. Researchers have argued that financial sector challenges should be promptly addressed so as to avoid financial fragility that may lead to deterioration of economic activities. To ensure challenges and proper practices are carry out the government came up with regulatory agencies such as NDIC, SEC, CBN and NSE and they came up with several reforms agenda in order to strengthen not only banking sector but the whole financial sector of the country. Since independence, the Nigerian financial system is made up of financial institutions, such as banks, insurance companies, specialized banks, capital market, finance companies, discount houses, bureau de change, mortgage institutions, community banks, and the development finance institutions (DFIs), each covering a particular area of activity or activities (Ofanson, Ukinamemen and Agbadua (2013). It performs the core function of financial intermediation, adequate payment services as well as the fulcrum for monetary policy implementation.

The Nigerian financial system has undergone several evolutionary stages ever since the independence of the country; foundation phase, Expansion phase, Consolidation and Reform phase. The phases marked different epochs in the evolution of the financial system.

I. Foundation Phase

This phase focuses on the establishment of institutions and development of necessary legislative framework. The phase is approximately from 1950 to 1970. During this period, the Central Bank of Nigeria (CBN), the apex regulatory authority in the Nigerian financial sector was established. The CBN derives its legal authority from the CBN Act No. 24 of 1991 (Amended in 1997, 1998, and 1999) and the Banks and Other Financial Institutions Act (BOFIA) No. 25 of 1991 (Amended in 1997, 1998 and 1999) and presently the CBN Act 2007, which preceded the CBN Act of 1958 and Banking Act of 1969.

ii. Expansion Phase

The expansion phase was directed at availing the public of banking activities and this was facilitated by the increase in network of branches. This involves the expansion of banks branches into the rural and semi urban areas. The phase also witnessed priority lending to some sector of the economy. This phase takes approximately from 1970 - 1985.

iii. Consolidation and Reform Phase

The Structural Adjustment Programme (SAP), which started in 1986, marked an era in Nigeria's financial sector reform. The monetary authorities relaxed the control and liberalize the sector. There was a deregulation of the economy and many institutions were set-up to regulate the growing financial sector. For example, there was the establishment of Nigeria Deposit Insurance Corporation (NDIC) in 1988, the Security and Exchange Commission (SEC) though established by SEC Act of 1979 but was further strengthened by SED Act of 1989 and Investment and Securities Act No. 45 of 1999.

Financial Sector Reforms

A peculiar feature of the reform program in Nigeria is the associated inconsistency in policy implementation. The financial sector in Nigeria is dominated by the banking sector, especially the commercial banking. The

deposit money banks (DMBs') accounts for 93.0 per cent of non-central assets in 2000 (World Bank, 1995) and 94.0 and 95.2 per cent of the aggregate financial savings in 2002 and 2003, respectively as well as above 60.0 per cent of the stock market capitalization. Commercial banking started in 1892 with the establishment of the first banking firm, Standard Bank of Nigeria Ltd (now First Bank). Since then, the number of commercial banks has exploded. Thus, an understanding of the structural changes in the financial sector as a whole is of great importance to all stakeholders; as it would help in designing appropriate legislation to enhance competition. The Nigerian banking system has undergone remarkable changes over the years, in terms of the number of institutions, ownership structure, as well as depth and breadth of operations. These changes have been influenced largely by challenges posed by deregulation of the financial sector, globalization of operations, technological innovations and adoption of supervisory and prudential requirements that conform to international standards. Prior to the reforms started in 2004, the Nigerian banking sector was still weak and fragmented, often financing short-term arbitrage projects rather than productive private investments [Kanayo & Micheal, 2011]. In essence all these measures and reforms were instituted to address the challenges of the banking sector and this shows that there are numerous challenges faced by the banking sector.

This study observe that there is a scarcity of literature on the challenges faced by Nigerian banks and therefore intends to explore and investigate the challenges faced by Nigerian banks and the way forward to address those challenges. The objective of this paper is to examine the challenges faced by Nigerian banking sector and proper solutions to the challenges.

To achieve the objective the null and alternate hypothesis were formulated:

- i. That the challenges faced by the Nigerian banking system affects their financial performance
- ii. That the challenges faced by the Nigerian banking system does not affects their financial performance

2.0 LITERATURE REVIEW

CHALLENGES FACED BY THE NIGERIAN BANKING SECTOR

Myriad of challenges exists and are currently affecting the efficacy of operations of the Nigerian banking sector to effectively perform their functions of intermediation in the Nigerian economy.

The major challenges faced by the Nigerian banks are as follows:

Inadequate Technological Innovation in operational services

The Nigerian banking sector market was hitherto dominated by competitiveness nature. The financial market in general was competitive because not only banks provide financial services other financial institutions that are not banks also do. There is fierce competition in the market hence the need for banks to acquire and deploy up to date ICT tools in their operations in order to capture the attention and loyalty of the customers. [REF XXX] Thus in the face of the keen competition in the industry, market players must devise new survival strategies. Financial institutions world-wide are compelled by the emergence of information technology to fast-forward to more radical transformation of business systems and models. It is in the same spirit that Bill Gates (2001) noted that:

“The successful companies of the next decades will be the ones that use digital tools to re-invent the way the work. These companies will make decisions quickly, act efficiently and directly touch their customers in positive ways. Going digital will put on the leading edge of the shock wave of change. That will shatter the old ways of doing business”.

We are now in a new era of technological revolution. Countries are beginning to compete and fight over control of information rather than natural resources. The vogue today is E-platform which implies offering financial services through electronic media to various customers irrespective of place, time and distance. A customer friendly environment with high quality service delivers needs to be created in order to enhance high patronage. To this end, improvement in banking technology and institutional arrangements for transmission mechanism as well as other operational areas of banking operations to ensure operational efficiency has become a compelling necessity. This encompasses electronic money, internet banking, telephone/mobile banking, reduction of cash transaction, smart card. ATM transactions and capacity to process high volume of transactions among others.

Human resources management

The centrality of the human resource in enterprise management is a generally accepted dictum. It is in this light that management needs to make adequate investment in human factor. It should be noted that there is no competitive weapon more potent and effective in the banking sector than the quality of its human resources. As remarked by Sanusi (2010) machines and advanced technology can provide informational and transactional convenience but only manpower can provide the credibility, creativity and care that can build long-term customer and client relationships. In other words, there is need for capacity building in our system to enable us cope with the wind of technological development. Besides, no matter how accurate or competent a computer is, it cannot feed itself with input and it can neither offer a welcoming smile nor a warm handshake (Ochejele, 2003). Banking (and indeed the entire sectors in the financial markets) is people-related and the quality of personnel will make the vital distinction between what constitutes a good bank and a bad one. Consequently, of all the challenges facing the Nigerian banking sector, human capital development is the most daunting.

Fraud prevention and monitoring system

Another major challenge facing the industry is the need to minimize the high rate of frauds and other malpractices in the system. It is imperative that bank managers and other market players give greater attention to the subject of maintaining the highest ethical and professional standards in all their transactions and dealings with their customers. This entails having adequate knowledge of Code of Conduct and Banking Practice jointly designed by the Chartered Institute of Bankers (CIBN), Central Bank of Nigeria (CBN) and the Bankers Committee (General Assembly of Bank Chief Executives). Issues of business integrity, respect for legitimate laws and regulations, concern for the society in which a bank operates will become as much important as profit consideration in the 21st century. The level of malpractices in the banking sector is high, hence there is need to put measures in place to curtail the malpractices to the barest minimum.

Liquidity management

While it is expected that there will be more external resource inflow to fund growth of the economy in this country, financial institutions must recognize their primary role in internal resource mobilization. It is assumed that the economy is awashed with liquidity and substantial portion of this liquidity is held as idle cash balances outside the banking system. The business of resource mobilization should therefore be seen as a major challenge facing the banking sector. In addition to internal mobilization of funds, banks must also ensure effective channeling of these resources to productive segments of our economy. The responsibility of promoting the economy's growth should be seen as a major challenge by all banks. Fund mobilization and allocation should therefore form a top priority of banks chief executive officers policies in this country.

Full autonomy of the Central Bank of Nigeria

The turnaround of the banking sector and indeed the economy would be difficult without an institutional and operational autonomy of the Central Bank of Nigeria (Ekundayo, 1996). The current situation where the apex institution is only given nominal autonomy which it cannot exercise effectively is not very healthy for the banking sector. The CBN should be given a leverage to establish its authority over its traditional area of jurisdiction. It is only with such authority that the apex institution will be able to formulate viable monetary policies and offer advisory services to the Federal Government on financial matters. To this, may be added the need for internationalization of the Nigeria capital market in spite of the malpractices in the market, the Nigerian Stock Exchange (NSE) has been intensifying efforts at encouraging cross-border listings. The NSE is reported to have signed a memorandum of understanding each with the Nairobi Stock Exchange, the Ghana Stock Exchange and the Johannesburg Stock Exchange NSE should endeavour to fight the malpractices to accentuate the internationalization of the Nigerian capital market.

A Need to Uphold Ethics and Professionalism In The Banking Sector

Ethics generally revolves around a set body of values, reformative guidelines and principles that embellish an individual with a sense of judgment and differentiation of right from wrong. There is need to adhere to the ethics and professional practice guiding the sector by the players in the banking sector. This is so and it supposed to be from ordinary banks staff to the management staff. Currently there is high level of unethical behaviours in the banking sector as evidence by the activities of marketers in the banking sector. It is in this context that this study view with serious concern the spate of ethical misconduct, unprofessional use of female staff in some banks in the name of 'marketing' and 'sourcing of funds, falsification of returns by the banks to the Central Bank, etc. Collectively, the stakeholders can stop these misconducts and give the system a new face. In recent times, the Central Bank of Nigeria has been intervening to investigate fraud, greed, insider abuse, etc. These were the succeeding results of unethical behavior from both bank staff and management. Unethical behavior is responsible for distress in banks. And apparently, punishments for these unprofessional behaviors are trivial.

Poor corporate governance practices

In the banking sector, proper governance is vital for improvement of company performance, attraction of investors and numerous more benefits. Whistle blowing and business ethics which can be encouraged through moral corporate governance, would undoubtedly lead to reduction in fraud in money deposit banks. Unfortunately, a substantial number of Nigerian banks lack moral corporate governance practices. The new code of corporate governance for banks is sufficient to minimize bank distress. But do banks adhere to this? Most of the banks do not actually adhere to corporate governance practice and there is need for them to see this as a serious challenge facing the sector. To function more effectively and efficiently banks should embrace the corporate governance issue as soon as possible.

Reliance on public sector funds

Most banks have abandoned the private sector in their chase for government funds. Heavy dependence on the public sector, crowds out the private sector from the economy. Consequentially, the Central Bank of Nigeria released a policy on the increment of cash reserve requirement for public sector. With the implementation of this policy, most banks began to source for income in the private sector.

Implementation of the TSA Treasury single account

The treasury single account is a financial policy used in several countries all over the world. Like other third world countries, it was introduced by the federal government of Nigeria in 2012 to consolidate all inflows from

all agencies of government into a single account at the Central Bank of Nigeria. But the previous government lack the political will to implement the policy until the coming of APC government in 2015 where TSA policy was implemented and it is yielding positive result in the economy as currently over N6 Trillion was save under TSA. This system establishes a unified structure as advised by the International Monetary fund where all government funds are collected in one account as this would reduce borrowing costs, extend credit and improve government's fiscal policy, among other benefits.

Insecurity and Bank Fraud

Fraud according to Adeniji (2004) and Asuquo (2005) is an intentional act by one or more individuals among management, employees or third parties which results in a misrepresentation of financial statement. The issue of insecurity and fraud in the banking sector is an interruption to the roles banks play towards economic development of the country Clementina, & Isu, [2016].

The increasing incidence of insecurity and frauds affect the already survival and viability of the banking sector. Fraud is not unique to the banking sector but due to the product which the banks deal on - cash and Nigeria is cash based economy, no area of banking system is immune to fraudsters, not even the operational security. The characteristic of this economy is that the cash will be physically held and touched. In Nigeria, studies indicate that more than 90% of funds are outside the banking sector as against the developed world where the money in circulation is 4% and 9% in the UK and US respectively. This explains the reason for the fragile nature of our banking system. The increasing rate of insecurity and fraud in the banking system, if not address might pose serious threats to the stability and the survival of individual banks and the performance of the sector as a whole (Nwankwo, 1991). Lamenting on the ugly impact of insecurity and fraud in banks, Saludo (2004) said that fraud has left untold hardship on the lives of bank owners, staff, customers and family members as most bank failures are always associated with large scale of frauds. Bank fraud may take any of the following form:

- Suppression of cash lodgments
- Forgeries of signatures
- Abuse of IOU's
- Un-authorized lending
- Fraudulent use of bank documents
- Over-invoicing of purchases among others
- Fraudulent loans
- Forgery and altered cheques

Poor Internal control system mechanism

Often times the internal control of many banks is not allow to functions well due to management interference.

Restriction on foreign currency capital transactions

There are many restrictions on the commercial banks on foreign currency transactions and this do not allow banks to actually get involve on the issue of foreign currency at ease and therefore create a hindrance for the banks to fully have a say on the foreign currency transaction in the country and create a big challenge for the banks to satisfy their customers that deals with foreign transactions especially the demand of foreign currency for importers and the issue of BTA.

Need to access banking services at lower costs (only possible if industry costs are lowered)

This is another challenge because customers want to always access banking services at possible lowest cost, in fact a customer want to have banking service at zero cost if possible. This is actually not possible because banks are in business to make profit and satisfy shareholder needs. It is actually a challenge for the banking industry but they can minimize the operation cost to ensure that customers access banking services at lowest possible cost.

Poor Cost Control/Cost Reduction

Most of the Nigerian banks are not embracing cost control in terms of their spending culture. Banks themselves and the staff are flashy in life and are not actually cutting costs that supposed to be reduced. Example the use of exotic and flashy official vehicles by banks; this cost can actually be cut down if the banks can revert to using average cars for official purpose.

Large Percentage of Non-Performing loans

Defaulters are many, ranging from corporate defaulters to individuals defaulters and most of the defaulters are not having substantial security where the banks can easily rely on to recover their money. There is presence of non-performing loans and this has adversely affected the financial performance of the banks and consequently affects the benefits of the shareholders in terms of the dividend that is to be provided.

High Cost of Doing Business In the Environment

The cost of doing business in Nigeria is still high when compared with developed economies or some emerging and developing countries owing to the poor state of infrastructure.

Challenge of Inadequate FX for Customers

Customers find it difficult to get foreign currencies from their banks especially dollars, euro and pounds sterling, banks in Nigeria are struggling to source FX for imports to their customers as a result if fail to meet FX for customers tends to lose some of their important customers.

Violations of The Banking laws, Rules and Regulations as Reported By The NDIC

Nigeria has the fastest growing banking system in Africa, and one of the fastest in the world, but the violation of the banking laws pose a serious challenge to this development Charles Soludo [2004]. Banks most often violates Money Laundering (Prohibition) Act, 2004 to satisfy the needs of their customers especially the rules pertaining to "Know Your Customers" (KYC) requirements and the cash transfer limits.

Granting Credit Facilities In Excess of Specified Single Obligor Limits

Some of the Nigerian banks are still violating the credit guidelines of the specified amount to be granted to the single borrower and this pose a serious challenge to the banking operation and the going concern of the bank.

Investments in Subsidiaries without CBN Approval and Violation of Corporate Governance Practice

Some banks had turned their various subsidiaries into vehicles for circumventing regulatory requirements. For instance, some banks engaged in financing highly risky business activities including speculative trading in stocks and shares through their respective subsidiaries. In fact, the CBN reveal that banks total exposure to Capital market as at January, 2009 was N784 billion. Presently some banks have various weaknesses in Corporate Governance. Some of them were yet to imbibe the tenets of the Code of Corporate Governance issued by the CBN in 2006. Example of some critical corporate governance issues includes non-performing-insider-related debts, board oversight was weak in some of the banks, in some instances, the Boards had

assigned the responsibility of vetting big ticket transactions to their respective credit committees that were often dominated by the executive directors. Others are investing in subsidiaries without CBN approval, failure to appoint independent directors etc.

2.1 SOLUTIONS TO THE CHALLENGES OF THE NIGERIAN BANKING SECTOR

Improvement in Financial and Regulatory Reporting

Proponents of banking globalization refer to the multitude of banking crisis during the last two decades and point to the weaknesses of the regulatory and supervisory environment in many emerging markets.

Immediate Stoppage of Capital Flight to Foreign Banks

The fact that international banks are perceived to be sounder than local banks in times of crisis has led some to argue that foreign bank presence opens the possibility of a capital flight at home. Before the appearance of foreign banks, investing abroad was the only safe haven for domestic depositors, given the lack of credible deposit insurance. Now, under the assumption that foreign banks are strong enough to withstand a crisis, all depositors need to do is transfer their savings from local to foreign banks.

Globalization of the Nigerian Capital Market

There is need to open up the Nigerian capital market for foreign investors and foreign companies to list their shares. By such doing it will give way for foreign investors to have interest in buying the shares of Nigerian banks and consequently generates capital flow in to the banks and makes the bank to get more stronger.

Acquisition and Deployment of Latest Technological Innovation on Banking Business

Nigerian banks need to embrace information technology. This is one of the preconditions for a nation to be integrated into the global financial market and reap the benefit therefore, banks must train their staff in e-banking which has the advantage of reducing cost of transactions and increasing the speed of transaction and profitability.

There is need for strengthening the regulatory and supervisory institutions and strict implementation of Money Laundering Laws and other legislation laws to effectively tackle fraud and fraudulent activities: upward review of capital market deregulation and introduction of indirect monetary policy instruments. The regulatory bodies in the financial markets such as the Central Bank of Nigeria (CBN) and Securities and Exchange Commission (SEC) should be granted complete autonomy. This will enable them fight the malpractices in the system and also formulate viable monetary policies that will insulate the financial markets and the economy at large against domestic and external macroeconomic shocks. Recent developments in the banking sector, including increased signs and incidence of distress, are a cause for serious concern and call for decisive and expeditious actions to safeguard the stability and soundness of the banking system. Legal and regulatory enforcement is needed to ensure action is taken against those that violate their prudential and financial obligations, and to act as a credible deterrent for all market participants [Kanayo & Micheal , 2011] there is need for banks to offer better banking services through diversified delivery channels to customers: Banks should be customers focus. There is need for banks to imbibe the culture of cost control

There is need for banks to imbibe the culture of ethics and professionalism Strict Compliance to effective corporate governance Prevention of Fraud and Insecurity in Banks: It is also necessary to carry out audit checks on all transactions as soon as they are made because delay might have dire consequences on the bank.

Similar checks should also be carried out on vouchers raised for expenses (printing, stationeries, stock, office equipment etc.) Market surveys should be conducted before approvals are given for the purchases. Members of the Board of Directors should not just be people, who have stakes in the banks but should be knowledgeable in banking and accounting, to enable them carry out their supervisory role effectively. There should be Greater Transparency and Accountability in Banking Operation.

These measures, we believe, will help to reduce the increasing rate of fraud and acts of insecurity in Nigerian banking sector.

3.0 METHODOLOGY

The population of this study comprises of all the twenty four (24) commercial banks quoted by the Nigerian stock exchange (NSE). Bank qualify only to be one of the sample of this work if it has a branch in Bauchi state metropolis because of the limited time for the research work and the paucity of resources to be employed to conduct this study. The application of these conditions results in the emergence of fifteen (15) Banks as the sample of the study, which include: First bank of Nig Plc, PolirisBanK Plc, Keystone Bank Plc, Guarantee Trust Bank Plc, Diamond Bank Plc, Sterling Bank Plc, Access Bank Plc, United Bank of Africa Plc, Stanbic IBTC Bank Plc, Heritage Bank Plc, Union Bank Plc, Unity Bank Plc, Zenith Bank Plc and Wema Bank Plc. The study employed the use of Questionnaires of each of the business development officers [BDM] of the each main branch of the banks and two other operation staff of the banks were engage to fill the questionnaires which includes BDM on the challenges facing the bank. The data were analyzed using the chi-square [x2] method of analysis and the result was presented with the explanation of the analysis.

3.2 Research Instrument

In order to have a comprehensive and reliable source of information, strictly structured questionnaires were administered to respondents in the selected banks to obtain information on the challenges facing Nigerian banks. The questionnaires is divided into two parts, Section A is related to demographic information and section B consist of questions (Yes or No questions) relating to the subject of the study. Chi-square was used to analyzed data and this include simple percentages, the use of percentages was very much recommended by Asika, (2004).

Simple percentage is given by = $\frac{\text{Number}}{\text{Total}} \times 100$

- i. Chi-square (X^2) is given by the formula $X^2 = \sum_{i=1}^h \left(\left(\frac{fo-fe}{fe} \right)^2 \right)$
- ii. Where: X^2 = chi-square $\sum$ = summation Fe = expected frequency Fo = observed frequency and fe (expected frequency) is given by = (row total X column total)
- iii. The degree of freedom necessary for the application of chi-square (X^2) is determined thus; $df = (r - 1)(c - 1)$ Where: r = number of rows. c = number of columns
- iv. The level of significant used is 0.05 or 95%
- v. Decision rule: To reject the null hypothesis if the calculated chi-square (X_c^2)^h is less than the tabulated chi-square (X_t^2)^h. This is, if $X_c^2 < X_t^2$ and accept H_+ .
 H_o and accept H_+ .

3.3 Testing Hypothesis

In testing the hypothesis, the chi-square (X^2) test was employed, this is because it could be used for both small and large samples. The chi-square test is a measure of the discrepancies exiting between the observed

frequencies and expected frequencies of one or more variables.

- i. **H₀**: That the challenges faced by the Nigerian banking system affects their financial performance
- ii. **H₁**: That the challenges faced by the Nigerian banking system does not affects their financial performance

In line with the hypothesis question, question 2 of the questionnaire was used to test the hypothesis and the responses are as follows:

Table 1.1 Contingency Table for Testing of Hypothesis

OPTIONS	Number of respondents		Total
	Operation Staff	Business Development Officer	
Yes	23	12	35
No	5	2	7
Total	28	14	42

Source: Survey 2018

The table 1.1 above shows that a total of 42 questionnaires were retrieved out of the 45 questionnaires distributed and the 3 that were not accounted in the table are invalid for the analysis.

Computation of the test using the chi-square (X^2)

$$\begin{aligned}
 X^2 &= \sum_{i=1}^h \left(\frac{fo-fe}{fe} \right)^2 \\
 &= \left(\frac{35 \times 28}{42} \right) \\
 &= 23.33 \\
 &= \left(\frac{7 \times 28}{42} \right) \\
 &= 4.66 \\
 &= \left(\frac{35 \times 14}{42} \right) \\
 &= 11.66 \\
 &= \left(\frac{7 \times 14}{42} \right) \\
 &= 2.33
 \end{aligned}$$

4.0 Analysis and Discussion of Results

Table 3.2: Chi-Square Table for testing hypothesis

OF	EF	(OF-EF)	(OF-EF) ²	$\left(\frac{(OF - EF)^2}{EF} \right)$
23	23.33	0.33	0.66	0.0283
5	4.66	-0.34	-0.68	-0.1456
12	11.66	-0.34	-0.68	-0.0583
2	2.33	0.33	0.66	0.2832
		0.66		$X_c^{2h}=0.108$

$$X^2 = \sum^h \left(\frac{OF - EF}{EF} \right)$$

$$X_c^{2h} = 0.108$$

$$X_t^{2h} = 3.841$$

While taking @ (level of significance) =0.05

Degree of freedom =1

—————→ 3.841 > 0.108

Decision

From the above- calculated chi-square $(X_c^2)^h$ is 0.288 which is less than the tabulated Chi-square (X_t^2) 3.841. ^hi.e. $X_c^{2h} < X_t^{2h}$

Since the calculated Chi-square is less than the tabulated Chi-square we can now reject the null hypothesis which says the challenges faced by the Nigerian banking system affects their financial performance and accept the alternate hypothesis which says the challenges faced by the Nigerian banking system does not affects their financial performance

4.0 RESULTS AND DISCUSSIONS

This section presents, analyses and interpret the results obtained from the generated data of the questionnaire.

4.1 SUMMARY OF FINDINGS

This research work study the challenges of the Nigerian banking sector and the way forward. Banking sector in Nigeria is a very important key to driving the economic activities apart from their role of financial intermediation, they also provides a lot of employment opportunities to the citizens of the country. As such the challenges faced by them should be squarely address by the government and the regulatory authorities to improve their contribution to the nation economy.

Even though, the findings revealed that, the challenges faced by the Nigerian banking sector does not affects their financial performance. However, efforts should be in place to addressed those challenges identified in the study.

5.0 CONCLUSION AND RECOMMENDATIONS

This study concludes that banking sector challenges in Nigeria do not affect the financial performance of the banks, but care and necessary support both in terms of policy and operational support should be given so as to improve their contribution to the Nigerian economy. The study recommends that government and relevant regulatory agencies should put heads together to render support and address those challenges identified that affect the sector. also Nigerian banking sector should invest in both technological innovation and human capital development, they should imbibe the culture of good corporate governance and stick to the issue of banking ethics and professionalism among others.

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TAX HAVENS AND THE EROSION OF DOMESTIC REVENUE MOBILIZATION: IMPLICATIONS FOR SDG 17.3 AND THE FINANCING OF SUSTAINABLE DEVELOPMENT

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Abstract

This study examines the impact of tax havens on domestic revenue mobilization and its implications for the financing of Sustainable Development Goal (SDG) 17.3, which focuses on mobilizing financial resources for developing countries. Using secondary data from the World Bank, IMF, and UNDP, the research analyzes data of Sub-Saharan African countries over the period 1984-2022. OLS regression model is applied to assess the relationship between illicit financial flows (facilitated by tax havens) and tax revenue as a percentage of GDP. The study finds an insignificant positive relationship between illicit financial flows and domestic revenue mobilization. Additionally, HDI and PCI are positively associated with higher tax revenue to GDP. The positive relationship between tax haven exposure and DRM contradicts the conventional expectation of a negative relationship. Typically, tax havens are associated with the erosion of the tax base, as they facilitate illicit financial flows that reduce the amount of revenue countries can collect. However, it is important to note that the relationship between TXH and DRM is not statistically significant, suggesting that this positive effect may not be robust or reliable. The study suggest several key policy actions for enhancing domestic revenue mobilization (DRM) in Sub-Saharan Africa through investing in human development, addressing tax haven exposure, promoting economic growth, improving tax administration and focus on low-income countries.

Keywords:

Tax Havens; Domestic Revenue Mobilization; Illicit Financial Flows; SDG 17.3; Sustainable Development Goals; Developing Countries.

INTRODUCTION

The global quest for sustainable development has been markedly shaped by the adoption of the United Nations' Sustainable Development Goals (SDGs) in 2015. Among the 17 SDGs, Goal 17 stands out, aiming to reinforce the means of execution and invigorate the universal partnership for sustainable development. Within this goal, Target 17.3 focuses specifically on the need to generate supplementary financial resources for developing countries from various sources. A critical component of this financial mobilization is domestic revenue generation, which is often undermined by a range of factors, including tax avoidance, corruption, and illicit financial flows (Forstater, 2018). Among these factors, tax havens have emerged as a significant challenge, as

they facilitate the outflow of vast amounts of capital from developing countries, depriving governments of essential revenues that could be used to finance national development agendas (Signé, Sow & Madden, 2020).

Tax havens, typically characterized by low or zero tax rates, financial secrecy, and a lack of transparency, have become key mechanisms for multinational corporations, wealthy individuals, and illicit actors seeking to evade taxes or conceal assets (Zucman, 2014). This phenomenon not only reduces the tax base of countries but also exacerbates inequality by diverting resources that could otherwise contribute to national infrastructure, healthcare, education, and poverty reduction (Cobham & Janský, 2018). In particular, developing nations, which often rely more heavily on domestic tax revenues to fund their development goals, are disproportionately affected by the erosion of their tax bases (UNCTAD, 2015).

The impact of tax havens on domestic resource mobilization presents a direct challenge to the realization of SDG 17.3, as the loss of revenue hampers the ability of governments to finance the achievement of other SDGs, including those related to poverty alleviation, quality education, and clean energy. In this context, addressing tax havens and enhancing tax compliance become vital not only for increasing domestic resource mobilization but also for ensuring that sustainable development financing is both equitable and effective.

While the international development community often focuses on the amount of aid and investment that enters the African continent, the other part of the balance sheet, the funds exiting the continent has often been overlooked. Between 1980 and 2018, sub-Saharan Africa received nearly \$2 trillion in foreign direct investment (FDI) and official development assistance (ODA), but emitted over \$1 trillion in illicit financial flows. These flows, illicitly acquired and channeled out of the continent, continue to pose a development challenge to the region, as they remove domestic resources which could have been crucial for the continent's economic development (Signé, Sow & Madden, 2020).

A recent study produced by Global Financial Integrity (GFI) estimates illicit financial flows out of all developing countries at \$858 billion to \$1.06 trillion a year. Among developing countries, Africa presents the most analytical difficulties because countries with inadequate data account for nearly 37 percent of regional GDP (Kar & Cartwright-Smit, 2008). One thing is certain: while African countries have had to shoulder a heavy debt burden, a number of researchers such as Ndikumana and Boyce (2008), have shown that sustained illicit outflows have turned the continent into a net creditor to the rest of the world.

This article explores the relationship between tax havens and the erosion of domestic revenue mobilization, analyzing the implications for SDG 17.3 and the broader financing of sustainable development. It highlights the ways in which tax havens contribute to the depletion of government revenues, particularly in developing countries, and discusses potential strategies for mitigating their impact through international cooperation, tax reforms, and greater transparency.

LITERATURE REVIEW

Tax Havens

The concept of tax havens refers to jurisdictions that offer minimal tax rates, financial secrecy, and a high level of confidentiality for individuals and businesses. These havens facilitate tax avoidance and evasion through loopholes in international taxation laws, often by allowing individuals and companies to shield assets or income from the taxing authorities of their home countries (Zucman, 2014). A tax haven typically provides a set of attributes such as low or zero tax rates, secrecy laws, and light regulatory environments that encourage the diversion of funds from high-tax jurisdictions to lower-tax jurisdictions (Johannesen & Zucman, 2014).

Some Top Tax Haven Countries

Hong Kong with 0-16.5% corporate tax with exemption of foreign source income from tax. Secondly,

Switzerland has long been associated with being a tax haven with 11% to 21% corporate tax. Thirdly, Luxembourg is often considered a European tax haven due to its attractive tax regime with a corporate tax of 15% to 17% and it offers an exemption on long term capital gains exceeding a certain threshold. Fourth, The Netherlands is a home to over 25,000 multinational enterprises more than half of which are under foreign control. Luxembourg and Netherlands account for over 50% of FDI into the European Union with a corporate tax rate of 19% to 25.8%. Fifth, Singapore offers well developed infrastructure, stable politics, and free trade agreements with numerous countries in addition to favorable corporate tax policies, the country have zero tax on capital gains.

Illicit Financial Flows

Different international agencies such as the UN (2016, 2016a), OECD (2013, 2015) and the World Bank (2016) have defined illicit financial flows. The AU/ ECA High Level Panel's Report (2015) adopted the definition suggested by the Global Financial Integrity and defined illicit financial flows as “money illegally earned, transferred or used”. However, the AU/ECA HLP Report (2015, p.23) broadened its definition and described illicit financial flows as comprising of activities “that while not strictly illegal in all cases, go against established rules and norms, including legal obligations to pay tax”. It thus covers not only actions that are illegal, but also includes those which are not explicitly forbidden by laws but are unacceptable in the light of unwritten rules, the spirit of the law, or their purpose. This definition covers all flows whether legal or illegal (Institute for Austrian and International Tax/African Tax Institute/UNODC, 2016).

Generally, the literature suggests that the most popular definition of illicit financial flows is the definition by the Global Financial Integrity which defines illicit financial flows as “cross-border transfers of funds that are illegally earned, transferred or utilized”. Somewhere at its origin, movement or use, the money was gained or retained through illegal means and hence it is considered illicit. The assumption of this definition is that the transfers take place through unregistered channels because their background or purpose is illegal (Majdanska, 2015). Many of the definitions of illicit financial flows centre around the legality or illegality associated with the flows.

Methods of Shifting Profit

Allocation of Debt and Earnings Stripping

One method of shifting profits from a high-tax jurisdiction to a low-tax one is to borrow more in the high-tax jurisdiction and less in the low-tax one. This shifting of debt can be achieved without changing the overall debt exposure of the firm. A more specific practice is referred to as earnings stripping, where either debt is associated with related firms or unrelated debt is not subject to tax by the recipient (Gravelle, 2022).

Transfer Pricing

The second major way that firms can shift profits from high-tax to low-tax jurisdictions, and the one that appears most important, is through the pricing of assets, goods, and services sold between affiliates. To properly reflect income, prices of assets, goods, and services sold by related companies should be the same as the prices that would be paid by unrelated parties. By lowering the price of assets, goods, and services sold by parents and affiliates in high-tax jurisdictions and raising the price of purchases, income can be shifted (Forstater 2018; Gravelle, 2022).

Trade Mis-Invoicing

Trade misinvoicing is one method of laundering money for illegal transfer to another country where exporters or importers deliberately misreport the value, quantity, or nature of goods and services in order to evade taxes, take advantage of tax incentives, avoid capital controls, or launder money (Forstater 2018).

Contract Manufacturing

When a subsidiary is set up in a low-tax country and profit shifting occurs, as in the acquisition of rights to an intangible, a further problem occurs: this low-tax country may not be a desirable place to actually manufacture and sell the product. For example, an Irish subsidiary's market may be in Germany and it would be desirable to manufacture in Germany. But to earn profits in Germany with its higher tax rate does not minimize taxes. Instead the Irish firm may contract with a German firm as a contract manufacturer, who will produce the item for cost plus a fixed markup (Gravelle, 2022).

Domestic Revenue Mobilization

Domestic revenue mobilization refers to the process by which countries generate public revenue from domestic sources, primarily through taxation. Effective revenue mobilization is fundamental for financing public goods and services, such as education, healthcare, infrastructure, and poverty alleviation programs, which are essential to achieving the SDGs (Bird, 2015). When domestic tax systems are undermined by tax evasion and avoidance through tax havens, governments in developing countries experience significant revenue shortfalls, which can erode their capacity to fund public services and sustainable development projects (Cobham & Janský, 2018).

The Addis Ababa Accord emphasized the importance of domestic resource mobilization for financing development. In the Declaration at the end of the Conference on Financing Development held in Addis Ababa (2015), it was stated, “Domestic resource mobilization and effective use is the crux of our common pursuit of sustainable development and achieving the SDGs”. It added that domestic public resources are a more stable and sustainable source of revenue, they also strengthen a legitimate relationship between citizens and the state and foster good governance. Thus, tax policies should emphasize growing revenue and reducing avenues for illicit flows such as tax evasion and tax avoidance.

SDG 17.3

SDG 17.3, within the context of sustainable development, seeks to generate supplementary financial resources for emerging economies from several sources (United Nations, 2015). The importance of enhancing domestic resource mobilization to achieve this goal is recognized as a crucial pillar for financing development. The existence of tax havens directly conflicts with this target by diverting financial resources away from the tax bases of developing countries, thus reducing their ability to invest in social and economic development.

Tax Haven and Domestic Revenue Generation

Few studies have examined the link between tax havens and the erosion of domestic revenue mobilization, particularly in developing economies. According to Zucman (2014), global wealth hidden in offshore tax havens amounts to over \$7.6 trillion, much of which originates from developing countries. This capital outflow leads to a significant loss of potential tax revenue, particularly for countries that rely heavily on income from corporate taxation. Empirical studies by Johannesen and Zucman (2014) highlight that tax avoidance via offshore financial centers exacerbates inequality, with multinational corporations and wealthy individuals in developing countries shifting profits to low or no-tax jurisdictions.

In an African context, (Cobham and Janský (2018); Signé, Sow and Madden (2020)) estimate that Sub-Saharan Africa loses approximately \$50 billion annually to illicit financial flows, a significant portion of which is facilitated through tax havens. This loss of revenue reduces the financial resources available to fund critical public services such as health, education, and infrastructure development. A study by UNCTAD (2015) found

that many African countries, facing large deficits in tax revenue due to tax avoidance, must either borrow money or rely on foreign aid, which often comes with unfavorable terms, further weakening their development prospects.

Recent empirical studies have also explored how tax havens influence the financing of the SDGs. For instance, Baker (2020) examined the relationship between illicit financial flows and SDG financing, arguing that the depletion of domestic resources through tax havens undermines the ability of governments to implement effective SDG strategies. This is particularly problematic for countries striving to meet ambitious goals in poverty reduction, quality education, and clean energy, all of which require substantial public investment.

Signé, Sow and Madden (2020) assess the drivers and destinations of illicit outflows, and examine policy options to reduce them from 1980 to 2018. Using trade mis-invoicing and balance-of-payments discrepancies to estimate illicit financial flows, the study find higher real GDP is associated with higher illicit financial flows due to the increased opportunities to channel illicit resources abroad generated by higher economic activity, suggesting a need for increased diligence as countries grow. The study also find that higher taxes and higher inflation lead to higher illicit financial outflows, suggesting that firms seek out relatively more stable or favorable fiscal environments for their funds. We further find that, over the past decade, there has been an increase in illicit outflows of capital toward emerging and developing economies (e.g., China) as trade between Africa and these countries has increased.

Austin and Nadler (2024) examine an unintended consequence of tax policies that have made the United States a tax haven, and its trade deficit. The study proposed unwinding tax preferences for foreign holders of U.S. financial assets to reduce the United States' external borrowing and trade deficit.

Suzuki (2024) theoretically explore the effect of tax rate hikes in tax havens on the profit shifting of firms and tax competition among governments in high-tax countries. It uses an analytically tractable model to examine the effects of tax rate hikes in tax havens on high-tax countries in which firms shift a portion of profits to tax havens. The results reveal that tax rate hikes in tax havens decrease the profit shifting of high-tax countries. Moreover, when tax havens raise the tax rates, the marginal effective tax rates in high-tax countries decrease, which aggravates tax competition among high-tax countries. These results cast doubt on the optimistic view that efforts to urge tax havens to raise their tax rates, such as the introduction of a global minimum tax, will end both profit shifting and tax competition.

DePaul, Murphy and Vernon (2024) study the country reputational costs of being publicly identified as a tax haven by examining the effects of the recent European Commission's (EC) list of non-cooperative jurisdictions for tax purposes on tourism and FDI for the listed countries. Consistent with a reputational cost of the EC's name and shame campaign, there is a modest reduction in EU tourism among listed countries compared to unlisted ones. This relative reduction is concentrated among tourists from countries that view cheating on taxes as less justifiable. In contrast, listed countries experience a general increase in FDI following the list, a benefit potentially offsetting the costs of reduced tourism.

Cooke and Boix-Doménech (2024) examine tax haven clusters considering them as diverse but recognizable examples of about fifty phenomena worldwide rarely studied from an economic geography perspective. Three canonical but diverse examples of tax haven clusters are used for the analysis: Wilmington in Delaware (United States), Ireland (European Union), and Gibraltar (former European Union, now post-Brexit British Overseas Territory). The study concluded that the characteristics of tax haven clusters require more recognition of the interactive and often innovative communication networks through which cluster members interact globally, given they exist within a global system akin to an assemblage.

Theoretical Review

The theoretical foundation for understanding the role of tax havens in undermining domestic resource mobilization can be found within the frameworks of taxation theory and development economics. The public goods theory suggests that taxes are a necessary tool for governments to fund public goods, such as education, health, and infrastructure, which are essential for economic development (Musgrave, 1989). Tax havens, by reducing the tax base and enabling capital flight, undermine the government's ability to provide these public goods, particularly in developing countries that are dependent on domestic taxation for financing public services (Bird, 2015).

From a development economics perspective, dependency theory posits that developing countries are trapped in a cycle of economic dependency on wealthier countries and multinational corporations, which often take advantage of tax havens to reduce their tax liabilities (Rodney, 1972). This results in the continuous extraction of resources from developing economies, exacerbating poverty and hindering their efforts to achieve sustainable development. Moreover, neoliberal economic theory emphasizes the importance of free markets and minimal government intervention. However, the unchecked flow of capital into tax havens challenges this framework, as it leads to market distortions and inequality (Harvey, 2005).

In the context of global governance, institutional theory argues that the existence of international regulatory gaps (such as the lack of a global tax authority) enables tax havens to thrive. The absence of strong international institutions to enforce tax compliance across borders leads to a race to the bottom, where countries compete to offer the most favorable tax conditions for multinational corporations and wealthy individuals (Sachs, 2005).

METHODOLOGY

This study adopts a quantitative research design using secondary data from reputable international institutions (United Nations Development Programme (UNDP), the World Bank, and the International Monetary Fund (IMF)), which regularly publish datasets related to national economic indicators, tax revenues, and global financial flows. This study's population comprises of the entire fifty five (55) Sub-Saharan African countries where thirty eight (38) were purposively selected to represent the population using data availability as the criteria for selection. Due to unavailability of data on yearly basis the aggregate average data for thirty three (33) years was used across the thirty eight (38) Sub-Saharan African countries, hence making the data across sectional data. To assess the implications of tax havens on domestic revenue mobilization and the financing of SDG 17.3, the following key variables are measured as follows:

Dependent Variable: Domestic Revenue Mobilization (DRM) is measured by tax revenue as a percentage of GDP, which is a common indicator of how much revenue a country generates from taxes in relation to its overall economic output. This data was easily accessed from the World Bank and IMF (Bello, et al. 2025).

Independent Variables: Tax Havens is measured using the outflow of capital from a country to tax havens, which reduces the tax base and it is represented by estimates of illicit financial flows (Brandt, 2020).

Control Variables (Economic and Fiscal Indicators)

Per capita income: computed as per capita real GDP, using US dollars nominal exchange rate of 1990 (IMF, 1998).

Human Development Index: Index of Human Development measured using four indices (secondary school enrolment ration; literacy rate; life expectancy at birth; and one thousand minus the infant mortality rate) (IMF, 1998).

The model for analysis is specified as follows:

$$DRM_i = \alpha + \beta_1(TXH_i) + \beta_2(PCI_i) + \beta_3(HDI_i) + \epsilon_i$$

Where:

DRM_i = Domestic revenue mobilization for country i.

TXH_i = A measure of tax havens using illicit financial flows for country i.

PCI_i = Per Capita Income of country I.

HDI_i = Human Development Index for country i.

α = Constant.

ϵ_i = Error term.

This model estimated using robust OLS regression.

RESULTS AND DISCUSSION

The results of the regression analysis, which examined the relationship between tax havens, domestic revenue mobilization, and key economic variables in the context of SDG 17.3, are summarized below. The analysis utilized data from 38 Sub-Saharan African Countries spanning from 1984 to 2022, using data sourced from the World Bank, IMF, and UNDP.

Descriptive Statistics

Table 1: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
DRM	38	16.28684	8.541004	6.2	37.4
TXH	38	3.976842	0.7262123	2.17	5.64
PCI	38	869.8684	1215.546	101	5178
HDI	38	100.2105	9.156766	84	126

Source: Author's Computation using Stata software, 2025

The DRM variable, which represents the percentage of GDP mobilized through domestic tax revenue (proxied by illicit financial flows), includes data from 38 countries in Sub-Saharan Africa. The mean DRM is 16.29%, suggesting that, on average, these countries are able to mobilize approximately 16.29% of their GDP through taxes. However, there is considerable variability in the DRM, as indicated by the standard deviation of 8.54%. This reflects the wide range of tax revenue mobilization across the countries, with some achieving significantly higher or lower levels. The minimum DRM value is 6.2%, indicating that some countries are able to mobilize relatively small proportions of their GDP through taxes, while the maximum value is 37.4%, showing that a few countries manage to raise much higher revenues. This variability highlights the differing capacities of countries in Sub-Saharan Africa to mobilize domestic resources, potentially due to factors such as governance, economic structure, or the presence of tax havens.

The mean HDI is 3.98, indicating a moderate level of human development across the countries in the sample. The standard deviation of 0.73 suggests considerable variation in human development levels, with some countries significantly outperforming others in areas such as education, healthcare, and income. The HDI ranges from a minimum value of 2.17 to a maximum value of 5.64, indicating substantial differences in human development across the region. The per capita income (PCI) variable, representing the average income per person in each country, shows an average of \$869.87. This reflects relatively low income levels in Sub-Saharan Africa, which is typical for many countries in the region. The standard deviation of \$1215.55 is quite large, indicating significant disparities in income levels. The PCI ranges from a minimum of \$101 to a maximum of \$5,178, illustrating the vast income inequality that exists across Sub-Saharan Africa. Countries with lower per

capita incomes may face greater difficulties in raising domestic revenues, as their tax base is smaller, which could also impact their ability to fund sustainable development goals.

Correlation Analysis

The correlation analysis provides an understanding of the relationships between tax haven exposure, domestic revenue mobilization, human capital, and per capita income in the context of Sub-Saharan Africa. These findings can help guide further exploration into how these factors interact and influence the achievement of sustainable development goals, particularly SDG 17.3, which focuses on enhancing domestic resource mobilization.

Table 2: Correlation Result

	DRM	TXH	PCI	HCI
DRM	1.0000			
TXH	0.3376	1.0000		
PCI	0.5980	0.2302	1.0000	
HCI	0.6762	0.2470	0.6383	1.0000

Source: Author's Computation using Stata software, 2025

The correlation result indicated that there is a moderate positive correlation between DRM (proxied by illicit financial flows) and Tax to GDP (TXH), with a correlation coefficient of 0.3376. This suggests that countries with a higher reliance on tax havens (higher TXH) tend to experience somewhat higher domestic revenue mobilization, but the relationship is not particularly strong. It may imply that tax haven exposure may play a role in increasing or reducing DRM, but other factors are likely influencing this relationship.

The moderate correlation between DRM and tax haven exposure (TXH) suggests that the use of tax havens is somewhat related to domestic revenue mobilization in Sub-Saharan Africa. Countries that engage more with tax havens may either suffer from revenue losses due to illicit financial flows or benefit from practices that optimize tax revenue collection. However, other factors such as governance quality, enforcement capacity, and international regulations, are likely to influence the relationship.

Regression Analysis

Table 3: Regression Results

DRM	Coef.	Std.Err.	t	P> t	[95%Conf.Interval]	
TXH	1.899	1.960	1.32	0.195	-1.0205	4.818
PCI	.0018	.0011	1.70	0.099	-.0004	0.004
HCI	.4381	.1440	3.04	0.005	0.1454	0.731
Cons	-	14.25	-2.58	0.014	-65.72	-7.802
	36.76					

Source: Author's Computation using Stata software, 2025

The regression results show that the relationship between domestic revenue mobilization (DRM) and tax haven exposure (TXH) is positive, but not statistically significant. The coefficient for TXH is 1.899, indicating that for each 1% increase in tax haven exposure, DRM would increase by about 2%. However, the high p-value of 0.195 indicates that this relationship is not statistically significant, meaning we cannot confidently assert that tax haven exposure influences DRM in Sub-Saharan Africa.

The positive relationship between tax haven exposure (TXH) and DRM contradicts the conventional expectation of a negative relationship. Typically, tax havens are associated with the erosion of the tax base, as they facilitate illicit financial flows that reduce the amount of revenue countries can collect. However, this result could be explained by a few factors. Countries with higher exposure to tax havens may be engaging in legal tax optimization strategies that increase their ability to collect revenue. Alternatively, the measure of tax haven exposure (TXH) may not fully capture illicit financial flows, potentially leading to misleading results. Moreover, governments in countries with greater tax haven exposure might be strengthening their tax systems in response, thereby increasing DRM despite the presence of illicit financial flows. However, it is important to note that the relationship between TXH and DRM is not statistically significant, suggesting that this positive effect may not be robust or reliable.

Policy Implications

The findings suggest several key policy actions for enhancing domestic revenue mobilization (DRM) in Sub-Saharan Africa:

Invest in Human Development: Strengthening education and healthcare systems is crucial, as improved human capital is significantly linked to higher DRM. This should be a priority for governments to enhance workforce productivity, tax compliance, and public sector accountability.

Address Tax Haven Exposure: While tax haven exposure didn't significantly erode DRM, it's important for governments to tackle illicit financial flows and tax evasion. Strengthening transparency, enforcement, and international cooperation can help mitigate these challenges.

Promote Economic Growth: Although the link between per capita income (PCI) and DRM is weak, fostering inclusive growth and industrialization can broaden the tax base, ultimately supporting DRM through increased income and formalization of the economy.

Improve Tax Administration: Enhancing tax collection systems, investing in technology, and strengthening governance in tax institutions are critical for increasing DRM. Combating corruption and improving tax compliance is essential.

Focus on Low-Income Countries: Low-income countries should focus on fiscal reforms to optimize the existing tax base, such as expanding VAT and progressive taxation, and developing frameworks to manage illicit financial flows.

Conclusion

This study examined the impact of tax haven exposure, per capita income, and human capital on domestic revenue mobilization (DRM) in Sub-Saharan Africa, with a focus on the implications for sustainable development financing. The findings reveal that the relationship between tax haven exposure and DRM, while positive, was not statistically significant, suggesting that the expected negative effects of tax havens on DRM may not be as pronounced as initially thought. Similarly, while per capita income showed a positive but weak association with DRM, the effect was not robust enough to draw definitive conclusions. On the other hand, human capital plays a significant and positive role in enhancing DRM, highlighting the importance of investing in education, healthcare, and skill development for improving tax compliance and revenue collection.

The results emphasize that strengthening human capital and improving governance and tax administration systems are critical for boosting DRM in Sub-Saharan African countries. Moreover, addressing issues related to

tax evasion, capital flight, and illicit financial flows remains essential for ensuring that countries can effectively mobilize domestic resources for sustainable development. Although the findings suggest some complexities in the relationship between tax havens and DRM, they underscore the need for a comprehensive approach to revenue mobilization, combining economic growth, institutional reforms, and improved public sector capacity. In conclusion, for Sub-Saharan Africa to achieve the financing required for sustainable development, it is crucial that policymakers prioritize human capital development, strengthen tax systems, and address the challenges posed by illicit financial flows and tax evasion. These efforts, supported by robust governance and international cooperation, will be key to enhancing DRM and fostering long-term economic growth and development in the region.

Recommendations

Address Illicit Financial Flows: Tackling tax evasion and capital flight through better transparency and international cooperation is essential for increasing DRM.

Invest in Human Capital: Governments should prioritize improving education, healthcare, and workforce skills to enhance tax compliance and revenue generation.

Strengthen Tax Administration: Efforts should be made to modernize tax systems, improve governance, and reduce corruption to boost DRM.

Promote Inclusive Economic Growth: Policymakers should focus on policies that encourage inclusive growth and formalize the economy to expand the tax base.

These recommendations, when implemented, will support Sub-Saharan Africa in improving DRM and achieving sustainable development goals.

Areas for Further Study

Exploring the Role of Governance and Institutional Quality in DRM: Given the importance of effective tax administration highlighted by the study, future research could examine how governance and institutional quality impact DRM in Sub-Saharan Africa. Investigating factors such as accountability, political stability, corruption levels, and the effectiveness of tax enforcement could provide deeper insights into how these elements influence revenue mobilization.

A More Detailed Analysis of Tax Haven Exposure and Its Impact on DRM: While this study found a positive but insignificant relationship between tax haven exposure and DRM, further research could refine the measurement of tax haven exposure and examine the mechanisms through which it affects DRM. A more granular approach could include analyzing specific industries or types of illicit financial flows to uncover hidden relationship between tax havens and revenue collection.

Impact of Domestic and International Trade Policies on DRM: Future studies could investigate how trade policies, both domestic and international, interact with DRM. Analyzing trade agreements, tariffs, and foreign direct investment could reveal how these policies influence revenue generation, especially in countries dependent on external trade relationships. This could also include the role of multilateral institutions in shaping DRM in Sub-Saharan Africa.

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EFFECT OF INTELLECTUAL CAPITAL ON FINANCIAL PERFORMANCE OF LISTED INSURANCE FIRMS IN NIGERIA

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ABSTRACT

This study examined the effect of intellectual capital in determination of financial performance of listed insurance firms in Nigeria. Data were collected from nineteen insurance firms for a period of nine (9) years (2015-2023) out of twenty-three insurance that were listed on the Nigerian Exchange Group (NGX) for the period. Return on Assets (ROA) was used as proxy for financial performance while capital employed efficiency; structural capital efficiency and human capital efficiency were considered as proxy for intellectual capital. Multiple regressions were used in testing the hypotheses formulated. The findings of this study indicate that human capital (Coefficient of 0.1747 with P-value of 0.011) and structural capital efficiency Coefficient of 0.0157 with P-value of 0.000) influenced financial performance among listed insurance firms in Nigeria. This suggests that investments in human resources and organizational structures can lead to improved financial outcomes. However, a statistically insignificant relationship between capital employed efficiency Coefficient of 0.0226 with P-value of 0.753) and financial performance highlights the complexity of how different components of intellectual capital contribute to overall firm performance. These insights underscore the importance of focusing on human and structural capital to enhance financial results in the insurance sector.

Hence, the study recommends that insurance firms should continue to invest in employee development, training, and retention strategies to foster a skilled and motivated workforce; insurance firms in Nigeria should prioritize investments in organizational processes, systems, and technology to enhance operational effectiveness and profitability. More so, investing in human capital can lead to better delivery service and increased customer satisfaction, ultimately improving financial performance.

Keywords:

Human capital efficiency,
Structural capital efficiency,
Capital employed efficiency,
Financial performance, Listed
insurance firms in Nigeria.

1.0 INTRODUCTION

In the era of a knowledge-based economy, organizations rely on two distinct sources for profit generation and value creation: tangible (material) resources and intangible (intellectual) resources. Financial performance is a fundamental indicator of a company's success, reflecting its ability to generate profit and create value for shareholders. Firms seeking to enhance their performance must recognize Intellectual Capital (IC) as a strategic intangible asset. Currently, all information can be accessed quickly and easily, thus encouraging high competition among business players. Companies are now starting to focus on effective and efficient IC management to increase competitiveness among business players. Many companies believe that increasing IC

will increase the value and competitive advantage of the company. According to Nazir et al. (2020), investors do not only consider the company's financial statements, but also the management of intangible assets in the form of non-financial. This triggers the company to focus on developing IC to attract more investors to increase the value of the company.

It is widely argued that the success of any business hinges significantly on the quality of its workforce. The increasing trend of firms voluntarily disclosing information about their intellectual capital signifies a growing recognition that an essential asset has been overlooked in financial statements. Even organizations with substantial physical resources and cutting-edge technology may face severe financial challenges if they lack capable personnel to manage their operations effectively (Oko, 2018). Human resource accounting acknowledges that incorporating such disclosures into financial reporting enhances the meaningfulness and utility of published financial statements for users of accounting information. Thus, there may be a need to assess the types of human resources information Nigerian firms are disclosing, the patterns of disclosure, and the factors influencing intellectual capital disclosure in Nigeria. Such analysis would provide insights into current practices regarding intellectual capital accounting in Nigerian firms and offer guidance for advancing this critical area of accounting (Ezekwesili et al., 2022).

The insurance industry plays a crucial role in the economic development of Nigeria by providing risk management solutions to individuals and businesses. As the sector evolves, understanding the relationship between intellectual capital and financial performance becomes essential for stakeholders, policymakers, and investors. Intellectual capital encompasses the intangible assets that contribute to a company's value and competitiveness. In the insurance sector, intellectual capital includes human capital (skills, knowledge, and expertise of employees), structural capital (organizational processes, systems, and databases), and relational capital (customer relationships, brand reputation, and strategic partnerships). Effective management of intellectual capital can lead to improved operational efficiency, innovation, and sustainable competitive advantages which lead to financial performance.

The impact of intellectual capital on a company's financial performance metrics has been the subject of numerous studies in both international developed and developing nations. Such studies at developing nations; includes in Nigeria (Abdulazeez & Egegwu, 2024; Earnest et al., 2024; Salman & Oyebanji, 2024; Sylvanus et al., 2024; Yusuf et al., 2024; Umar & Dandago, 2023; Chukwu et al., 2019; and Ofurum et al., 2018). In Indonesia (Suhadi, 2024; Rizkytawati & Falikhatun, 2024 and Al-Azizah & Wibowo, 2023), Olarewaju and Msomi (2021) in South-African, Castro et al. (2021) in Colombia, Ayinaddis et al. (2024) in Ethiopia, Zehri et al. (2012) in Tunisia and Kulathunga and Madhushani (2021) and Kumara (2024) in Sir-Lanka. At developed nations the study on impact of intellectual capital on financial performance includes Barak and Sharma (2024), Liu et al. (2021), Bansal and Singh (2020) and Xu and Li (2019) in China and Jaunanda et al. (2024) in Japan.

Finding from those studies have identified intellectual capital components as a crucial driver of corporate value enhancement. Additionally, some scholars argue that intellectual capital serves as a platform for firms to gain a competitive advantage over their peers. This study is particularly important given the evident gap in locally conducted research that addresses the unique needs of listed insurance firms in Nigeria. In an era where knowledge is recognized as essential for corporate value creation, this research becomes even more justified as it seeks to fill this critical void. Given the high level of technological and innovative competitiveness in today's economy and the amount of money businesses invest in their human resources to generate the best ideas that will set them apart and make them more successful than their competitors, the impact of IC on business performance

cannot be overstated. In essence, the level of creativity and innovativeness of firms have proven to have substantial impact on the level of firm performance.

More so, despite the numerous studies conducted, particularly in Nigeria, there remains a significant gap in exploring the interactions among the relevant variables concerning IC and FP. Furthermore, a review of existing literature reveals that many studies have primarily focused on sectors such as agriculture, consumer goods, industrial goods, and oil and gas, often neglecting the insurance sector. Given the critical role insurance firms play in the economic development process, addressing this oversight is essential. This study aims to fill the gap by examining the relationship between intellectual capital and performance specifically within the insurance sector, thereby contributing valuable insights to the discourse on economic development.

Structurally, the second section of this paper deals with theoretical foundations and hypotheses development; the third section covers the methodology; section four presents the data analysis, while section five concludes and provides policy recommendations based on the findings of the study.

2.0 THEORETICAL FOUNDATIONS AND HYPOTHESES DEVELOPMENT

In today's rapidly changing world, especially in developing countries facing numerous challenges, there is a pressing need for effective solutions to optimize the use of natural resources and enhance profitability to achieve organizational goals. In the current global economy, intellectual capital has emerged as a critical driver of competitiveness and sustainability (Chude et al., 2020). The intricate interplay of intangible assets, knowledge, and skills within an organization defines its intellectual capital, significantly impacting its strategic capabilities and overall performance key objectives for any firm. Establishing a strong link between intellectual capital and financial performance is essential for informed decision-making and strategic planning as organizations adapt to an ever-evolving global landscape.

Numerous studies at both international and local levels have confirmed the impact of intellectual capital on financial performance (Earnest et al., 2024; Suhadi, 2024; Sylvanus, et al., 2024; Yusuf et al., 2024; Umar & Dandago 2023; Solanke & Mohammed, 2021). These researchers have identified two contrasting positions regarding the relationship between intellectual capital and financial performance. These two perspectives highlight the complexity of the relationship between intellectual capital and financial performance. From the angle of the Resource-Based View (RBV) theory who supported a positive relationship between intellectual capital and financial performance. Firms that effectively leverage their intellectual assets can create more value, achieve higher profitability, and sustain a competitive edge in the market (Barney, 1991). For instance, studies have shown that organizations with strong intellectual capital frameworks experience better financial results, as these assets drive innovation and efficiency (Bontis, 1998).

Building on this proponent of the view that intellectual capital positively influences financial performance which argues that intangible assets such as knowledge, innovation, and organizational learning enhance a firm's competitive advantage and lead to improved performance outcomes. Yusuf et al. (2024) examined the effect of intellectual capital on the financial performance of listed consumer and industrial goods firms in Nigeria from 2013 to 2022. The population of the study consisted of thirty-two (32) listed consumer and industrial goods firms on the Nigeria Exchange Group, from which a sample twenty-six (26) firms was chosen using the purposive sampling technique. The study used secondary data that was taken from the companies' financial statements, and it employed a longitudinal panel research design. The results showed that intellectual capital (capital employed and structural capital) has a positive and significant effect on financial performance.

This outcome is consistent with the findings of Abdulazeez and Egegwu (2024), Aidah and Puji (2024), Suhadi

(2024), Sylvanus, et al. (2024), Umar and Dandago (2023), Akintoye et al. (2022) and Onyekwelu et al. (2017) who separately came to the conclusion that some of components of intellectual capital influence financial performance. In the context of the resource-based theory of the firm, only those physical, human, and organizational resources that empower firms to develop and execute strategies enhancing their efficiency and effectiveness are considered crucial (Wernerfelt, 1984). Similarly, Adigizey et al. (2024) explored the effect of intellectual capital on financial performance of listed conglomerate firms in Nigeria, revealing that certain component of intellectual capital significantly influence financial performance measures.

On the other hand, some scholars argue that the relationship between IC and FP may not be as straightforward. Critics contend that while IC is important, it does not always lead to immediate financial gains and may even divert resources from core operations (Salman & Oyeibanji, 2024). From the agency theory perspective, developed by Jensen and Meckling in 1976, suggests that investments in intangible assets can create conflicts between management and shareholders, as management may prioritize long-term intellectual capital initiatives over short-term financial performance. Additionally, the lack of standardized measurement for intellectual capital makes it challenging to directly correlate it with financial outcomes (Edvinsson & Malone, 1997). Some studies (Salman & Oyeibanji, 2024; and Chude et al., 2022) have found weak or no significant relationships between intellectual capital and financial performance, indicating that intangible assets, where management focuses on long-term investments in intellectual capital rather than immediate financial returns does not improve financial performance outcome.

More so, Gunawan et al. (2023) in Indonesia and Ayinaddis et al. (2023) in Ethiopia concluded that SCE has an insignificance impact on financial performance. In the same vein, Mehmet and Ubaidillah (2023) examined the impact of intellectual capital on financial performance in terms of profitability and productivity in Islamic Banks (IBs). The result showed that structural capital efficiency does not impact on financial performance. This is consistent with findings of Kulathunga and Madhushani (2021) and Olarewaju and Msomi (2021).

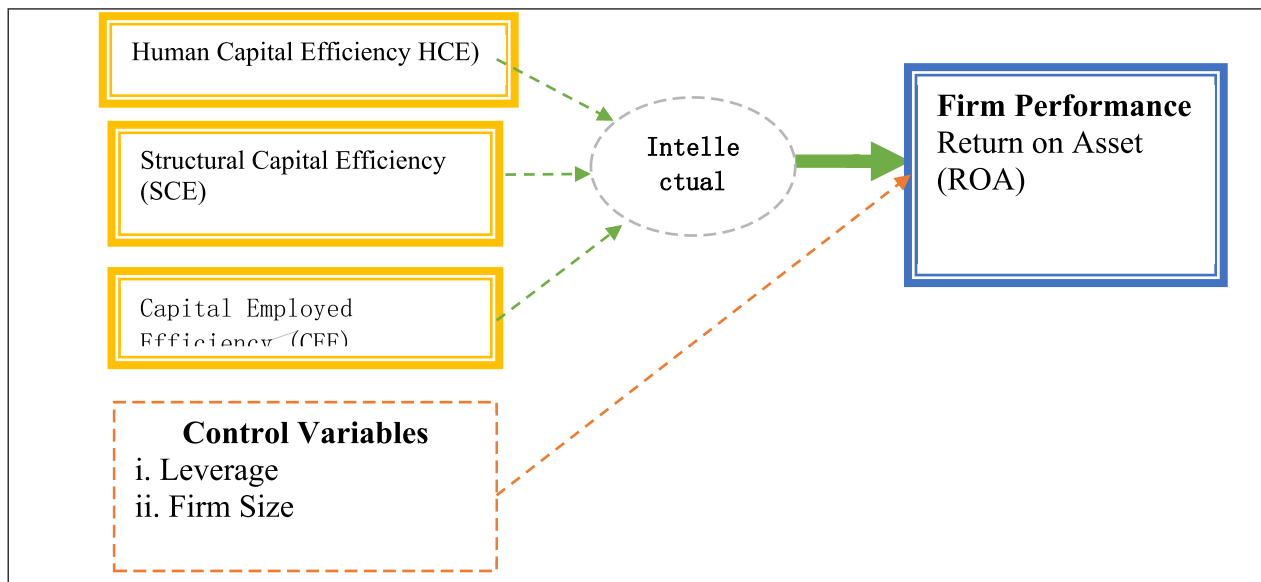
The contrasting views suggest that strategic decision-making regarding intellectual capital should be informed by a thorough understanding of the organization's context. The positive effect perspective emphasizes that intellectual capital is a vital resource that contributes to competitive advantages, innovation, and ultimately, better financial performance. This aligns with the Resource-Based View (RBV) theory, which posits that unique resources, including intellectual capital, are essential for achieving superior performance. Conversely, the neutral or negative effect perspective highlights potential pitfalls associated with investing in intangible assets. It suggests that such investments may not always translate into immediate financial benefits and can lead to conflicts between management and shareholders, as described by agency theory. This perspective underscores the complexity of measuring the financial returns of intellectual capital. Hence, the following hypotheses are proposed concerning impact of intellectual capital components on financial performance of listed insurance firms in Nigeria.

HO₁: Human capital efficiency has insignificant effect on financial performance of listed insurance firms in Nigeria.

HO₂: Structural capital efficiency has insignificant effect on financial performance of listed insurance firms in Nigeria.

HO₃: Capital employed efficiency has insignificant effect on financial performance of listed insurance firms in Nigeria.

Additionally, the conceptual framework of this study illustrates the influence of intellectual capital on financial performance through a diagram, as depicted in Figure 1.

**Figure 1: Conceptual Framework**

Source: Developed by Researchers (2025)

3.0 METHODOLOGY

The study adopted correlational research design. This research design allows for the use of quantitative data, enabling the study to employ statistical methods, such as multiple regression analysis, to examine the effect of IC components (Human Capital Efficiency, Structural Capital Efficiency, and Capital Employed Efficiency) and financial performance (measured by Return on Assets). This approach facilitates a more robust analysis of how different aspects of intellectual capital impact financial performance. Hence, a correlational design is well-suited for examining how these variables relate to one another without manipulating them as used by Abdulazeez and Egegwu (2024) and Adebayo et al. (2024). The population of this study is made up of twenty-three (23) listed insurance firms on the floor of the NGX Group as at end of 2023 financial year for the period of nine-years (2015-2023). The sample size of the study was nineteen (19) insurance firm determined through the purposive sampling technique after applying a three-point filter which include: (i) All the sampled firms must be listed on or before 1st January 2015, (ii) the firm must have complete financial statement for the study period, and (iii) the firm must not suffer from technical suspension within the study period.

Table 1 Population and the Sample of the Study

S/No.	Firms	Listed	Incorporated	Sample
1	<u>African Alliance Insurance Plc</u>	2009	1960	1
2	<u>Aiico Insurance</u>	1990	1970	2
3	<u>Axamansard Insurance Plc</u>	2009	1989	3
4	<u>Consolidated Hallmark Holdings Plc</u>	2008	1991	4
5	<u>Cornerstone Insurance Plc</u>	1997	1991	5
6	<u>Coronation Insurance Plc</u>	1990	1958	6
7	<u>Goldlink Insurance Plc</u>	2008	1993	Nil
8	<u>Guinea Insurance Plc</u>	1990	1958	7
9	<u>International Energy Insurance Plc</u>	2007	1969	8
10	<u>Lasaco Assurance Plc.</u>	1991	1979	9
11	<u>Lasaco Assurance Plc.</u>	1987	1979	10

12	<u>Linkage Assurance Plc</u>	2003	1991	11
13	<u>Mutual Benefits Assurance Plc.</u>	2002	1995	12
14	<u>Nem Insurance Plc</u>	1990	970	13
15	<u>Niger Insurance Plc</u>	1975	1962	Nil
16	<u>Prestige Assurance Plc</u>	1990	1970	14
17	<u>Regency Assurance Plc</u>	2008	1993	15
18	<u>Sovereign Trust Insurance Plc</u>	2006	1980	16
19	<u>Staco Insurance Plc</u>	2007	1991	Nil
20	<u>Standard Alliance Insurance Plc.</u>	2003	1981	Nil
21	<u>Sunu Assurances Nigeria Plc.</u>	2007	1984	17
22	<u>Universal Insurance Plc</u>	2009	1961	18
23	<u>Veritas Kapital Assurance Plc</u>	2009	1973	19

Source: Generated from NGX Website on 31st December, 2023.

The study relied on secondary data extracted from the annual report and account of the sample firms for the period under review (2015-2023). The study employed descriptive statistics, correlation analysis and the multiple regression method of data analysis.

Model Specification

The study adopted with modification the model of Abdulazeez and Egegwu (2024), Adebayo et al. (2024), Jaunanda et al. (2024), Kumara (2024), Yusuf et al. (2024) and Umar and Dandago (2023), the modified model for this study is presented below:

$ROA = F(HCE, SCE, CEE, LEV \text{ and } FSIZE)$

$$ROA_{it} = \beta_0 + \beta_1 HCE_{it} + \beta_2 SCE_{it} + \beta_3 CEE_{it} + \beta_4 LEV_{it} + \beta_5 FSIZE_{it} + e_{it}$$

Where: ROA_{it} is return on asset of 'i' in year 't', HCE_{it} is human capital efficiency of 'i' in year 't', SCE_{it} is structural capital efficiency of 'i' in year 't', CEE_{it} capital employed efficiency of 'i' in year 't', LEV_{it} Financial leverage of 'i' in year 't', $FSIZE_{it}$ Firm size of 'i' in year 't',

e = error term

$\beta_1 - \beta_5$ = coefficient of explanatory (independent and control) variables.

The information on variables measurements are presented in Table 2 below:

Table 2 Variables of the Study and their Measurements

S/No.	Variables	Measurements	Sources
Dependent Variables			
i.	Financial Performance	Return on Asset (ROA) is employed as a measure for firm performance, that is, the net income divided by total asset of the firm.	Abdulazeez and Egegwu (2024), Adebayo et al. (2024), Aidah and Puji (2024), Suhadi (2024), Sylvanus et al. (2024), Yusuf et al. (2024) and Umar and Dandago (2023).
Independent Variables			
i.	Human Capital Efficiency (HCE)	Human Capital Efficiency (HCE) is measured by value added divided by capital employ.	Abdulazeez and Egegwu (2024), Sylvanus, et al. (2024), Yusuf et al. (2024), Umar and Dandago (2023) and Shiwi et al. (2022)
ii.	Structural Capital Efficiency (SCE)	Structural Capital Efficiency (SCE) is measured by structural capital divided by value added.	Adigizy et al. (2024), Adebayo et al. (2024), Aidah and Puji (2024), Suhadi (2024) and Ani and Alfin (2020).

iii. Capital Employed Efficiency (CEE)	Capital Employed Efficiency (CEE) is measured by value added divided by capital employed.	Adigizey et al. (2024), Yusuf et al. (2024), Akintoye et al. (2022), Shiwi et al. (2022) and Onyekwelu et al. (2017).
Control Variables		
i. Leverage	Total debt to total assets.	Jaunanda, et al. (2024), Sylvanus, et al. (2024), Salman (2022) and Onyekwelu et al. (2021).
ii. Firm Size	Natural logarithm of total assets.	Abdulazeez and Egegwu (2024), Jaunanda, et al. (2024), Asriyani (2023) and Salman (2022).
Source: Researchers Compilation from Previous Literature, (2025).		

4.0 RESULTS AND DISCUSSION

The descriptive statistics shows the mean, minimum values and standard deviation of each explanatory variables and the dependent variable of the study are presented in Table 3 below.

Table 3: Descriptive Statistics Result

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA	171	0.5229	0.6882	0.0132	0.1649
HCE	171	2.3094	1.2942	4.6003	7.4508
SCE	171	3.4490	3.1733	6.4175	9.4443
CEE	171	5.6884	6.1774	3.1343	6.2943
LEV	171	0.5284	0.7134	0.0963	0.4761
FSIZE	171	4.4935	3.5554	5.2459	9.9308

Source: STATA Output, 2025

Table 3 shows that Return on Assets (ROA) has a mean value of 0.5229 with a standard deviation of 0.6882, indicating variability in asset utilization efficiency among the firms sampled. The minimum ROA recorded is 0.0132, while the maximum is 0.1649, suggesting that some firms are significantly more efficient in asset utilization than others. Human capita efficiency has a mean value of 2.3094 and a standard deviation of 1.2942, there's substantial variation in how effectively different firms leverage their human capital. The lowest HCE value is 4.6003, and the highest is 7.4508, indicating a wide disparity in the contribution of human capital across firms. More so, Table 3 shows SCE reflects the efficiency of a firm's structural capital such as systems, databases, and processes in supporting value creation. The mean SCE is 3.4490 with a standard deviation of 3.1733, suggesting moderate variability among firms. The values range from a minimum of 6.4175 to a maximum of 9.4442, indicating some firms have more optimized structural capital than others.

However, CEE assesses how efficiently a firm utilizes its capital employed to generate revenue. The mean CEE is 5.6884, with a relatively low standard deviation of 6.1774, implying that most firms have similar efficiency levels in capital employment. The minimum CEE is 3.1343 and the maximum is 6.2943, showing a narrow range of variation. The mean values of LEV and FSIZE were 0.5284 and 4.4935, with a standard deviation of 0.7134 and 3.5554 while leverage values span from 0.0963 to 0.4761 and FSIZE from 5.2459 to 9.9308 respectively.

Correlation Analysis

The correlation result shows the relationship between each explanatory variable and the dependent variables.

Table 4: Correlation Matrix Result

Variable	ROA	HCE	SCE	CEE	LEV	FSIZE
ROA	1.0000					
HCE	0.4154	1.0000				
SCE	0.5434	0.5232	1.0000			
CEE	0.4278	0.4841	-0.0980	1.0000		
LEV	0.5112	0.4926	-0.1966	0.5360	1.0000	
FSIZE	-0.0366	-0.1048	0.2917	-0.1919	0.0246	1.0000

Source: STATA Output, 2025

The correlation matrix in Table 4 illustrates the relationships between financial performance metrics, specifically the correlation coefficients between explanatory variables and financial performance and among explanatory variables. From Table 4, there is a moderate positive correlation between (HCE, SCE, CEE and LEV) and Return on Asset (ROA). This implies that a unit increase in those variables will result to a unit increase in return on asset of listed insurance firms in Nigeria. Conversely, there is a negative correlation between ROA and FSIZE (-0.0366), suggesting a slight inverse relationship between ROA and firm size. However, this correlation is close to zero, indicating a very weak relationship between the two variables.

Moving on to the correlations between the other variables, we notice some interesting patterns. For example, there is a positive correlation between HCE and SCE (0.5232), implying that as Human Capital Efficiency increases; Structural Capital Efficiency tends to increase, and vice versa. Similarly, there is a negative correlation between HCE and FSIZE (-0.1048), indicating that larger firms tend to have lower HCE, though again, this correlation is relatively weak.

Regression Analysis

Table 5 presents the results of Feasible Generalized Least Squares Regression.

Table 5: Regression Result: Effect of Intellectual Capital on Financial Performance

Path	Coefficient	P(Z-value)	P-value
HCE—> ROA	0.1747	2.55	0.011
SCE —> ROA	0.0157	3.14	0.000
CEE —> ROA	0.0226	0.32	0.753
LEV —> ROA	-0.2376	2.88	0.004
FSIZE —> ROA	0.1078	1.02	0.255
CONS	0.0133	0.76	0.452
R-Square:			
Within	0.2887		
Between	0.2505		
Overall	0.1737		
P-value	0.0003		
Obs.	171		
Hausman	0.1035		
LM for RE	0.0000		

Source: STATA 14.2 Output, (2025)

Table 5 shows a significant proportion of the independent variables (intellectual capital) on financial performance, with an overall R^2 of 17%, and a positive and significant value for the F-statistics of 0.0003. From the Table, the results showed that human capital efficiency and structural capital efficiency have significant impact on financial performance while capital employed efficiency has insignificant impact on financial performance of listed insurance firms in Nigeria.

Testing of Hypotheses

The above results were used to test the three null hypotheses developed in the literature review as follows:

H0₁: Human capital efficiency has insignificant impact on financial performance of listed insurance firms in Nigeria.

There is a positive association between human capital efficiency and financial performance in listed insurance firms in Nigeria. Since coefficients is positive and p-value is less than 5% level of significant, which means that higher efficiency in managing human capital within listed insurance firms in Nigeria is linked to improved financial performance. In other words, when these firms effectively utilize and develop their workforce through training, skills enhancement, and employee engagement they are likely to experience better financial outcomes, such as increased profitability, revenue growth, or overall financial stability. This positive association suggests that investing in human capital can be a key factor for success in the insurance sector. This leads to reject the first hypothesis and supported the results of Abdulazeez and Egegwu (2024) and Sylvanus et al. (2024), However, this result is not consistent with Adebayo et al. (2024), Rizkytawati and Falikhatun (2024), Yusuf et al. (2024) and Salman (2022).

H0₂: Structural capital efficiency has insignificant effect on financial performance of listed insurance firms in Nigeria.

There is a positive and significant relationship between structural capital efficiency and financial performance of listed insurance firms in Nigeria, since coefficients is positive, and the p-value is below 5% level of significant. This implies that as the efficiency and effectiveness of these structural components increase, the financial performance of these firms such as profitability, revenue, or market share also tends to improve. This suggests that enhancing structural capital can lead to better financial results for insurance firms in Nigeria. Hence, hypothesis two is rejected. This result supports Abdulazeez and Egegwu (2024), Adebayo et al. (2024), Suhadi (2024), Yusuf et al. (2024), Akintoye et al. (2022) and Onyekwelu et al. (2021). However, this result is not consistent with Rizkytawati and Falikhatun (2024) and Salman(2022).

H0₃: Capital employed efficiency has insignificant impact on financial performance of listed insurance firms in Nigeria.

From Table 5, capital employed efficiency positive and insignificant impact on financial performance of listed insurance firms in Nigeria, based on the coefficient and p-values. Hence, fail to reject the third hypothesis. Although higher efficiency in utilizing capital (such as assets and investments) is associated with better financial performance, the impact is not strong enough to be deemed meaningful in a statistical sense. Consequently, it suggests that factors other than capital employed efficiency may play a more critical role in determining financial performance in this sector, or that the relationship may vary under different circumstances. This supported the results of Abdulazeez and Egegwu (2024), Adebayo et al. (2024), Salman and Oyebanji (2024) and Salman (2022). However, this result is not consistent with Suhadi (2024), Sylvanus et al. (2024), Yusuf et al. (2024), Izuchukwu (2023) and Onyekwelu et al. (2021).

5.0 CONCLUSION AND RECOMMENDATION

The study examined the extent to which intellectual capital determines financial performance (proxied by ROA) of the listed insurance firms in Nigeria. The paper considering IC in the dimensions of human, structural, and capital employed efficiency. It obtained panel data from the annual report and accounts of nineteen (19) sampled insurance firms for a period of nine (9) years (2015-2023) and analyzed via the panel regressions in order to test the three null hypotheses formulated in the study. This study therefore concludes that:

- i. Human capital efficiency has positive impact on the financial performance of listed insurance firms in Nigeria. Hence, this means that HCE significantly contributes to the level of financial performance in the Nigerian insurance firms which enhancing productivity, innovation, and overall effectiveness. Investing in human capital is essential for organizations aiming to enhance their financial performance and maintain a competitive edge in the market.
- ii. Structural capital efficiency has positive impact on the financial performance of listed insurance firms in Nigeria. Investing in SCE can enhance decision-making processes, leading to more effective operations and ultimately generating higher profits for the firms.
- iii. Capital employed efficiency does not determine the overall performance of sampled firms. This indicates that the way firms utilize their capital may not be the primary driver of their success in the short-run, while optimizing capital utilization is important for long-term sustainability, it may not yield immediate results in profitability or performance metrics within a short time frame. In summary, the study concludes that efficient and effective investment in intellectual capital gives firms an edge to compete favourably and achieve profit maximization.

Based on the summary of major research findings stated above and the conclusions reached, the study recommended that management of listed insurance firms should strategically invest to optimize capital employed as this could improve the financial performance. There is a need to prioritize strategies that enhance human and structural capital, such as training programs, knowledge management systems, and organizational improvements, as these factors are more closely linked to financial performance.

More so, management should prioritize investments in enhancing structural capital efficiency by developing robust organizational processes, systems, and technological infrastructure. This includes fostering a culture of continuous improvement, implementing effective knowledge management practices, and ensuring that organizational frameworks support efficient operations. By doing so, management can leverage structural capital to drive better financial performance and competitive advantage within the insurance sector.

Furthermore, the lack of significant impact from capital employed efficiency and financial performance, call for management to reassess their capital allocation strategies to ensure that resources are directed towards initiatives that yield better financial outcomes. This may be tackled by investing in technology, innovation, and customer service enhancements rather than solely focusing on optimizing capital efficiency.

Practical and Policy Implications

Insurance firms should invest in training and development programs to enhance the skills and capabilities of their workforce, aligning with several Sustainable Development Goals (SDGs) for 2030. Specifically, this investment supports goal 4 (Quality Education), goal 8 (Decent Work and Economic Growth) as well as goal 9 (Industry, Innovation, and Infrastructure) by improving human capital efficiency, firms can increase productivity and, ultimately, financial performance. More so, management should prioritize the optimization of structural capital by implementing efficient organizational processes and systems. This may involve investing in technology and knowledge management practices that streamline operations and enhance service delivery. In the same vein, firms should critically assess their capital allocation strategies. Since capital employed efficiency did not significantly impact financial performance, resources might be better allocated toward enhancing human and structural capital rather than merely focusing on capital investments.

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DETERMINANTS AND PERFORMANCE OF NON-GOVERNMENTAL ORGANISATIONS (NGOs) IN BORNO STATE

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Abstract

Evidence from literature has shown that Non-Governmental Organisations (NGOs) play a critical role in advancing the Sustainable Development Goals (SDGs) of the United Nations by implementing projects, advocating for policy changes, monitoring progress, and fostering collaboration. As such, the objective of this research sought to appraise determinants of performance among Non-Governmental Organisations (NGOs) in Borno State. This is imperative for understanding the dynamics and interplay of key organisational elements, because of their significant influence on the performance of NGOs operating in Borno State. In order to achieve this objective, primary data was gathered from randomly sampled compliance officers of both national and international NGOs whose Operational country office is based in Borno state. A total of 126 duly completed and validated copies of questionnaires were analysed using simple linear regression analysis, to ascertain the extent to which organisational culture, and information technology predict performance of NGOs in Borno State. Beta value of Results, from analysis showed that organisational culture ($\beta = 0.156$, $p = 0.002$) and information technology ($\beta = 0.237$, $p = 0.000$) did significantly affect the performance of NGOs in Borno state. Based on findings it is concluded that organisational culture, and information technology are significant predictors of performance of NGOs in Borno State. It is recommended that NGOs should to be proactive with ensuring the right organisational culture is maintained in order to enhance their performance.

Keywords:

Organisational culture,
information technology,
Non-Governmental
Organisations

Introduction

According to Koshi (2022), Non-Governmental Organisations (NGOs) play a critical role in ensuring that Sustainable Development Goals (SDGs) are achieved. Hege, and Demailly (2018) have also mentioned that across the globe, NGO are key actors in translating SDGs from international commitments to specific action at the national level. This makes it imperative to ascertain the extent to which NGOs in Borno State have strived towards sustaining satisfactory performance level, in order to continue to benefit from funding as well as impact the communities where they operate. Over the years, the presence of NGOs in countries around the world has continually increased; due to the continued rise in cases of natural and manmade disasters coupled with the decline in financial and sustainable economic capacity from governments and increased competition for scarce donations among NGOs (Isana, 2023). The presence of NGOs in Nigeria can be traced to as far back as 1987,

when the objective was to fight child killer related diseases and then gradually, they began interventions in combating human trafficking, as well as counselling and rehabilitating victims of violence, conflict and other issues related to structural development in the society (Isana, 2023). Furthermore, NGOs educate women about their evolving duties and right, they provide both men and women with necessary skills and information, capacity building, financial empowerment, health, and food interventions to reduce the suffering of humanity largely. The activities of NGOs are closely monitored by their donor agencies with regards to the extent to which objectives are achieved. Furthermore, the monitoring performed by donor agencies also seeks to focus on the extent to which NGOs have executed the provisions of their concept notes (Girei, 2023). These dimensions of monitoring, have implication for their performance. Thus, Performance of NGOs is beyond traditional metrics such as project and financial sustainability, to encompasses the ability of NGOs to effectively address the needs of affected communities, as well as maintain accountability and transparency with respective donors. Evidence from literature has shown that NGO funding is a function of level of performance (Briggs, 2019), which directly relates to the ability to satisfy contents of the concept note. In addition to funding, organisational culture has also been shown to predict organisational performance of NGOs (Hein, & Lasch, 2023). This makes it imperative to evaluate performance of these organisation from a multidimension perspective, because of the dynamic nature of NGOs.

The prolonged insurgency in Borno State, makes it imperative to worry about the achievement of SDGs. This is because the prolonged insurgency brought with it an influx of international NGOs. The aim of the NGOs was to provide internally displaced persons with financial assistance, medical interventions, food aid and other vocational skills among others. The presence of NGOs in Borno, provided livelihood to the teeming population of youths in their immediate environments thereby improving the economy of the state. However, there is concern for the declining number of NGOs operating in Borno State (United Nations Office for Coordinating Humanitarian Activities Situational Report, 2024). The monthly humanitarian coordination bulletin reports that between the period January 2018 and May 2024 the number of active NGOs have dropped across all sectors of operation from 172 to 104.

Findings from this study will be of value to NGOs, stakeholders, and academics. The study will assist NGOs understand strategic practices to engage in to achieve donor requirements, enhance performance by adopting strategic determinants that will enable NGOs achieve their goals and help different and diverse NGOs to sustain themselves for long term through sustained funding. The study aims to provide insights that can inform policy, practice, and capacity-building efforts aimed at enhancing the effectiveness and sustainability of NGOs in Borno State. This includes identifying best practices, developing targeted interventions to address specific challenges of beneficiary communities, and fostering collaborations between NGOs, government agencies, donors, and local communities to maximize impact and promote resilience in the face of ongoing humanitarian crises and socio-economic challenges. Ultimately, the research contributes to the broader goal of improving the well-being and livelihoods of vulnerable populations in Borno State and similar conflict-affected regions.

The study seeks to contribute to exiting body of literature provide a comprehensive understanding of the dynamics that contribute to or hinder the success of NGOs. This study will not only enhance the strategic performance management of these organizations but also contribute to their long-term success and sustainability. Donors can benefit from a clearer understanding of the factors that impact the effectiveness of their investments, enabling more informed decision-making in the allocation of resources. Beneficiaries stand to gain a lot from improved NGO performance, which will ensure that aid and services are more efficiently delivered to the most affected population. Finally, government can use these insights to formulate policies that foster an environment conducive to the success of NGOs, promoting collaboration and effective resource utilization for the benefit of the community at large. Ultimately, the study aspires to be a valuable resource for all

stakeholders involved in or affected by the operations of NGOs in Borno State. Furthermore, the results of this study will make a significant contribution to the body of knowledge and be valuable to researchers and scholars by providing a basis for further research, while for students they will serve as a starting point for discussions on strategic performance management in NGOs and the application of these determinants factors for more success in this field.

Objectives

With regards to Non-Governmental Organisations in Borno State, this research seeks to;

- i. Determine extent to which organisational culture predicts performance
- ii. Ascertain effect of information technology on performance.

Literature review

According to Ibrahim and Daniel (2019), performance has been defined as the level of work an individual or organisation is able to achievement after exerting a certain level of effort. Though this study asserts that there is no single definition to the term 'performance' giving several other definitions to the term performance as; an act of performing a task either well or badly, and to consistently attaining desired goals in the most effective and efficient manner feasible. Similarly, Akinniyi, Popoola and Amadi (2020), posited that performance in an organisation can be based on the extent to which budget figures is achieved. They also added that performance is essentially an individual phenomenon and that cultural influences primarily affect an individual's motivation, ability, and performance-related characteristics. In the views of Ghodke et al. (2021), performance in terms of effectiveness and efficiency. Effectiveness as a measure of how well an organisation's goals were met, and efficiency as a measure of what resources were employed to meet these goals. The study therefore concluded that performance is the extent to which organisations achieve its goals regardless of individual performance, ability, and motivation.

Furthermore, Oyewo et al (2019) describe performance according to Grüning (2002) as getting results through set goals. According to this framework, performance is articulated across three distinctive levels. The first, denoted as Level (-1), characterizes under-performance, wherein the organization is engaged in a structured process aimed at reaching its predetermined goals. Moving to Level (0), recognized as the performance level or goal achievement stage, the organization successfully accomplishes its predetermined objectives. Finally, at Level (1), identified as the over-performance or excellence level, the organization surpasses its predefined goals, indicative of a remarkable degree of accomplishment. This multi-tiered understanding of performance provides a nuanced perspective on organizational effectiveness, encompassing phases of goal pursuit and attainment, ultimately contributing to a comprehensive evaluation of an entity's success and not just the financial aspect (Baba, Joel, Tahir & Gulani 2023). Given that performance has been defined differently by different studies, with no single definition that is generally acceptable, this means the definition of the term is contextual to the purpose for which it is used. Therefore, performance according to this study will be defined as the level at which an organisation fully achieved its pre-defined mission, objectives and goals through a pre-determined agreed process as contained in the contractual agreement with its stakeholders.

Organisational Culture and Performance of NGOs

Several studies have been carried out on the factors that determine performance in both public and private organisations as well as Non-Governmental Organisations. For example, Zuniga-Collazos, Castillo-Palacio, Montana-Narvaez, and Castillo-Arevalo (2019) conducted research on determinants factors influencing organisational performance of public companies in United States and South Korea. The objective of the study

was to identify the factors that influence organisational performance in the United States and in South Korea. The study used a structured questionnaire distributed via mail and WhatsApp to 214 mid-level executives from the companies. Only 117 of the 214 questionnaires that were distributed were returned. The study used both descriptive and inferential statistics to analyse the results, with coaching evolution theory serving as the underpinning theory. Furthermore, the study found out that Companies are now involved in rapidly changing, competitive, and globalized markets, necessitating further research into the processes and tools that build the capacity of senior executives to meet these difficulties. Coaching and capacity building is becoming more significant in the workplace, where it is necessary to improve skills and attitudes in order to achieve certain goals in the organisation. Companies are becoming more conscientious about the optimal technique for retaining and increasing employee productivity over time. This is accomplished by putting resources into procedures and related programs like training, capacity strengthening programmes and knowledge transfer. This aims at providing better results that will influence the financial and non-financial performance of the company. Given the lack of empirical evidence for managerial coaching (capacity building) results in task execution and achievement in organisations, this research examines the concept's impact on performance and effectiveness. Demonstrating how coaching (capacity building) approaches are important tools for all professionals in leadership roles and achieving organisational goals, not just human resource managers.

The effect of the risk management process on operational performance in Kenyan non-governmental Organisation (NGOs) was explored by Mutua and Ibembe (2020). In particular, the study explores whether risk management techniques including risk planning, risk identification, risk analysis, and risk control can forecast functional performance in these non-governmental Organisation. Helping professionals, academics, and those involved in development decide whether risk management procedures support efficient functional performance is the aim. 123 non-governmental Organisation responded to a multi-dimensional questionnaire survey, yielding 186 replies that demonstrated a strong correlation between risk management procedures and functional performance. According to the results, risk identification performs better than other risk processes at predicting NGO functional success. By establishing risk management as a key predictor of NGO functional effectiveness, this study contributes to the body of knowledge on the subject.

The study's dependent variable was NGO functional performance, while the study's independent variable was the risk management method. The risk management process variable scale was created after an extensive assessment of the literature already in existence. Then, using a five-point Likert scale with a range of 1 (strongly disagree) to 5 (strongly agree), risk management elements gleaned from a survey of the literature were rated. The study used Ramdhan and Borgnovi's (2015) items to gauge the functional tier of a non-profit organization; the scale was adjusted to fit the study's needs and included items for strategic decision-making, human resources (teams and individuals), Organisational culture, leadership, channels for communication, information systems, monitoring systems, rules and procedures, and more were also presented in a five-point Likert scale. The study concluded that risk management has a significant impact on the performance of non-governmental organisations.

Polychroniou and Trivellas (2018) observed in their study that there is a substantial correlation between internal structure and performance. Internal structure and human relations skills are represented by cultural strength, while internal Organisational procedures are represented by business results in terms of performance (profitability, growth, and reputational assets). According to the study, an organization's market position, development, and innovative potential are negatively impacted by culture instability and a lack of Organisational procedures. The study employed the competing values model (CVM), which defined culture

strength as the degree to which an organization's internal structure and culture values are expressed. The total absolute deviations from each Organisational member's shared cultural value, across the four categories enforced by CVM, are added to determine the level of cultural instability (adhocracy, clan, hierarchy, and market). The primary cultures that have direct and indirect effects on the introvert and extrovert components of business performance, as well as Organisational processes that affect performance, were identified by empirical evidence gathered from literatures, which further clarified the relationship between culture and performance.

Similarly, Shologu (2019) stated that Non-Governmental Organisations (NGOs) are underperforming in part due to their culture; the constructs of NGOs' culture usually have a negative impact on employees' level of commitment and performance, leading employees to leave the organisation. This discourages and demoralizes employees' motivation to perform as expected, negatively impacting NGOs' productivity, goals, and competitiveness. The study investigated employee perceptions of organisational culture among NGOs in Cape Town to generate valuable information in understanding the role of organisational culture in achieving NGOs' objectives. The study used a mixed methods approach, collecting both qualitative and quantitative data at the same time, which allows for a more comprehensive assessment of different aspects of complex outcomes than one method alone. The study assesses organisational performance using the concept developed by Frijns, Dodd, and Cimerova (2016) on financial metrics such as Return on Assets (ROA) and Return on Equity (ROE) (ROE). The study looks at cultural diversity through the lens of board foreignness, gender diversity, and director independence. The study used secondary data collected from 23 firms listed on the Nigerian Stock Exchange (NSE) between 2006 and 2018, which was then analysed using both descriptive and inferential statistics such as the generalized autoregressive conditional heteroscedasticity (GARCH) model. According to the study, some organisational culture criteria, such as openness and creativity, are only viewed positively by NGOs' owners and managers. According to the findings of this study, owners and managers of NGOs believe that the implemented organisational culture is very effective and has a positive impact on and boosts employee performance. Employees, on the other hand, had a different perception; they feel excluded from the development of the organisational culture, which has a negative impact on their commitment and performance.

INFORMATION TECHNOLOGY AND PERFORMANCE

Chen et al. (2019) carried out an empirical research on Information technology (IT) as a component of organisational culture in some Australian not for profit organisations. The study employed the survey method where questionnaire were administered to the CEOs, or equivalent, of 786 Not For Profit organisations in Australia the study noted that only 322 questionnaires returned which means the study had a response rate of 41%. The study analysed all data collected using mean standard deviation and regression analysis. The study concluded that Information technology (IT) is widely accepted as a critical part of an organisations' survival and performance in an increasingly changing and limiting environment. However the study was limited by the number of unretrived questioniare.

Information technology has become an essential component of modern enterprises since it facilitates numerous corporate processes and improves decision-making. However, the impact of information technology on organizational performance varies depending on the environment and organizational features. As a result, it is critical to investigate the relationship between information technology adoption and organizational performance in certain situations and industry sectors. Ali, Ismail, and Shukur (2018) evaluated the impact of information technology deployment on organizational performance in Malaysian manufacturing organizations. The study adopted a quantitative technique to evaluate the relationship between information technology adoption and organizational performance in Malaysian manufacturing organizations. Data was collected from

120 respondents using a survey questionnaire, and the data was analyzed using descriptive and inferential statistics. The findings of the study demonstrated that information technology adoption had a favorable and significant impact on organizational performance in manufacturing enterprises in Malaysia. According to the findings, information technology adoption improved operational efficiency, decreased expenses, and increased customer satisfaction, all of which are important elements in organizational performance. As a result, the study concludes that the use of information technology relates to improved organizational performance in manufacturing organizations.

According to the findings, the use of information technology improves organizational performance and competitiveness in the manufacturing industry. The study also recommended that organizations invest in information technology to improve operational efficiency, reduce costs, and increase customer satisfaction. Finally, it adds to the existing literature on the relationship between information technology and organizational performance by providing insights into the specific context of Malaysia's manufacturing industry.

The study concluded that information technology adoption had a favorable and significant impact on organizational performance in Malaysian manufacturing enterprises. The findings imply that firms that engage in information technology can benefit from increased operational efficiency, lower costs, and increased customer satisfaction, all of which can contribute to overall organizational performance. These insights might help organizational executives make decisions about information technology investments, particularly in the industrial sector. Similarly, Adekunle (2019) explored the use of cloud computing technologies in Nigerian non-governmental organizations (NGOs). Cloud computing technology has attracted substantial attention from enterprises all over the world in recent years because to its cost-effectiveness, scalability, and flexibility. However, adoption of cloud computing technologies among non-governmental organizations (NGOs) remains low due to several constraints such as a lack of technical skills, limited resources, and data security concerns. As a result, it is critical to investigate the factors that influence the adoption of cloud computing technologies in NGOs, particularly in developing countries such as Nigeria. The study deployed a quantitative research approach by issuing questionnaire to 132 respondents, and the data were analyzed using descriptive statistics, correlation analysis, and regression analysis to test the research hypotheses.

According to the findings of the study, perceived usefulness, perceived ease of use, compatibility, better performance, and trialability all had a major impact on the adoption of cloud computing technology in Nigerian NGOs. According to the findings, Nigerian NGOs saw cloud computing technology as valuable, simple to use, and suitable with their job, and they were eager to explore it. The survey also discovered that perceived security concerns had no effect on the adoption of cloud computing technology in Nigerian non-governmental organizations.

Methodology

Study Area

The focus of this study is to assess the determinants of performance of Non-Governmental Organizations (NGOs) in Borno State. Most NGOs operate from Maiduguri, the capital of Borno, situated at latitude 11.833333 and longitude 13.150000. NGOs, whether local, national, or international, are characterized as non-profit entities engaged in various activities, including providing aid, advocating for the poor, environmental protection, delivering social services, and fostering community development.

Population of the Study

As at March 2024, records with the Borno State Emergency Management Agency (BOSEMA) shows there are 172 Non-Governmental Organisations operating in Borno State. From this record there are 83 International (foreign owned) NGOs and 89 National (locally owned) NGOs. All these NGOs have their functional head

office in Maiduguri. For this study, the population consist of the compliance unit (which consist of persons designated, as programmes/project managers, country coordinators or monitoring and evaluation specialist) of the selected NGOs who oversee monitoring and evaluating all their projects and programs. These individuals are responsible for ensuring that the organization is complying with internal and external regulations and standards. These categories of persons are considered appropriate for this study because they are the programmes and project developers of the organisation and are responsible for the appropriate implementation of all projects.

Sources of Data

Primary data used in this research were gathered from primary sources of data. Primary data was sourced from responses obtained by administering questionnaire to respondents. The opinion of respondents was gathered using a cross-sectional survey method. The study used ODK application as a technique for data collection because it has been found to be controllable, time efficient, automatically codes data into numerical values for easy analysis and cost-efficient.

Sample Size and Sampling Techniques

The study was conducted using a sample size of 120 respondents drawn as one participant from each NGO which comprises of 83 respondents from the INGOs and 89 from NNGOs. The sample size was obtained by applying the Taro Yamane (1967) formula. In addition, a 10% non-responsive buffer was added to the sample size to arrive at a total sample size of 132. According to Babbie (2020), adding a buffer will improve the robustness, representativeness, and accuracy of the data collected. The respondents were contacted using their e-mails, also the survey instrument (ODK link) was shared. In addition, the questionnaire is simple to avoid non-response from respondents. Simple random sampling techniques was used to select respondents from the population. This approach to sampling, according to Johnstone, (2022) gives every member of the population an equal opportunity of being selected for the study. Every individual chosen was entirely by chance and each member of the population had the same chance of being included in the sample.

Method of Data Collection

Data collection for this study was done using survey method, by administering a closed ended questionnaire via an electronic application called Open Data Kit (ODK) collect. The questionnaire is simple to understand to avoid non-response from respondents. Open Data Kit (ODK) collect is a free Android application tool for designing and deploying data collection forms for surveys and research, it replaces the analogue way of collecting data using pen and paper. Open Data Kit (ODK) was used in this study because it supports a wide range of question-and-answer. Its flexibility enables a wide range of applications, and its offline data collecting feature makes it ideal for usage in remote locations. Data collected with ODK can be secured and access controlled, making it suited for sensitive research. The software's open-source nature eliminates licensing fees and enables customization by other users and developers. It is an excellent option for its cost saving ability and streamlining the data collection process and facilitating data cleaning and analysis due to its seamless connection to several data analysis tools. This instrument was administered to the strategic planning department (coordination) and the compliance unit (internal auditors) of each NGO selected for the survey.

The questionnaire for this study was adapted from Eniola, Olorunleke, Akintimehin, Ojeka, and Oyetunji, (2019), it consists of demographic section and topical section. The topical section adopted a five Likert scale of, Very High Influence, High Influence, Moderate Influence, Low Influence and No Influence, of determinant factors on performance.

Method of Data Analysis

This study employed both Descriptive and Inferential statistics to analyse the data collected. Simple linear Regression analysis was used to test the hypotheses of the study, with regards to how organisational culture and information technology influence the performance of NGOs in Borno state. Preliminary analysis such as common method variance (CMV) was employed to test alteration that is attributed to the method of measurement in the research work, Normality Test, to depict the Normality of Skewness and Kurtosis of the data, Multicollinearity to determine the level of relationship between independent variables in the study, Factor analysis to depict sampling adequacy, and lastly, Reliability test to ascertain the instrument ability to measure the variable were all employed before the main analysis is conducted. Regression analysis was used to test the predicting power of the determinants because of the variations in determinant factors as well as the significance level of the regression (Balu, Hajja & Adda 2020). while descriptive statistics was used to evaluate the extent of compliance with the concept note. The study used Statistical Package for Social Sciences (SPSS) version 25 to run the multi-variate analysis. In addition, the electronic application ODK automatically convert the raw data into numerical form for easy analysis of the data.

Measurement of Variables

Performance was measured using evaluation of programme outcome on a five Likert scale namely (No Extent, Low Extent, Moderate Extent, High Extent, Very High Extent). Organisational culture, and information technology were measured using the extent to which employee comply to their job description as regards division of task and organisational structure and lastly, extent to which IT is deployed and used in these organisations.

Result and Discussions

Out of 132 organisations sampled, only 126 organisations agreed, participated, and completed the questionnaire constituting 95% response rate while 6 organisations declined. These were found to be valid and useful for the analysis. Therefore, the response rate did not fall below the minimum sample size considered adequate for the study as shown in Table 1.

Table 1: Summary of Response Rate

Details	Copies of questionnaire	Percentage (%)
Number of questionnaires completed	126	95.0
Number of questionnaires declined	6	5.0
Total	132	100

Source: Field Survey, 2024

Data cleaning and screening was conducted for any errors in coding before doing further analysis on the variables (Pulka, 2022). Results of the frequency test indicated that there was no extreme minimum or maximum value exceeding the range of the five-point scale responses. Additionally, no missing responses were identified. Hence, it was concluded that there were no errors in data coding and data entry and the data was clean.

Test of Normality

Data Normality refers to the shape of the data distribution for variables in a study and their correspondence to normal distribution (Tabachnick & Fidell, 2007). Thus, the initial test of normality in this study showed that the data is normally distributed as revealed by the values of the Skewness and Kurtosis which are within the

acceptable range of < 2 and < 7 respectively (Kline, 2005). Therefore, Table 2 depict the Normality of Skewness and Kurtosis Statistics.

Table 2: Normality Test: Skewness and Kurtosis Statistics

Variables	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
NGO Performance	126	-0.234	0.216	-0.525	0.428
Organizational Culture	126	-0.225	0.216	-0.422	0.428
Information Technology	126	-0.042	0.216	-0.521	0.428
Valid N (listwise)	126				

Source: Field Survey (2024)

Reliability test of variables

Reliability refers to the extent which the items in an instrument is able to hold together in measuring a variable. In this research Cronbach's alpha coefficient is used to measure reliability of variables under study. the Cronbach's alpha coefficient threshold for acceptable reliability is 0.70 and above (Cavana et al., 2001; Sekaran & Bougie, 2013; Nunnally & Bernstein, 1994). As shown in Table 3 the variables have achieved the minimum threshold for accepting reliability.

Table 3: Reliability Test Result

Variables	No. of Items	Cronbach Alpha Value
NGO Performance	14	0.823
Organization culture	09	0.745
Information Technology	10	0.717

Source: Field Survey (2024)

Test of hypotheses

Regression analysis was engaged in analysis the hypotheses of the study. Results of regression analysis to determine whether or not Organizational Culture and Information Technology on did individually affect performance of NGOs in Borno State is presented in Table 4. Significance of the regression analysis was conducted in ascertaining whether or not the purported hypotheses be accepted or rejected. Consequently, a coefficient less than 0.05, indicates that there is a significant relationship between observed variables.

Hypothesis One

H₀₁: Organisational Culture does not significantly affect Performance

The regression analysis assessed the effect of Organisational Culture on NGO Performance. The results shows that $\beta = 0.156$, T statistics = 2.299 and the P-values = 0.002. This suggests that Organisational Culture does significantly affect performance of NGO in Borno State. Therefore, hypothesis one, which states that Organizational Culture does not significantly affect Performance is rejected.

Hypothesis two

H₀₂: Information Technology does not significantly affect Performance

The regression analysis assessed the extent to which impact of Information Technology predicts performance of NGO in Borno State. The results show, $\beta = 0.237$, T statistics = 3.719 and the P-values = 0.000. This implies that Information Technology does significantly influence performance of NGOs in Borno State. Therefore, hypothesis two, which states that: Information Technology does not significantly affect Performance is rejected.

Table 4: Regression Results of Hypotheses Testing

Variables	Beta	T Stat.	P	Decision
Organizational Culture	0.156	2.299	0.002	Reject null hypothesis
Information Technology	0.237	3.719	0.000	Reject null hypothesis

a. Dependent Variable: NGO Performance, sig=0.05

Source: Field Survey (2024)

Conclusion and recommendations

Results have provided empirical evidence to conclude that:

- i. Organizational Culture plays a crucial role in determining the effectiveness and efficiency of NGOs. When NGOs foster a positive and supportive organizational culture, it can enhance employee morale, encourage collaboration, and improve overall operational efficiency. As a result, NGOs with strong, positive cultures tend to perform better in achieving their goals and delivering services to their communities. Given the significant relationship between Organizational Culture and NGO performance, the study aligns with the emphasizes and importance of organizational culture in shaping the behaviour, attitude, and performance of employees within an organization. The study concludes that a strong organizational culture can lead to better communication, increased motivation, and a more cohesive work environment, all of which contribute to improved NGO performance. Thus, fostering a positive organizational culture should be a strategic priority for NGOs aiming to enhance their effectiveness and impact.
- ii. The study concluded that the influence of IT on NGO performance is substantial and not due to random variation, suggesting that IT plays a critical role in enhancing various aspects of NGO activities, including efficiency, communication, and resource management. The findings strongly support the notion that IT adoption is beneficial for NGOs, contributing to better strategic planning, improved service delivery, and more effective stakeholder engagement. This conclusion aligns with existing research in nonprofit management, emphasizing the transformative potential of IT in optimizing organizational performance and achieving better outcomes for NGOs.

Results of data analysis have shown that organisational culture and information technology do significantly affect the performance of Non-Governmental Organisations in Borno State. Consequently, it is recommended that NGOs in Borno State should ensure the promote organisational cultures that are progressive. Furthermore, it is recommended that NGOs should continue to invest in information technology, in order to enhance their performance.

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CONCEPT OF AGENCY COSTS IN PRIVATE VERSUS PUBLIC COMPANIES IN NIGERIA

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Abstract

This conceptual paper examined agency costs in private and public companies through the lens of agency theory. Agency costs stemming from conflicts between principals (owners) and agents (managers) varied significantly across organizational types due to differences in ownership structure, regulatory environments, and managerial incentives. The paper identified key distinctions in how these costs manifested in private and public firms, particularly with regard to governance mechanisms, levels of transparency, and the protection of shareholder rights. A framework was proposed to explain how these factors interacted to shape agency costs in different corporate contexts. By offering a comparative perspective, the study contributed to a deeper understanding of corporate governance and provided practical insights into strategies for minimizing agency costs across diverse ownership models.

Keywords:

Agency costs, public companies, private companies, agency theory, corporate governance

1. INTRODUCTION

Agency theory provides a foundational lens through which the relationship between owners (principals) and managers (agents) in corporate structures is understood. Jensen and Meckling (1976) conceptualized agency theory as a means to examine the delegation of decision-making authority and the conflicts that emerge when the goals of principals and agents diverge. These conflicts often manifest as agency problems, giving rise to agency costs expenses incurred in monitoring, incentivizing, or otherwise aligning managerial behavior with the interests of owners.

While this theory has significantly influenced corporate governance discourse globally, its applicability to the Nigerian context warrants critical examination. In Nigerian private firms, ownership structures often reflect a blend of formal and informal dynamics, where cultural norms, extended family involvement, and patronage systems play pivotal roles. Thus, the neat dichotomy of principal-agent roles postulated by Jensen and Meckling may not adequately capture the complex socio-economic realities of firm behavior in Nigeria.

In public companies, agency costs are notably higher due to dispersed ownership and the resulting gap between shareholders and management. Managers in such settings, benefiting from greater informational asymmetry and weak enforcement of corporate governance mechanisms, may prioritize personal interests over shareholder value (Fama & Jensen, 1983). In the Nigerian capital market, which is still maturing, enforcement of shareholder rights remains weak, and regulatory oversight is sometimes compromised by political interference or

institutional inefficiency. Consequently, agency problems may be exacerbated rather than mitigated in the Nigerian public company space (Shleifer & Vishny, 1997).

In contrast, Nigerian private firms tend to be closely held, with significant family ownership and involvement in daily management (Claessens et al., 2000). While this concentrated ownership can minimize certain agency costs by aligning interests, it may simultaneously entrench managerial authority, limit transparency, and reduce accountability particularly where succession planning and merit-based leadership transitions are absent. For instance, the fusion of ownership and control in many Nigerian family businesses has led to practices that prioritize familial loyalty over firm performance, potentially stifling innovation and competitiveness.

Moreover, the governance structures in Nigerian private firms are often informal and guided by personal relationships rather than institutionalized rules or professional standards (Chrisman et al., 2004). This informality can limit the effectiveness of internal controls and expose firms to risks stemming from unchecked managerial discretion.

Given these distinctions, this paper undertakes a comparative analysis of agency costs in public versus private companies, grounded in the Nigerian corporate environment. It explores how variations in ownership concentration, governance practices, institutional oversight, and socio-cultural factors shape the nature and magnitude of agency costs. By contextualizing agency theory within Nigeria's unique economic and institutional landscape, this study contributes to a more nuanced understanding of corporate governance in emerging markets and suggests practical mechanisms to reduce agency inefficiencies.

2. PROBLEM STATEMENT

While considerable progress has been made in the literature concerning agency costs in public companies particularly those stemming from the classic separation of ownership and control far less scholarly attention has been devoted to understanding how these costs manifest within private firms, especially in emerging economies like Nigeria. Public companies typically operate within formal regulatory frameworks, are subject to shareholder activism, and are exposed to market discipline through financial disclosures and investor scrutiny. These mechanisms, while imperfect, offer structured means of monitoring managerial behavior and limiting agency problems (Fama & Jensen, 1983). However, the efficacy of such governance frameworks in Nigeria is frequently undermined by weak institutional enforcement, corruption, and limited investor protection, making the monitoring role of shareholders less effective in practice.

In contrast, Nigerian private firms often exist in an environment characterized by concentrated ownership, low transparency, and limited regulatory engagement. These firms are frequently family-run, with ownership and control tightly integrated. While this concentration can theoretically reduce agency costs by aligning the interests of owners and managers, it introduces a new set of agency conflicts—those between majority and minority shareholders, or among family members with differing visions for the firm. In the Nigerian context, these tensions are compounded by socio-cultural factors such as kinship loyalty, inheritance traditions, and informal power hierarchies that may override formal organizational structures.

An important gap in the literature remains in understanding the contextual variables that shape the nature and intensity of agency costs in private versus public firms. In Nigeria, for instance, family-owned businesses may operate under informal governance mechanisms—such as verbal agreements, relational trust, or customary norms—rather than formal contracts or board oversight. While these informal systems may be efficient in high-trust settings, they can also obscure accountability and hinder the adoption of best governance practices. The absence of market discipline, external audits, or performance-based incentives in many Nigerian private firms further complicates efforts to monitor management and enforce strategic discipline.

Thus, while the concentrated ownership typical of Nigerian private companies may mitigate traditional

principal-agent problems, it introduces other inefficiencies that are equally important yet understudied. Future research must examine how informal governance, cultural embeddedness, and institutional voids interact to shape agency costs in such settings. A deeper understanding of these dynamics could inform more context-appropriate governance interventions aimed at improving organizational performance and accountability in Nigeria's private sector.

3. OBJECTIVE(S):

This paper aims to:

- i. examine the concept of agency costs in private and public companies.
- ii. identify the key factors that influence agency costs in both organizational types.
- iii. explore how governance mechanisms mitigate or exacerbate agency costs in each context.
- iv. propose a conceptual framework for understanding agency costs in private and public companies.

4. SCOPE AND RELEVANCE

This study holds significant relevance for both scholarly inquiry and the practical domain of corporate governance, particularly within the context of emerging markets like Nigeria. From an academic standpoint, it addresses a long-standing gap in the literature by extending agency theory beyond its traditional focus on public corporations to the relatively under-explored terrain of private enterprises. While agency theory has proven useful in explaining managerial behavior and shareholder dynamics in public firms, its assumptions often fall short in capturing the complex realities of private companies—especially those operating in socio-culturally embedded environments such as Nigeria, where informal power structures and familial relationships significantly shape governance practices.

Practically, the study provides nuanced insights for designing governance mechanisms that are context-specific rather than one-size-fits-all. In public companies, governance tools such as independent boards, external audits, shareholder voting rights, and regulatory enforcement mechanisms are emphasized to curb agency conflicts. However, their effectiveness in Nigeria is frequently constrained by weak regulatory institutions, politicization of board appointments, and limited enforcement capacity. Consequently, even in public firms, governance must be adapted to local institutional realities to function effectively.

In private companies—particularly those that are family-owned or entrepreneur-led—the dynamics are even more intricate. These firms often operate in environments of high trust but low formal oversight, where governance challenges stem not from managerial shirking, but from internal power struggles, lack of formalized processes, and generational succession issues. As such, this study advocates for the development of governance strategies that emphasize internal transparency, structured communication channels, and conflict resolution mechanisms tailored to closely held ownership structures. In the Nigerian context, this may also involve leveraging traditional conflict mediation practices and culturally relevant norms to supplement formal governance tools.

Beyond theoretical contributions, the research offers practical implications for improving organizational efficiency through agency cost reduction. In public firms, aligning executive compensation with performance metrics, strengthening board independence, and ensuring regulatory compliance can help realign managerial incentives with shareholder interests. In private firms, strategic efforts must be directed at balancing the interests of majority and minority owners, mitigating risks of nepotism, and formalizing operational decisions all of which can contribute to more sustainable profitability and resilience.

Ultimately, this study not only deepens theoretical discourse on agency costs across varied organizational forms, but also provides actionable, context-aware recommendations for corporate leaders, policymakers, and

governance advocates. Its relevance is particularly acute in Nigeria, where diverse ownership structures and institutional constraints necessitate more adaptive and locally grounded approaches to corporate governance.

5. STRUCTURE OVERVIEW

The paper is organized as follows: first, a review of the existing literature on agency costs in public and private companies, followed by a conceptual framework that compares the factors influencing these costs. The discussion then explores the theoretical and practical implications of these findings.

6. LITERATURE REVIEW

Overview of Agency Theory

Agency theory, originally articulated by Jensen and Meckling (1976), provides a foundational lens to examine the inherent conflicts of interest between principals (shareholders) and agents (managers) in organizations. These conflicts give rise to agency costs, comprising monitoring costs, bonding costs, and residual loss. However, while the model is robust in developed contexts, it does not fully capture the nuanced ownership dynamics in Nigerian firms, where cultural, familial, and informal power structures significantly shape managerial behavior and accountability.

Monitoring costs refer to expenses incurred by principals to oversee agent behavior such as audits, internal controls, or board supervision. These are typically higher in Nigerian public firms, especially given the weak enforcement environment and the necessity of complying with regulatory frameworks like those imposed by the Securities and Exchange Commission (SEC). Bonding costs, on the other hand, reflect efforts by managers to assure principals of their alignment, often through contracts or incentive-based pay. In Nigeria, informal agreements and ethnic patronage sometimes substitute formal bonding mechanisms, especially in family-owned or closely held businesses. Even with these mechanisms in place, residual loss may persist due to unresolved misalignments that lead to inefficiencies—such as non-meritocratic promotions, underperformance, or misuse of corporate resources.

While the theory underscores the importance of governance structures in minimizing agency costs, their practical application in Nigeria is often limited by structural issues such as regulatory laxity, nepotism, and political interference, particularly in public enterprises.

Agency Costs in Public Companies

In public companies, the separation between ownership and control is especially pronounced. Shareholders are often numerous and dispersed, entrusting the firm's operations to professional managers. This creates fertile ground for agency problems, as the incentives of these managers may diverge from those of shareholders. Mechanisms such as independent audit committees, board oversight, and regulatory frameworks—like the Nigerian Corporate Governance Code—are employed to reduce agency problems. However, their effectiveness is often hindered by compliance-based mindsets and weak institutional enforcement.

For example, many Nigerian public companies engage in box-ticking exercises to satisfy governance requirements without instituting genuine transparency or performance accountability. Additionally, politically appointed directors in state-linked firms, such as NNPC subsidiaries, often prioritize political interests over shareholder value. As a result, public companies in Nigeria are burdened with high monitoring costs without necessarily achieving effective managerial alignment.

Moreover, managers in Nigerian public companies may focus on short-term performance metrics to meet investor expectations or manipulate earnings for bonus maximization. This short-termism, coupled with

limited shareholder activism, exacerbates the agency problem and leads to inefficiencies that can impede long-term value creation.

Agency Costs in Private Companies

Private companies, typically characterized by concentrated ownership and direct oversight by founders or family members, are believed to experience lower agency costs. In Nigeria, this assertion requires deeper scrutiny. While close monitoring is more feasible in firms like Dangote Group or Innoson Motors, the same ownership concentration can lead to managerial entrenchment and a lack of accountability, especially in the absence of professional management layers.

Moreover, Nigerian private firms often lack formal governance structures. Decisions may be centralized and informal, limiting transparency and creating room for self-serving behavior, especially among non-family managers. The absence of regulatory scrutiny further heightens the risk of moral hazard and reduces the effectiveness of bonding strategies. Empirical observations suggest that some private companies suffer from governance complacency, relying excessively on trust and kinship rather than structured controls.

Still, private firms in Nigeria tend to exhibit more flexibility in aligning managerial and owner interests due to their smaller size and simplified decision-making structures. However, when these firms seek external capital, especially from international investors or development finance institutions, they face significant bonding costs to reassure financiers of operational integrity and financial discipline.

Comparative Analysis of Agency Costs in Nigerian Private and Public Companies

While agency theory suggests that private companies generally have lower agency costs than public companies due to ownership proximity, this distinction is far from absolute in Nigeria. Private firms may benefit from hands-on oversight, but they also face risks from informal management styles, opaque decision-making, and weak internal controls. Conversely, public firms are burdened by regulatory compliance and dispersed ownership, yet they benefit from access to capital markets, standardized governance frameworks, and external scrutiny.

For instance, whereas a public entity like First Bank Nigeria operates under strict regulatory supervision with diverse shareholders and independent board structures, a privately held company may face fewer procedural hurdles but higher risks of unchecked managerial discretion. Moreover, public firms often attract more skilled talent due to visibility and structured career paths, whereas private firms must rely on loyalty-based retention strategies.

The post-indigenization era in Nigeria has also created hybrid ownership structures where public companies have significant government or family shareholding, further complicating agency relationships. These overlapping interests can blur the lines between principal and agent, leading to conflicts that are not easily addressed by standard governance models.

Gaps in the Literature

Despite significant theoretical advancement, empirical studies comparing agency costs across organizational forms in Nigeria remain scarce. Most existing research focuses exclusively on public or private firms in isolation. This creates a knowledge gap in understanding how context-specific factors such as institutional quality, ownership culture, and enforcement practices moderate the application of agency theory in Nigeria.

A critical question thus emerges: Can the assumption that private companies inherently have lower agency costs hold in economies where nepotism, opacity, and weak enforcement are endemic? Furthermore, to what extent do Nigeria-specific governance practices (e.g., informal bonding, political appointments) affect the efficiency of

agency cost-reduction mechanisms?

Such questions demand localized empirical research that goes beyond importing Western theoretical models and instead reflects the lived realities of Nigerian corporate governance.

7. CONCEPTUAL FRAMEWORK

Definition of Key Concepts

Agency Costs

Agency costs refer to the inefficiencies and expenses arising from conflicts of interest between principals (owners or shareholders) and agents (managers or executives). These costs are typically categorized into three components:

- **Monitoring Costs:** These are incurred by principals to supervise agents, ensuring alignment with shareholders' interests.
- **Bonding Costs:** These are costs borne by agents to assure principals of their commitment to organizational goals, often through contractual obligations or incentive mechanisms.
- **Residual Loss:** This refers to the net loss resulting from the divergence of agent behavior from principal interests, even after monitoring and bonding strategies are implemented (Jensen & Meckling, 1976).

Private Companies

Private companies are characterized by ownership held by a limited number of individuals or entities, such as families or private equity firms. Their shares are not publicly traded, and the ownership structure typically enables closer oversight and direct control by owners, potentially lowering agency costs.

Public Companies

Public companies have shares that are publicly traded on stock exchanges. Their ownership is widely dispersed among numerous shareholders, necessitating formal governance mechanisms to align the interests of managers and shareholders. Although this structure often increases monitoring costs, it also provides access to wider capital markets and enhances liquidity.

Framework Explanation

The proposed conceptual framework explores the determinants of agency costs in private versus public companies, emphasizing ownership structure, governance mechanisms, regulatory environment, and shareholder rights. These variables interact to shape the nature and magnitude of agency costs within each organizational context.

Ownership Structure

In private companies, ownership concentration allows direct managerial oversight, thereby reducing the need for extensive monitoring. However, when seeking external financing, such companies may face higher bonding costs to assure investors. In contrast, public companies exhibit dispersed ownership, creating a distinct separation between owners and managers. This separation necessitates stronger governance mechanisms, increasing monitoring costs, but also reduces bonding costs due to easier access to capital markets.

Governance Mechanisms

Private companies often exhibit informal governance due to the direct involvement of owners. Nonetheless, as

they engage external investors, formal structures may be necessary, raising bonding costs. Public companies, governed by stringent regulatory and listing requirements, are mandated to maintain formal governance mechanisms, such as independent boards and audit committees. These requirements elevate monitoring costs but promote transparency and protect shareholder interests.

Regulatory Environment

Private companies typically operate under less rigorous regulatory oversight, which may reduce compliance costs but expose them to greater risks of agency problems if governance is weak. Public companies are subject to comprehensive regulatory scrutiny, such as those imposed by the Securities and Exchange Commission (SEC) or Financial Conduct Authority (FCA). These regulations help manage agency costs through enforced transparency and shareholder protections, albeit with high compliance expenditures.

Shareholder Rights

Shareholder rights in private companies are usually concentrated among a few owners, often resulting in closely aligned interests with management. However, minority shareholders may lack effective influence or protection. Public companies, by contrast, provide more robust mechanisms to safeguard minority shareholder rights, including voting powers, access to disclosures, and regulatory recourse. These protections help reduce agency costs by enhancing managerial accountability.

8. DISCUSSION

Theoretical Implications

This framework contributes to agency theory by elucidating the differential impact of ownership structures, governance practices, and regulatory environments on agency costs across company types. It underscores the necessity for context-specific governance strategies tailored to organizational structure and market exposure.

Practical Implications

The framework provides actionable insights for stakeholders in both private and public firms. Private companies are encouraged to adopt more structured governance systems, especially when external financing is involved, to mitigate the risks associated with ownership concentration. Public companies should continuously improve shareholder protections and board effectiveness to minimize agency-related inefficiencies.

Limitations

This conceptual framework is theoretical and lacks empirical validation. Future empirical studies are recommended to test these propositions using real-world data, thereby enhancing the framework's applicability and relevance across varied corporate contexts.

9. CONCLUSION

Summary of Contributions

This paper has developed a conceptual framework that provides a comparative understanding of agency costs in private and public companies. It underscores the nature of agency costs arising from principal-agent conflicts and how these costs are shaped by structural and governance differences between organizational types. While agency theory is extensively applied in the context of public companies, where dispersed ownership leads to heightened challenges such as ownership-control separation and information asymmetry, its relevance to private firms remains less thoroughly examined.

The analysis highlights that public companies rely on formal mechanisms such as independent boards,

regulatory oversight, and transparent reporting to mitigate agency costs. Conversely, private companies, often characterized by concentrated ownership and informal governance, may experience internal agency issues, particularly among family members or between majority and minority shareholders. The framework thus emphasizes the importance of context-specific governance approaches, tailored to the ownership structure and regulatory environment of the firm. These insights contribute to a better understanding of how governance practices can be optimized to enhance efficiency, organizational performance, and long-term sustainability.

Future Research Directions

Subsequent research should focus on empirically validating the proposed framework through comparative studies of agency costs across sectors, ownership models, and geographic regions. Additionally, the evolving landscape of corporate governance shaped by shareholder activism, technological innovations, and digital governance platforms offers fertile ground for future inquiry into how emerging practices can influence and potentially reduce agency costs in both private and public organizations.

Final Thoughts

Agency costs remain a pivotal consideration in corporate governance. A comprehensive understanding of the structural and contextual factors that drive these costs is essential for organizations seeking to strengthen accountability, improve performance, and ensure governance resilience. By aligning governance mechanisms with organizational realities, both private and public companies can more effectively manage agency relationships and achieve strategic goals.

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ESG CLIMATE RESILIENCE AND FINANCIAL PERFORMANCE: DOES ENVIRONMENTAL, SOCIAL, AND GOVERNANCE (ESG) DISCLOSURE MATTER FOR SUSTAINABLE INDUSTRIAL GROWTH IN NIGERIA?

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Abstract

This study explores the impact of environmental, social and governance (ESG) disclosure on the financial performance of publicly listed firms in Nigeria, focusing on the price to earnings (P/E) ratio. The population of the study consist of eleven industries listed on the Nigeria Exchange Group (NGX). Employing a stratified sampling technique, three industries were selected based on their heightened vulnerability to climate risk: oil and gas, natural resources, and industrial goods. The analysis focuses on data from 2011 to 2020, drawn from secondary sources, including financial statements, standalone sustainability reports, and the NGX fact book. Mixed methods approach was utilized for data analysis, blending both content and quantitative analysis. The study finds that social disclosures significantly enhance P/E ratio, indicating a strong investor confidence and potential stock price growth. Conversely, environmental and governance disclosures negatively and insignificantly impact the P/E ratio, suggesting firms prioritize profits over sustainability and governance practices. The study recommends firms strengthen social disclosure while improving transparency in environmental and governance practices to foster sustainable growth, mitigate climate risks and attract socially responsible investors. The policy implication of the finding is that policymakers should prioritize social disclosure regulations while reassess the current environmental and governance disclosures requirements to identify areas of improvement.

Keywords:

ESG Sustainability
Disclosure, Price to
Earnings ratio and Climate
Resilient

1. Introduction

The environmental, social and governance (ESG) sustainability is sometime refer to triple bottom line reporting or 3p (people, planet and profit) to denote annual corporate reporting published by firms to provide information about companies' environmental, social, and governance impacts caused by their industrial activities. Pursuant to this, the United Nations (2009) reports on climate change urge companies to align their vision with climate goals as well as manage climate related risks. This advocacy has triggered international organizations like the Global Reporting Initiative (GRI) and United Nations Sustainable Stock Exchanges Initiative (SSEI) to developed various ESG indices for companies to adopt and report climate risk associated with industrialization to ensure quality assurance to diverse stakeholders aimed to provide transparent and accountable information beyond financial reporting, tailored towards accomplished sustainable business practices (Ibrahim, 2023).

The nexus between ESG and firms' performance has been widely addressed in the extant literature especially in relation to accounting-based measures. Although, studies that connect ESG and market-based measures of performance were scanty for example, (Ibrahim & Tahir, 2024), (Sani et.al (2021), Hongming et.al. (2020),

Bually (2020), Sjögren and Wickström (2019) among others. The weaknesses of the aforementioned studies lie on the historical nature of reporting past economic events characterized with differences in accounting policies among entities. Though there are few other studies that examine the effect of ESG on market-based measures of performance such as (Asuqno, Tamitayo and Raphael (2018), Harmadji, Subroto, Saraswati and Prihatiningtias (2018), Venanz1 (2012), Buys, Oberholzer and Andrikopoulos (2011), and Manescu (2011). Even the few studies that examine the effects of ESG on the market-based measure are mostly carried out in developed economies where ESG sustainability disclosure is mandatory and are highly regulated, for instance the United States of America (USA), United Kingdom (UK), Germany, Spain and other European nations. Hence, there is the need for this study in less-developed countries (LDC). Therefore, Nigeria in particular, couple with the contemporary emerging national and international advocacy towards the actualization of the UN Sustainable Development Goals (SDGs) this study is suited for this conference in line with SDG 3 good health and well-being, SDG 6 clean water and sanitation, SDG 7 affordable and clean energy, SDG 8 decent work and economic growth, SDG 9 industry, innovation and infrastructure, SDG 11 sustainable cities and communities, SDG 13 climate action, SDG 14 life below water and SDG 15 life on land.

Consequently, it is apparent that existing studies on ESG and financial performance have particularly shown concern on aggregate component of ESG. The major setback of such studies is that they do not provide essential evidence as to which specific component of environmental, social or governance sustainability disclosure accounted for firms' performance and as such investors and other interest groups may find it difficult to evaluate the effect of individual component of ESG sustainability. Hence, there exist a paucity of research that examine the disaggregate component of environmental, social and governance sustainability reporting, especially drawing a large sample from industries whose activities are prone to climate-related risks particularly firms operating in the NGX. Hence, the needs for empirical research to evaluate the effect of disaggregate components of ESG sustainability on firm performance especially in the study area. Thus, in a quest to bridge the identified gaps this study seeks to establish a new inquiry by utilizing longitudinal research approach with a robust and appealing methodology namely panel least square regression to examine the disaggregate effect of ESG sustainability on market based measure variable (price to earning ratio) with a view to provides further empirical evidence and contributes to the bulk of literature on ESG and firm's performance in a new contextual setting, the Nigeria Exchange Group (NGX) by expanding the understanding of the phenomena.

The study has both theoretical and empirical relevance. Theoretically, the study adds to the existing knowledge and expands the understanding of the phenomena in the literature of ESG. Thus, the introduction of additional variable namely, the market-based measures of performance measured in terms of P/E ratio has enrich the literature with new insight for investors to assess firms' resilient to climate related risks. Additionally, the disaggregate components of ESG has also provide socially responsible investors a new insight in assessing the individual effect of environmental, social and governance sustainability about market based measure of performance which in turn enable them make rational and informed decision. Subsequently, positioning the findings of the study within the context of signaling theory have brought about a paradigm shift and facilitate a policy discussion on how regulators and market participants especially foreign investors in assessing firms' ESG sustainability disclosure practice and their resilient to climate risks. Notwithstanding, this help firms understand what aspects of the performance measurement variable that best explain the relationship between ESG and market value in relation stock price, market share and firm reputation. Empirically, the findings of the study have brought about a new perspective in understanding the driver of ESG sustainability practices among firms in NGX. Thus, due to its dynamic nature, existing research as accorded little interest in combining industries that are more inclined to climate risk namely; oil and gas, natural resources and industrial goods industries. This research, therefore, provides additional knowledge of the subject matter that is linked to

literature. Furthermore, the findings may also serve as a reference point for further research for students and academia.

The study is limited in scope, consisting of twenty selected publicly listed firms across three industries namely; oil and gas, natural resources and industrial goods across NGX for the periods of ten (10) years from 2011-2020. The rationale for choosing these industries was largely informed by the sensitive nature of their industrial activities that resulted to environmental degradation through oil spillage, greenhouse gas emissions, discharges to water and other emissions, which to a larger extent adversely depleting the environment and hence they are prone to climate change and global warming risk. In addition, P/E ratio has been utilized in terms of variable.

In the light of the foregoing, the unexplored dimension that lately attracted research attention appears to be important and worthy of investigation, is examining the effect of disaggregate component of ESG sustainability on firms' performance. Interestingly, an evaluation of this nature is important because it brings into light, the extent to which the interplay between the market-based measure of performance variable have effect on the disaggregate component of ESG sustainability which in turn may warrant a policy shift or otherwise maintains the status quo of the extant literature. Hence, the objective of the study is to explore the extent to which the disclosure of ESG sustainability by selected listed firms in Nigeria drive market performance of P/E ratio. This a subject of research that past studies have ignored particularly in the study area.

2. Literature Review

Environmental, Social and Governance Sustainability Disclosure

The World Commission on Environment and Development (Brundtland Commission) defines ESG sustainability as the “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (Bluszcz, 1992, p6). Accordingly, the concept of ESG in accounting literature could be traced back to earlier 70s and late 60s. ESG is annual corporate reports published by firms disclosing non-financial information to a diverse range of stakeholders on the environmental issues (planet), social (people) and economy (profit), impacts caused by industrialization and by extensions incorporating governance and business ethics (Ibrahim & Tahir, 2024; Akbulut, 2019). Firms report financial information to investors and users of financial statements. However, the adverse effects of business operations on the environment and climate related risks have garnered significant global attention, making regulators push for more disclosure of company non-financial information. ESG sustainability reporting entails integration and reporting of non-financial information to diverse stakeholders about firms' operations on the environment, social and governance perspectives (Ibrahim et al., 2023). The Global Reporting Initiatives (GRI, 2016) notes that ESR relates to organizational impact on ecosystem biodiversity, effluents and waste, gases as well as water discharges. The SSR assesses impact of operations on gender diversity, equality, social investment, human rights, due diligence, community engagement, among others. The GSR focuses on organizations' instituting mechanisms that enable stakeholders better understand and evaluate firms' adherence to policies, rules and regulations as well as sustainable business practices.

Measurement of ESG Components of Sustainability Reporting Metrics

ESG sustainability as an independent variable is measured by quantifying the reported metrics of environmental, social and governance disclosure in binary form (for example, if an item of ESG metric is disclose by the reporting firm, score 1 and 0 for not disclosure). The scores are aggregated and divided by the total numbers of items which ought to have been disclose to arrive at the average scores. Thus, the procedure is applied independently to each of the environmental, social and governance component parts of sustainability. The ESG sustainability indicators/metrics are used for the scoring based on GRI framework as shown on the checklist The scores are then merged using algorithms, and is subject it to inferential analysis using Stata version

14 statistical package the panel least square regression analysis is utilized as technique of data analysis. The inferences are drawn from the statistical analysis in form of findings, which revealed a firm's readiness or otherwise to address the risks associated with environmental, social and governance issues in its business cycle. The findings are aligned with the theories underpinning the study. In line with the extant literature, content analysis is carried out, highlighting the detail description of the ESG metrics based on industry-specific. Essentially, the environmental component of ESG measure firm's impact as a result of its industrial activities that lead to carbon emissions, biodiversity, emission and waste as well as the strategy to improve them. Social issues include safety and well-being, labour relations and community engagement, among others. Whereas, the governance component includes issues such as board diversity and independent, anti-corruption and bribery, board meeting, business ethics, among others (GRI, 2016).

The Environmental, Social and Governance Sustainability Reporting Guideline

The advocacy for ESG sustainability reporting practice could be traced back to the late 70s and early 80s. Although it is much more pronounced in recent years due to the firms' engagement in activities that are prone to climate related risk. Thus, climate risk management is increasingly becoming part of business risk management because regulations have been intensified and investors exerting pressure demanding nonfinancial information while making investment decisions. Accordingly, in an effort to mitigate the climate change risk associated with industrialization, there are international organisations such as the Global Reporting Initiative (GRI), the United Nations Global Compact and Sustainable Stock Exchanges Initiative (SSEI) who have created various sustainability reporting indexes for companies to adopt to ensure quality assurance to stakeholders, this is aimed at providing transparent and accountable information beyond financial reporting that is geared towards an accomplished sustainable business practice. These indexes are currently undergoing scrutiny with a view to be integrated into accounting standards by the international federation of accountants (IFAC), that essentially aim at unifying and incorporating them into international financial reporting standards (IFRS). Figure 2.1 below highlight the components of ESG sustainability reporting guidelines in infographic form.

Figure 2.1: ESG sustainability reporting guidelines

Source: Adopted from IPIECA, 2020



Table 2.1: Sustainability Performance Indicators/Index Based on NSE Guidelines

S/N	Theme	Descriptive	Principle	Indicators/Metrics
1.	Environmental (E)	Product and services responsible	3,9	Ethical procurement practices
		Water	9	Eco-friendly, fewer chemicals/toxic
		Waste management	9	Hazardous waste/discharge
		Energy	9	Alternative energy research
2.	Social (S)	Diversity in workplace	5	Percent of the board filled by women
		Labour practice	5,6	Non-discrimination policy
		Health & Safety	5	occupational & health issues
3.	Governance (G)	Anti-corruption	8	Exposure related to anticorruption
		Anti-bribery		

Source: NSE 2018 Guidelines on Voluntary Sustainability Disclosure

Table 2.1 summarizes the sustainability performance indices every listed firm operating in the NSE is expected to comply with voluntarily. The theme column consists of ESG component with its corresponding elements or contents in each as shown in the descriptive column. On the other, the principle column is referring to its original GRI proposed standard as a point of reference. The indicator/metrics is the expected outcome as a result of compliance with sustainable business practice.

Financial Performance

Essentially, firms measure their financial performance through the accounting performance indicators (accounting and market-based measures), to ensure that they are operating as efficiently and effectively as possible, and also to find out whether the firm is achieving its strategic goals such as growth, gained market share, increased market value for its stock, optimum returns to its shareholders which complement its primary role of profit maximization. Also, performance measures can be used to support continuous improvement by focusing attention on the areas where managers want a certain level of performance. Masa'deh (2015), confirms that performance measures can be used to support continuous improvement by focusing attention on the areas where managers want a certain level of performance.

Price-to-Earnings (P/E) Ratio: The price-to-earnings ratio is a measure of market confidence in the shares of a firm. The common way to compute the ratio (by dividing the market price by earnings per share) is practical since analysts can observe price per share and historical earnings per share for most firms. The Wall Street Journal reports the P/E ratio as part of the daily coverage of stock prices and trading activities (Stickney *et al.*, 2007). The ratio is calculated using the current share price and current earnings, as the following formula indicates:

$$P/E = \text{Market Price per Share} / \text{Earning per Share}$$

Also, it is known that the higher the P/E ratio, then the better the expectations of the firm's future profitability. Although, the P/E ratio is efficient since analysts do not need to produce a computation of value or a forecast of earnings, it creates a misalignment for valuation purposes since it divides historical earnings into share prices that reflect the present (Masa'deh *et al*, 2015).

Theoretical review

There are many theories explaining the relationship between ESG sustainability and firm performance. This study employs the signaling theory because it explains the synergy between ESG sustainability and financial performance from both investors and firm perspective. The theory developed by Spence (1973), posits that information asymmetry and opportunistic tendencies may be checked by sending quality information to market participants on ESG Sustainability through feedback and interaction between signaler and receiver. Signaling is broadly classified into positive and negative. A positive signal improves firms' value and performance. While negative signals reduce firms stock price and product demand. Therefore, organization performance lies on the way and manner in which the quality of information and its reliability reach diverse stakeholders. Thus, there is close linked between ESG sustainability with signaling theory such that stakeholders' engagement, proactive environmental strategy, climate change commitment and other ethical issues serves as motives and drivers for firms to voluntarily integrate and reports on ESG namely; environmental, social and economy aspects into their annual reports and account.

Empirical Review

Studies on ESG and financial performance abound in the literature across several industries using various measure, for instance, Ebaid (2023) examined SR and financial performance of 67 listed Saudi companies from 2016 to 2019 and found Saudi companies make minimal sustainability disclosures. Hongming, Ahmed, Hussain, Rehman, Ullah, Khan (2020) examined level and extent of ESG and firm performance in Pakistan using 50 listed non-financial companies from 2013 to 2017 and reported a significant positive effect on firm performance. In another perspective, Onyebuenyi and Ofoegbu (2022) studied SR of 15 listed oil and gas companies in Namibia, Nigeria, and Kenya from 2011 to 2019 and reported mixed results for various performance measures. The disclosure of effluent and hazardous waste significantly and negatively affected ROE, but positively affected NPM. Similarly, environmental sustainability protection expenditure disclosure positively influenced ROE, but negatively influenced GPM. In the same line of argument, Haidar and Suhail (2021) examined 519 Saudi financial and non-financial listed firms from 2015 to 2017 and found no relationship between ESG practices and financial performance. Similarly, Herbert, Nwaorgu, Onyilo, and Iormbagah (2021) investigated ESG sustainability practices of Nigerian listed upstream petroleum companies in 2018 and found minimal reporting of ESG disclosures and significant exposure to climate related risks. Consequently, Abdulsalam, Sani, Tanko, Babangida, and Sabo (2020) examined ESG disclosure of eight Nigerian oil marketing companies from 2003 to 2013 and reported disclosure of sustainable information in line with IPIECA (2015) guidelines was significantly associated improved performance. Nonetheless, Nwaiwu and Oluka (2018) examined environmental cost disclosure and financial performance of Nigerian listed oil and gas companies and found environmental costs disclosures and compliance to environmental policies significantly enhanced firms' financial performance. Since little is known about the influence of ESG components on market based measure of firm performance, particularly price to earnings ratio, this study's novelty lies in three fold; firstly, it focuses on three major industries that are prone to climate risks whose operational activities pose great climate related risks (Cardoni, Kiseleva, Terzani, 2019; Mohammed, 2016). Secondly, it uses market-based measures of firm value contrary to most studies relying on accounting measures (Cardoni, Kiseleva, and Terzani, 2019; Buallay, 2021;

Hongming, Ahmed, Hussain, Rehman, Ullah, Khan, 2020; Bala & Ibrahim, 2022). Thirdly, it examines individual components of ESG sustainability influence on market-based measures of performance (price to earnings ratio) to provide new insights that are invaluable to investors.

Material and Methods

The study adopts a quantitative research design; data are sourced from secondary sources and are utilized for the study. They are sourced from annual reports and accounts of the sample firms in the Nigerian Stock Exchange Market (NSE) for the period spanning 2011-2020. Content analysis is utilized from the stand-alone sustainability report, to investigate what firms are reporting as regards to the three components of sustainability reporting namely ESG using the GRI index as a benchmark in measuring ESG sustainability.

Table 3.1 List of Variables and their Measurement

Proxies	Acronym	Measurement	Previous Studies
Environmental issues	ENV	Ecological, Emission, Gas spillage, waste, decommissioning, discharge, flied.	Kolk (2005), Jenkins & wright (2006), Carter & Easton (2011).
Social Issues	SOS	Donations, Contributions, Voluntary resettlement, Social investment.	Abdulsalam (2017), Ibrahim et.al (2023), Mercedes-Rodriquez-fernandez (2015).
Governance Issues	GOV	Shareholders engagement process/policy disclosure, whistle blowing among others	Bually et.al (2020), Abdulsaam (2017), Asuquo Onyeogaziri (2018).
Price to Earnings Ratio	PE	<u>Market Price per Share</u> Earnings per Share	Valenti, Luce and Mayfield (2011), Ehikioya (2009), Sanda, Mikailu and Garba (2005).

Source: Researcher's compilation, (2025).

Model specification

The Panel regression model is given below:

$$y_{it} = \alpha_i + \beta_{ij}x_{it} + \epsilon_{it}$$

Where:

y_{it} : vector of dependent variable.

x_{it} : vector of explanatory variables.

i = individual firms.

t = time period

The constant term (α_i) represents the intercept of the equations while (ϵ_{it}) is the error term that captures variables not included and expected to be identically distributed with zero mean and constant variance.

$$y_{it} = \alpha + \beta_1 x_{1it} + \beta_2 x_{2it} + \beta_3 x_{3it} + \beta_4 x_{4it} + u_{it}; \quad i = 1, 2, \dots, N.; T, \dots, (1)$$

$$PE_{it} = \alpha + \beta_1 ENV_{it} + \beta_2 SOS_{it} + \beta_3 GOV_{it} + u_{it}; \quad \text{where: } i = 1, 2, \dots, N.; T, \dots$$

Where:

EVN=represents the environmental performance.

SOC = stand for social costs.

GOV = stand for economic issues.

PR= stands for Price to Earnings Ratio.

i = represents individual firms 1.....20.

T = stands for the period 2011,.....2020.

α_0 represents the intercept term.

$\beta_1, \dots, \beta_n$ Are the model parameters to be estimated.

4. Discuss of Results

Data collected were presented and analysed using descriptive and inferential statistics. Diagnostics tests were conducted to ascertain meeting multivariate analysis assumptions. Table 4.1 shows the descriptive statistics. The mean and standard deviation of SDI were 0.69 and 0.21. The maximum and minimum values of SDI were 1 and 0. Disclosure of EDI had a mean of 0.9 and a standard deviation of 0.22. The maximum and minimum were 1 and 0. The mean and standard deviation of GDI were 0.44 and 0.18 with maximum and minimum of 0.83 and 0.13. In sum, the descriptive statistics reveal listed firms report more of SD and less of ED despite presence of regulators. The mean of P/E ratio was 1.70, standard deviation of 1.72 and maximum and minimum values were 11.30 and 0.50 respectively.

Table 4.1: Descriptive Statistics

VARIABLES	MEAN	MAX	MIN	SD	NO OBS
SDI	0.69	1	0	0.21	200
EDI	0.09	1	0	0.22	200
GDI	0.44	0.83	0.13	0.18	195
PE	1.70	11.3	0.50	1.72	197

Source: Stata 14 outcome (2025)

Regression Results for ESG Sustainability and Financial Performance

Table 4.2 presents the regression results for ESG and market performance as measured by P/E ratio. In table 4.2 it could be observed from the OLS pooled regression that the R-squared value of 0.09 shows that, about 9% of the systematic variations in market performance as measured by price to earnings ratio in the pooled selected firms over the period of interest is jointly explained by the independent variables in the model. This implies that market performance in NGX cannot be 100 % explained by ESG sustainability variables. The unexplained part of the market performance can be attributed to exclusion of other independent variables that can impact on market performance but are excluded because they are outside the scope of this study.

The F-statistic value of 6.15 and its associated P-value of 0.01 shows that the OLS regression model on the overall is statistically significant at 5%, this means that the OLS regression model is valid and can be used for statistical inference. Table 4.2 also shows a mean VIF value of 1.33 which is less than the benchmark value of 10, and so it indicates the absence of multicollinearity, and that means no independent variable should be dropped from the model. Also, from the table, it is observed that the OLS results had heteroscedasticity problems since its probability value was significant at 1% [40.09 (0.0000)]. The presence of heteroscedasticity clearly shows that our sampled companies are not homogeneous. This therefore means that a robust or panel

regression approach will be needed to capture the impact of each company heteroscedasticity on the results. This study therefore, adopted the panel regression method using both fixed and random effect models. The results from the panel regression as shown in Table 4.2 are discuss as follows.

The F-statistic and Wald-statistic value of 7.05 (0.01) and 19.62 (0.01) for fixed and random effect models respectively shows that both models are valid for drawing inference since they are both statistically significant at 5%. In the case of the coefficient of determination (R-squared), it was observed that 11% and 11% systematic variations in market performance proxies by price to earnings ratio was explained jointly by the independent variables in the fixed and random effect models respectively. This therefore implies that more of the variation in market performance were explained when compared to the OLS pooled regression. The results also confirm that ESG sustainability variables are not the only factors that drive market performance since about 89% was still not explained for both fixed and random effect. Specifically, the results from the panel regression revealed differences in the magnitude of the coefficients, signs, and the number of insignificant variables.

In selecting from the two panel regression estimation results, the Hausman test was conducted. A look at the p-value of the Hausman test (0.34), implies that we should accept the null hypothesis and reject the alternative hypothesis at above 5% or 1% level of significance. This implies that we should adopt the random effect panel regression results in drawing our conclusion and recommendations. This also implies that the random effect results tend to be more appealing statistically when compared to the fixed effect. Following the above, the discussion of the random effect results became imperative in testing our hypothesis as it relates to price to earnings ratio. The below is a specific analysis for the independent variables using the random regression for each of the disaggregate components of ESG sustainability.

Table 4.2: Regression Result for Price to Earnings ratio

	PE Model (Pooled OLS)	PE Model (FIXED Effect)	PE Model (RANDOM Effect)
C	-43.61 {0.006} **	-57.13 {0.012}	-49.81 {0.005} **
SOCIAL SUSTAINABILITY	99.59 {0.000} ***	152.90 {0.000} ***	115.91 {0.000} ***
DISCLOSURE			
ENVIRONMENTAL	-13.81 {0.469}	-31.10 {0.381}	-18.18 {0.432}
SUSTAINABILITY			
DISCLOSURE			
GOVERNANCE	-31.90 {0.183}	-82.29 {0.084}	-43.22 {0.142}
SUSTAINABILITY			
DISCLOSURE			
F-statistics/Wald Statistics	6.15 (0.01) **	7.05 (0.01) **	19.62 (0.01) **
R- Squared	0.09	0.11	0.11
VIF Test	1.33		
Heteroscedasticity Test	40.09 (0.000) ***		

HAUSMAN TEST Prob>chi2 = 3.37 (0.3381)

Note: (1) bracket {} are P-values

(2) **, ***, implies statistical significance at 5% and 1% levels respectively

Source: Field Survey (2025)

Test of Hypotheses

Social sustainability disclosure (SSD) (random effect = 115.91 (0.000)), as an independent variable to market performance appears to have a positive and significant influence on market performance as proxied by price to earnings ratio. This therefore means we should reject the null hypothesis *{social disclosure by selected listed firms in Nigerian Exchange Group does not significantly drive market performance}*. This implies that an increase in social disclosure of selected listed firms in NSE significantly increase market performance as measured in terms of price to earnings ratio of such firms. This result agrees with prior empirical results which show that social disclosure is a major driver of market performance (Platonova *et al.*, 2017; Hutagalung & Harahap, 2016; Nevado-Pena *et al.*, 2015; and Natalia & Tarigan, 2014). The results do not tally with existing research of that, report that social disclosure has a significant negative impact on market performance (Hutagalung & Harahap, 2016; Nor *et al.*, 2016; and Lesmana & Tarigan, 2014). The results did not also tally with previous findings of various researchers that report that social disclosure has an insignificant positive impact on market performance (Al-Dhaimesh & Al-Zobi, 2019; Caesaria & Basuki, 2017; Nnamani *et al.*, 2017; Bukhori & Sopian, 2017; and Wijayanti, 2016).

Environmental sustainability disclosure (ESD) (random effect = -18.18 (0.432)) as an independent variable to market performance appears to have a negative and insignificant influence on market performance as proxied by price to earnings ratio. This therefore means we should accept the null hypothesis *{environmental disclosure by selected listed firms in Nigerian Exchange Group does not significantly drive market performance}*. This implies that an increase in environmental disclosure of selected listed firms in NSE will insignificantly decreases market performance as measured in terms of price to earnings ratio of such firms. This result agrees other finding that shows that environmental disclosure is not a driver of market performance (Platonova *et al.*, 2017; Hutagalung & Harahap, 2016; Nevado-Pena *et al.*, 2015; and Natalia & Tarigan, 2014). Most specifically, the results do not tally with previous findings of various researchers that report that environmental disclosure has a significant positive impact on market performance (Aras *et al.*, 2010; and Bhagat & Bolton, 2008;). The results do not also tally with previous findings of various researchers that report that environmental disclosure has an insignificant positive impact on market performance (Sari & Andreas, 2019; Hutagalung & Harahap, 2016; Nor *et al.*, 2016; and Lesmana & Tarigan (2014)).

Governance sustainability disclosure (GSD) (random effect = -43.22 (0.142)) as an independent variable to market performance appears to have a negative and insignificant influence on market performance as proxied by price to earnings ratio. This therefore means that the study should accept the null hypothesis *{governance disclosure by selected listed firms in Nigerian Exchange Group does not significantly drive market performance}*. It implies that an increase in governance disclosure of selected listed firms in NSE will insignificantly decreases market performance as measured in terms of price to earnings ratio of such firms. This result agrees with other empirical studies which show that governance disclosure is not a driver of market performance (Platonova *et al.*, 2017; Hutagalung & Harahap, 2016; Nevado-Pena *et al.*, 2015; and Natalia & Tarigan, 2014). Most specifically, the results do not tally with existing research on the report that, governance disclosure has a significant positive impact on market performance (Brammer *et al.*, 2006; and Fiori *et al.*, 2009). The results do not agree with existing findings of various researchers that report that, governance disclosure has an insignificant positive impact on market performance (Hull & Rothenberg, 2008; Mahoney & Roberts, 2007; Waddock & Graves, 1997; Lee *et al.*, 2009; D'Arcimoles & Trebucq, 2002; Aras *et al.*, 2010; Bhagat & Bolton, 2008; and Fernandez-Sanchez & Sotorrio, 2007).

Discussion of Findings on ESG Sustainability and P/E Ratio

Aligning the finding within the context of signaling theory suggests that disclosure of social sustainability information by selected listed firms in the NGX sends a positive signal to investors. Thus, a positive signal enhances stock price and guarantee future earnings as a result of increase in market performance. Conversely, it also demonstrates commitment by the firms to operate as good corporate citizens in given back to the society in form of diversity and inclusion such as employment opportunity, adherence to safety and health issues, community engagement, grievance management, among others. Furthermore, the sampled firms also demonstrate climate resilient suggesting domesticating the principles of SDG 3 good health and social well-being among its staff and the host community. More so, adherence to the principle of SDG 8 decent work and economic growth is also evident.

In contrast, environmental and governance sustainability disclosure substantiated the signaling theory (in negative form) in that the way and manner in which the quality of negative information in relation to environmental and governance sustainability disclosure may reduce stock price and product demand. This portends that such firm trade-off the corporate governance mechanism and environmental policies in mitigating climate risks to profit maximization. Hence, environmental and governance sustainability disclosure are not drivers of market performance as measured in terms of P/E ratio.

5.1 Conclusion

The study explored the disaggregate component of ESG sustainability on P/E ratio to ascertain its individual effects. The study conclude that social component of ESG Sustainability is a driver of firm financial performance which in turn enhance stock price, future earnings among other things. Conversely, environmental and governance disclosures negatively and insignificantly impact the P/E ratio, suggesting firms prioritize profits over sustainability and governance practices. The study recommends firms strengthen social disclosure while improving transparency in environmental and governance practices to foster sustainable growth, mitigate climate risks and attract socially responsible investors.

5.2 Recommendation

This study establishes different positions on the effect of disaggregate components of ESG sustainability and firm financial performance. Based on the findings and conclusion of this study, it is therefore pertinent to recommend: The social disclosure component of ESG sustainability is a driver of market performance in terms of P/E ratio and should be sustain by the firms operating in NGX. However, there is the needs for such sampled firms to employ more prudent environmental and governance policies that could improve market performance in terms of P/E ratio. Thus, this should include the use of advanced technology in mitigating emissions and other harmful substance arising from their routine industrial operations. Furthermore, disclose climate-related risks and opportunities in line with task force on climate-related financial disclosure (TCFRD) guide lines, this would help enhance transparency on climate risks issues. In relation to governance, ensure that the board of directors has adequate expertise and diversity to oversee ESG issues and disclose information on board oversight processes. In addition, establish robust risk management processes to identify, assess and mitigate ESG risks and opportunities.

5.3 Policy implication

Facilitate policy discussion in curbing climate risks through domestication of prudent environmental policies such as proactive environmental strategy, transiting into advanced technology to mitigate emissions and other harmful substances, a reduction in energy consumption via decommissioning alternative energy, among other

climate change commitment by regulators and practitioners, which would invariably boost market participants' confidence and in return drives firms' performance in the NGX.

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Appendix 1 ESG Disclosure (index/checklist)

ESG Components of Sustainability Reporting

Environmental Disclosure Index:	
Climate change and energy.	E1: Material disclosure
	E2: Energy disclosure
	E3: Emission disclosure
	E4: Biodiversity disclosure
	E5: Water disclosure
	E6: Effluents and water disclosure
	E7: Services environmental impact
	E8: Environmental laws and regulations
Social Disclosure Index:	
Community and society.	SE1: Donation and gifts disclosure
	SE2: Indigenous peoples
	SE3: Health and safety disclosure
	SE4: Social investment disclosure
	SE5: Workforce incident or accident rate disclosure
	SE6: Human right disclosure
Governance Disclosure Index:	
Climate Risk Management	GDI1: Compliance to corporate governance standards disclosure
	GDI2: Board roles and functions disclosure
	GDI3: Chairman roles in the board disclosure
	GDI4: CEO roles in the board disclosure
	GDI5: Non-executive/independent directors roles disclosure
	GDI6: Company secretary role in the board disclosure
	GDI7: Board of directors' biographic information disclosure

	GDI8: Board members age disclosure
	GDI9: Board meetings with attendance records disclosure
	GDI10: Board members appointment dates disclosure
	GDI11: Board change/re -election or resignation information disclosure
	GDI12: Board education and training process disclosure
	GDI13: Board performance review/process disclosure
	GDI14: Internal control system disclosure
	GDI15: Shareholders engagement process/policy disclosure
	GDI16: Disclosure of CEO compensation
	GDI17: Board ethics, anti-corruption and code of conduct disclosure
	GDI18: Board members third- party transactions disclosure
	GDI19: Whistle blowing process/policy disclosure
	GDI20: Disclosure of board shares ownership
	GDI21: Disclosure of major shareholders
	GDI22: Disclosure of audit committee activities
	GDI23: Disclosure of board remuneration committee
	GDI24: Disclosure of board nomination committee

Source: GRI 2016.

Appendix 2 Content analysis

Table 1: ESG Sustainability Disclosure Score for Sample Oil and Gas Industry

Year	11 PLC	Conoil	Eternal	Forte	Japaul	MRS	Oando	Total PLC
2011	11	11	15	10	9	16	19	15
2012	11	15	14	15	9	16	18	18
2013	11	15	14	15	9	16	19	20
2014	12	15	14	17	9	16	19	20
2015	11	15	16	20	9	16	20	20
2016	12	17	19	20	7	20	20	20
2017	22	16	20	20	7	22	21	21
2018	24	16	21	20	10	22	23	21
2019	24	16	21	20	11	20	0	21
2020	24	13	10	17	5	19	0	19

Source: Researchers' Computation, 2025.

Table 2: Sustainability Reporting Score for Sample Natural Resources Industry

Year	Boc Gases Nigeria PLC	Aluminium Extrusion Industries PLC	Multiverse Mining and Exploration PLC	Thomas Wyatt Nigeria PLC
2011	8	11	5	11
2012	9	12	5	11
2013	14	11	5	11
2014	14	11	5	11
2015	14	12	5	9
2016	14	11	5	11
2017	14	11	5	11
2018	14	11	5	11
2019	14	11	5	11
2020	15	0	5	4

Source: Researchers' Computation, 2025.

Table 3: Sustainability Reporting Score for Sample Industrial Goods Firms

Year	Berger Paints Nigeria PLC	Chemical Allied PLC	Lafarge Cement					
			Dangote Cement PLC	WapCo Nig.	Portland Paints Nigeria PLC	Premier Paints PLC	Cutix PLC	Griff Nigeria PLC
2011	16	14	12	25	19	5	14	10
2012	18	18	13	25	19	7	14	9
2013	17	17	13	25	19	7	14	9
2014	17	17	19	25	20	9	15	10
2015	21	18	28	26	20	9	16	10
2016	21	18	30	26	20	7	16	10
2017	22	19	30	26	20	14	17	11
2018	23	19	31	26	20	12	20	11
2019	23	19	31	26	20	12	20	11
2020	23	25	30	29	16	9	20	10

Source: Researchers' Computation, 2025.

EFFECT OF BOARD ATTRIBUTES ON ESG DISCLOSURE OF ENVIRONMENTALLY SENSITIVE INDUSTRIES OF NIGERIA; ROLE OF AUDIT FIRM CHOICE

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ABSTRACT

This study examines the moderating impact of audit firm choice on the relationship between board attributes and Environmental, Social, and Governance (ESG) disclosure in environmentally sensitive industries in Nigeria. This study was conducted to provide solution to companies facing issues of inconsistent reporting standards, unreliable data, and inadequate integration of ESG factors into their core business reports. Panel data from 26 firms over six years (2018–2023) were analyzed to assess the influence of board independence, board gender diversity, board committee and audit firm choice on ESG disclosure. Firm size was incorporated as control variables. Descriptive statistics reveal an average ESG disclosure level of 40%, signaling significant potential for improvement in corporate sustainability reporting. Correlation analysis highlights significant positive relationships between ESG disclosure and most board attributes and audit firm choice. Fixed-effects regression with robust standard errors indicates that all board attributes and audit firm choice positively and significantly influence ESG disclosure. These findings emphasize the importance of robust board attribute on ESG disclosure particularly the strategic selection of audit firms, in improving ESG disclosure in Nigerian environmentally sensitive sectors. The study calls for policymakers to enhance governance frameworks and encourages firms to engage audit firms recognized for their expertise and adherence to global auditing standards, thereby fostering transparency and sustainability.

Keywords:

ESG disclosure, board attributes, audit firm choice, environmentally sensitive industries, Nigeria.

INTRODUCTION

Environmental, Social, and Governance Disclosure (ESGD) has gained significant attention in recent years, reflecting the growing recognition of its impact on business operations and broader societal concerns. ESG factors encompass various aspects, including climate change mitigation, labor practices, corporate governance, and ethical business conduct. ESGD plays a critical role in enhancing corporate transparency, accountability,

and stakeholder engagement. In Nigeria, ESGD frameworks are gradually developing through regulatory initiatives. The Central Bank of Nigeria (CBN) promotes sustainability in the financial sector through the Nigerian Sustainable Banking Principles, while the Securities and Exchange Commission (SEC) encourages capital market operators to incorporate ESG factors. The Nigerian Exchange Group (NGX) has also introduced Sustainability Disclosure Guidelines (2019) to encourage voluntary ESG reporting. Additionally, the Financial Reporting Council of Nigeria (FRC) is aligning with global standards through the International Sustainability Standards Board (ISSB). Despite these efforts, ESGD faces challenges such as a lack of a unified disclosure framework, inconsistent reporting methodologies, and data reliability issues, which hinder the comparability and credibility of ESG reports.

A significant issue in Nigeria is the absence of a universally adopted ESG framework. Companies rely on global standards such as the Global Reporting Initiative (GRI), Sustainability Accounting Standards Board (SASB), and the Task Force on Climate-Related Financial Disclosures (TCFD), yet these frameworks do not fully address Nigeria's socio-economic and environmental realities. The lack of standardization results in fragmented disclosures, making it difficult for stakeholders to assess sustainability performance. Furthermore, variations in ESG measurement methodologies and the lack of reliable data undermine the credibility of disclosures, increasing the risk of greenwashing. Many companies struggle with data collection, verification, and assurance, especially in remote operations where environmental impacts are harder to monitor. The absence of independent verification mechanisms further reduces stakeholder trust.

This study examines the moderating role of audit firm choice (AFC) in the relationship between board attributes and ESGD. Board attributes such as board independence, gender diversity, board size, board meetings, and the presence of a social responsibility committee influence ESGD. However, prior studies have produced mixed findings, highlighting the need for a moderating variable such as AFC to clarify these relationships. Large, reputable audit firms enhance ESGD credibility by ensuring compliance with recognized frameworks, providing independent verification, and strengthening stakeholder trust. Gender-diverse boards also tend to prioritize ESG issues, and when combined with strong audit oversight, ESGD quality improves. Board size similarly impacts ESGD by facilitating diverse expertise and better decision-making, which is reinforced by external audit scrutiny.

Board attributes play a critical role in shaping ESGD, but inconsistent findings in past research necessitate the introduction of a moderating variable. This study proposes audit firm choice (AFC) as a key moderator, emphasizing its role in reinforcing board accountability and enhancing ESGD reliability. Large audit firms ensure compliance with established frameworks like the GRI and SASB, while also providing risk assessments and disclosure improvements. By incorporating AFC as a moderating factor, this study aims to bridge gaps in existing literature and offer a clearer understanding of corporate governance and sustainability practices in Nigeria. Audit firms also play a crucial role in holding companies accountable for their ESG commitments. Independent assessments ensure that senior management and boards of directors actively oversee ESG disclosure. Auditors validate the accuracy of financial and non-financial reports, including ESGD, strengthening investor confidence.

This study contributes to corporate governance and sustainability research by exploring the impact of board attributes on ESGD, with a focus on audit firm choice as a moderating factor. It provides valuable insights for corporate boards and management, offering guidance on optimizing governance structures for improved ESG practices. It also benefits investors and financial analysts by helping them assess ESGD reliability and make informed investment decisions. Regulators and policymakers can use the findings to develop improved ESGD frameworks and policies, while academics and researchers can address gaps in literature and provide a foundation for further studies in governance and sustainability.

LITERATURE REVIEW

ESGD, encompassing the communication and reporting of environmental, social, and governance information, it has been defined by various scholars to emphasize different aspects of this multifaceted practice. Dye et al., (2021) describe ESGD as a communication tool that reflects sustainability performance beyond financial metrics. Liu, (2022) views ESGD as a means to achieve rating convergence among different agencies, suggesting a trend towards standardized definitions of ESG factors. This research defines ESGD as the systematic and comprehensive reporting of a company's environmental, social, and governance practices and performance. ESGD was measured using different proxies by previous studies, GRI was chosen for this study because it provides a widely recognized and comprehensive framework for sustainability reporting.

A company's board which is the top governing body with the responsibility of creating a link between the company and its stakeholders (FRCN Code, 2013). The board of directors is acknowledged for overseeing and monitoring management decisions and activities that benefit society, offering both direct and indirect advantages to all stakeholders –(Chebbi & Ammer, 2022). This holistic approach to defining board attributes emphasizes the importance of a balanced and well-rounded board in enhancing governance practices. Find below the board attributes used for this study;

This section reviews empirical findings on the influence of board independence on ESGD in different contexts, highlighting both consistent patterns and the need for further research to address mixed results. Pozzoli et al. (2022) examined the influence of board independence on the ESGD of Chinese firms. The study utilized panel data from 703 firms over a 14-year period from 2006 to 2019 and employed OLS regression analysis. The findings indicated a statistically significant positive relationship, suggesting that higher levels of board independence enhance ESGD. The study relied on stakeholder theory to explain how independent boards can better meet stakeholder expectations through transparent ESGD. However, the sample size, although substantial, may not fully represent the entire population of 4600 firms, limiting the generalizability of the findings. Future research could benefit from using a larger and more diverse sample. In contrast to the aforementioned positive relationships, Bala et al., (2023) found a negative relationship between board independence and ESGD in the Nigerian oil and gas sector. Their study utilized panel data from 13 companies over a seven-year period from 2014 to 2020 and employed OLS regression analysis. This study suggested that higher board independence might hinder ESGD in the oil and gas sector. Legitimacy theory was applied to understand the dynamics between board independence and ESGD. The small sample size and sector-specific focus limit the generalizability of the findings. Further research should explore this relationship in other sectors and with larger samples to verify these results.

In reviewing board gender diversity and its impact on ESGD, highlighting both the positive contributions and the challenges posed by inconsistent findings across different contexts and industries. Razaq et al. (2023) examined the effect of board gender on sustainability reporting in Nigeria. The study analyzed data over a ten-year period from 2011 to 2020, focusing on the influence of board gender diversity on sustainability reporting among Nigeria's quoted non-financial firms. Employing random effect regression on panel data from 51 firms, the authors found a positive but insignificant impact of board gender diversity on ESGD, measured by the Global Reporting Initiative (GRI) scores. The study was underpinned by Stakeholder theory, and it noted a gap in not providing the measurement of independent variables, suggesting areas for further research. Contrasting with the findings in the previous studies, Cucari et al., (2018) examined the gender diversity of board of directors and ESGD in Italy. The study analyzed a sample of 54 companies from various sectors including utilities, financial, and consumer discretionary over a ten-year period from 2011 to 2014. Using multiple regression analysis, they identified a negative and significant relationship between board gender diversity and ESGD. The authors reported that higher female representation on boards corresponded to lower ESGD ratings. This finding suggests that in the Italian context, board gender diversity might not lead to improved ESGD and could potentially hinder it, which

contradicts the commonly held belief that gender diversity promotes transparency. Further highlighting the complexity of the relationship between board gender diversity and ESGD, Fahad and Rahman (2020) studied the impact of corporate governance on ESGD in India, focusing on listed companies' data over a ten-year period from 2007 to 2016. The study revealed a negative correlation between board gender diversity and ESGD, indicating that higher female representation on boards was associated with lower levels of ESGD. This finding contradicts the expectation that gender diversity would enhance transparency and suggests that other factors might be influencing the relationship. Considering the significant changes in the corporate landscape since 2016, this study's conclusions may not accurately reflect the current scenario, emphasizing the need for more up-to-date research on this topic.

The relationship between board size and ESGD has been widely studied, larger boards are generally believed to bring diverse expertise and oversight, which can enhance ESGD by promoting more comprehensive discussions and strategic decision-making. However, some research suggests that larger boards may also lead to inefficiencies and coordination challenges, potentially hindering transparent and timely ESG disclosures. As a result, the impact of board size on ESGD varies across sectors and geographies, with some studies finding a positive relationship, while others report insignificant or even negative associations. Anyigbah et al., (2023) investigated the impact of audit board size on environmental, economic, and social performance among listed companies in China. The study examined the relationship between board size and EES performance using GRI 3.1 standards. Analyzing data from 703 companies out of a population of 4600 over the period 2006 to 2019, the study employed ordinary least squares (OLS) techniques on panel data. The findings revealed a positive and significant relationship between board size and EES performance, however the study did not capture the aspect of governance in the analysis, yet it shows that larger boards contribute positively to ESGD. The study was supported by Stakeholder Theory, Legitimacy Theory, and Resource Dependency Theory, highlighting the importance of diverse perspectives and resources in enhancing corporate performance across multiple dimensions.

Several studies have established a positive correlation between audit firm choice and the comprehensiveness of ESGD. For instance, Bala et al., (2023) investigated the impact of big four auditors on environmental accounting disclosures in the Nigerian oil and gas sector. Their findings, derived from panel data spanning 2014 to 2020 and analyzed using OLS regression, indicated a significant positive relationship. This study underscored the role of reputable auditors in enhancing the quality and reliability of environmental disclosures, measured using the Global Environmental Index. The authors employed stakeholder theory to contextualize their findings, highlighting the influence of powerful auditors in driving corporate transparency.

Building on this understanding, Buallay & AlDhaen, (2019) examined ESGD within the banking sector of the Gulf Cooperation Council. Using panel data from 2013 to 2017 and a Bloomberg index for ESG measurement, their study also found a positive and significant relationship between audit quality and ESGD. They applied dependency theory to explain how firms reliant on high-quality audits are more likely to provide comprehensive ESGD. The use of simple regression techniques further validated their findings, reinforcing the importance of audit firm choice in promoting ESGD.

Expanding the analysis to Indonesia, Pramono and Nasih (2023) explored the effect of auditor quality, particularly from big four firms, on ESGD among listed companies. Analyzing data from 2010 to 2018, they found that higher audit quality positively influenced ESGD. This study utilized a combination of legitimacy, stakeholder, and upper echelon theories to explain the dynamics at play. The actual scores from accumulated ESG categories served as the measurement for disclosures, further illustrating the positive impact of high-quality audits.

This research contributes to the literature by highlighting the role of audit firm choice as a key moderator on

board attributes, particularly in emerging markets where ESG disclosure became mandatory. Another study by Cohen, Krishnamoorthy, and Wright (2002) observed that firms with larger and more independent boards tend to select higher-quality audit firms, especially when facing regulatory scrutiny or operating in industries with high litigation risks. This implies that audit firm choice can magnify the impact of board attributes. Equally, firm with weaker boards may rely more heavily on the expertise of external auditors to uphold the impact of its board attributes, (Saeed & Saeed, 2018).

Theoretical framework serves as a foundational blueprint in research, guiding the study by providing a structured approach, it comprises a set of concepts, theories, and propositions that explain the relationships among variables relevant to the research problem. In this study, two key theories underpin the theoretical framework: agency theory and resource dependency theory. These theories are used to explore the relationship between board attributes and ESG disclosure.

Agency theory addresses the relationship between principals (owners/shareholders) and agents (managers/executives). In this dynamic, the principals hire agents to manage the company on their behalf. The central issue is that while the owners seek to maximize their investment returns, the managers may have personal goals that do not always align with the owners' interests. This divergence creates a potential conflict of interest, as managers might prioritize their benefits, such as higher compensation or job security, over the optimal performance of the company ""-'""(Alsmady, 2023; A. Buallay & Al-Ajmi, 2020; Fuadah et al., 2022; Lindex, 2022; Qaderi et al., 2022; Rodriguez-Fernandez, 2016).

Resource dependency theory focuses on how organizations rely on external resources to operate effectively and how they manage these dependencies to gain a competitive advantage. The theory was primarily developed by sociologists Jeffrey Pfeffer and Gerald R. Salancik in the 1978. The theory emphasizes how external resources and the environment influence the behavior and strategies of organizations, it posits that boards of directors play a critical role in providing access to essential resources such as expertise, knowledge, gender and connections, which can enhance the company's performance and sustainability –(Menicucci & Paolucci, 2022; Shao, 2019; Zhou et al., 2019).

One of the key components here is the composition of board gender diversity, for example, it brings a variety of perspectives and experiences that can significantly benefit the company. A diverse board can better the understanding and respond to the needs of different stakeholders, including customers, employees, and the community. This broader perspective can lead to more effective ESGD, as diverse boards gender are more likely to address a wide range of issues holistically especially that of a community. –(Chebbi & Ammer, 2022).

Board size also plays a crucial role in resource dependency theory. Larger boards can provide a wider array of expertise and resources, which can be beneficial for complex decision-making processes. A larger board can draw on a broader pool of knowledge and skills, enhancing the company's ability to manage its dependencies and navigate challenges. This diverse expertise can improve the quality of ESGD, as a more knowledgeable board is better equipped to understand and communicate the company's ESGD. (Jeanjean & Stolowy, 2009).

METHODOLOGY

This study employed a correlational research design to investigate the moderating role of audit firm choice in the relationship between board attributes and ESG disclosure (ESGD) in environmentally sensitive sectors of Nigerian listed companies. This design was chosen as it allows for examining relationships between variables without manipulation, making it suitable for identifying and measuring the strength and direction of associations. The study utilized secondary data, which was readily available and cost-effective. Secondary data sources such as company reports, financial statements, the NGX website, company websites, and sustainability disclosures provided systematically collected information over an extended period, enhancing the reliability of findings.

Using panel data, the study explored correlations between board attributes, including independence, gender diversity, and size, and ESGD while assessing the moderating role of audit firm choice. The study population comprised 150 listed companies across 11 sectors of the Nigerian Exchange Group (NGX). A sample of 27 companies was drawn from four environmentally sensitive sectors: oil and gas, industrial goods, natural resources, and agriculture. These sectors were selected due to their significant environmental impact, making them crucial for evaluating ESG disclosure (Emmanuel et al., 2024). The purposive sampling technique was employed to ensure the selection of companies most relevant to the study, enabling a focused analysis of board attributes affecting ESG disclosure in industries subject to higher environmental scrutiny.

To test the hypotheses, the following regression models will be specified. Model 1 to evaluates the direct relationship between board attributes and ESGD, model 2 is to examine the effect of the board attributes and the audit firm choice on ESGD, and Model 3 is to examines how board attributes and its interaction with audit firm choice moderates this relationship.

$$\text{Model 1 } ESGD_{it} = \beta_1 BI_{it} + \beta_2 BGD_{it} + \beta_3 BS_{it} + \beta_4 FS_{it} + \varepsilon_{it} \dots \dots \dots (1)$$

$$\text{Model 2 } ESGD_{it} = \beta_0 + \beta_1 BI_{it} + \beta_2 BGD_{it} + \beta_3 BS_{it} + \beta_4 AFC_{it} + \beta_5 FS_{it} + \varepsilon_{it} \dots \dots \dots (2)$$

$$\text{Model 3 } ESGD_{it} = \beta_0 + \beta_1 BI_{it} + \beta_2 BGD_{it} + \beta_3 BS_{it} + \beta_4 AFC_{it} + \beta_5 BI_{it} * AFC_{it} + \beta_6 BGD_{it} * AFC_{it} + \beta_7 BS_{it} * AFC_{it} + \beta_8 FS_{it} + \varepsilon_{it} \dots \dots \dots (3)$$

Where:

ESGD = Environmental Social and Governance Disclosure;

it = Longitudinal data indicator;

β_0 = Intercept;

ε = Error terms;

BI = Board Independence;

BGD = Board Gender Diversity;

BS = Board Size;

AFC = Audit Firm Choice;

FS = Firm Size;

The ESG disclosure (ESGD) is measured using a disclosure index derived from the Global Reporting Initiative (GRI) standards, where each item on the checklist is assigned a score of 1 for disclosure and 0 for non-disclosure, with the total score calculated as the sum of all disclosed items divided by the total expected items. Board independence (BI) is measured as the proportion of independent non-executive directors on the board, while board gender diversity (BGD) is measured as the proportion of female directors on the board. Board size (BS) is determined by the total number of directors on the board. Audit firm choice (AFC), serving as a moderator, is measured using a dummy variable, assigning a value of 1 if the company is audited by one of the Big 4 audit firms and 0 otherwise. Lastly, firm size (FS), a control variable, is measured using the natural logarithm of total assets.

DATA ANALYSIS AND DISCUSSION OF RESULTS

Descriptive Statistics

This section provides a detailed analysis of the descriptive statistics for the variables considered in this study. The discussion explores the central tendencies, variability, and implications of the observed data for ESG disclosure in environmentally sensitive industries in Nigeria as shown in Table 4.1.

Table 4.1: Descriptive Statistics

Table 4.1: Descriptive Statistics

Variables	Observations	Mean	Std. Dev	Min.	Max
ESGD	156	0.4008	0.1538	0.16	0.69
BI	156	0.1910	0.1443	0	0.53
BGD	156	0.1869	0.1439	0	0.67
BS	156	8.9679	3.1447	3	17
AFC	156	0.6710	0.4706	0	1
FS	156	17.8521	2.4520	13.84	23.32

Source: author computation using Stata 15 Software, 2024

The descriptive statistics presented in Table 4.1 provide insights into the characteristics of the variables used in this study. The results indicate that the average ESG disclosure among the sampled firms is 40.08%, with a standard deviation of 15.38%, suggesting moderate variability in disclosure levels. BI has a mean value of 19.10%, ranging from 0% to 53%, while BGD averages 18.69%, with some firms having no female representation and others reaching up to 67%. The average BS is approximately 9 members, with a minimum of 3 and a maximum of 17, indicating considerable variation in board composition across firms. AFC, a binary variable, shows that 67.1% of the sampled firms are audited by a Big 4 audit firm, highlighting a preference for reputable auditors. FS, measured as the natural logarithm of total assets, has a mean value of 17.85, with values ranging from 13.84 to 23.32, reflecting a diverse sample of firms in terms of scale. Overall, these descriptive statistics provide a foundational understanding of the data distribution and variability across the selected variables, which is essential for further inferential analysis.

The correlation matrix presented in Table 4.2 provides insights into the relationships between the variables in this study. The results indicate that ESG disclosure is positively correlated with BI (0.3075), suggesting that firms with more independent directors tend to disclose more ESG information. Similarly, BGD exhibits a weak positive correlation with ESGD (0.1711), indicating that gender diversity may play a limited role in influencing disclosure practices.

Table 4.2: Correlation Result

	ESG D	BI	BGD	BS	AFC	FS
ESG D	1.000					
BI	0.307 5	1.000				
BGD	0.171 1	0.293 0	1.000			
BS	0.647 5	0.466 8	0.0078	1.000		
AFC	0.671 4	0.340 3	0.1070	0.620 6	1.000	
FS	0.591 7	0.343 4	0.2363	0.465 2	0.3984	1.000

BS shows a strong positive correlation with ESGD (0.6475), implying that larger boards are associated with greater ESG disclosure. AFC is also highly correlated with ESGD (0.6714), suggesting that firms audited by Big 4 firms tend to have higher ESG disclosure levels. Additionally, FS demonstrates a substantial positive correlation with ESGD (0.5917), indicating that larger firms are more likely to disclose ESG-related information.

Table 4.3: Multicollinearity Result

Variable	VIF	1/VIF
BS	2.08	0.4809
AFC	1.68	0.5939
BI	1.44	0.6932
FS	1.40	0.7127
BGD	1.19	0.8418
Mean VIF	1.56	

Source: author computation using Stata 15 Software, 2024

The variance inflation factor (VIF) assess the presence of multicollinearity among the independent variables in this study. The results shown in table 4.3 indicate that BS has the highest VIF value of 2.08, followed by audit AFC with a VIF of 1.68. BI and FS have VIF values of 1.44 and 1.40, respectively, while BGD has the lowest VIF at 1.19. The mean VIF for all variables is 1.56, which falls well below the threshold of 10, suggesting that multicollinearity is not a significant concern in this study. Additionally, the inverse VIF (1/VIF) values further confirm that no variable exhibits a high level of collinearity that could distort the regression estimates. Therefore, the independent variables included in the model are appropriately distinct, ensuring reliable estimation of their effects on ESG disclosure.(Saeed & Saeed, 2018)

4.3 Normality Test Analysis

Table 4.4: Jarque-Bera Normality Test

Jarque-Bera Normality test: 4.807 Chi (2) .0904Jarque-Bera test for H_0 : normality: (Resid)Source: author computation using Stata 15 Software, 2023

The Jarque-Bera normality test results presented in Table 4.4 assess whether the residuals of the regression model follow a normal distribution. The test statistic is 4.807, with an associated p-value of 0.0904. Given that the p-value is greater than the conventional significance level of 0.05, the null hypothesis (H_0) of normality cannot be rejected. This suggests that the residuals are approximately normally distributed, supporting the assumption of normality in the regression model. Consequently, the model's estimates are likely to be reliable, and the results can be interpreted without significant concern for non-normality issues.

4.4 Hausman test analysis

Hausman test was conducted for this study for all the three models utilised, this test was conducted because hausman is a diagnostic tool utilized in panel data analysis to determine the suitability of employing either a fixed effects (FE) or random effects (RE) regression model. The result was shown in the appendix section on this study.

The test statistic for model 1, 2 and 3 produces a p-value of 0.0000 as shown in the appendix section of this study, leading to a strong rejection of the null hypothesis. This indicates that fixed effects (FE) model is adopted, as it accounts for the likely correlation between unobserved heterogeneity and the explanatory variables. The FE model is preferred for its consistency, ensuring that the analysis appropriately controls for time-invariant individual characteristics. This test highlights the importance of selecting the correct model in panel data analysis to avoid biased or inconsistent results.

4.5 Heteroskedasticity test analysis

The results of the Modified Wald test for groupwise heteroskedasticity provide crucial evidence regarding the suitability of standard assumptions for the fixed effects regression model. The computed chi-squared statistic,

accompanied by a p-value of (0.0000) across all the three models, leads to a strong rejection of the null hypothesis. This indicates that error variances differ significantly across groups, confirming the presence of groupwise heteroskedasticity in the fixed effects regression models.

4.6 Regression result analysis

The fixed-effects regression analysis explores the relationship between board attributes, and ESG disclosure among environmentally sensitive industries in Nigeria.

Table 4.5: MODEL 1 FIXED EFFECT REGRESSION ROBUST RESULT

ESGD	Coef.	Std. Err	T	p> t
BI	.0193858	.0340375	0.57	0.569
BGD	.0697666	.0329232	2.12	0.034
BS	.0021435	.0011073	1.94	0.043
FS	.00125	.0015603	0.80	0.423
Cons	.3483053	.0396136	8.65	0.000
R-Square within	= 0.2507			
Prob > F	= 0.1484			
Number of obs.	= 156			
Number of groups	= 26			
Obs. per group	= 6			

Source: author computation using Stata 15 Software, 2023

The regression results presented in Table 4.5 examine the relationship between board attributes, firm characteristics, and ESG disclosure. The coefficient for BI is 0.0194 with a standard error of 0.0340 and a t-statistic of 0.57, indicating an insignificant relationship ($p = 0.569$). This suggests that board independence does not have a statistically meaningful impact on ESG disclosure in this sample. BGD, on the other hand, has a positive and significant effect on ESG disclosure, with a coefficient of 0.0698 ($p = 0.034$), implying that increased female representation on boards is associated with higher ESG disclosure levels. BS also shows a positive and statistically significant relationship with ESG disclosure, with a coefficient of 0.0021 ($p = 0.043$), suggesting that larger boards may enhance ESG transparency. FS, however, does not exhibit a significant effect on ESG disclosure ($p = 0.423$), indicating that firm size alone may not be a strong determinant of ESG reporting practices. The constant term (0.3483, $p = 0.000$) is highly significant, representing the baseline ESG disclosure when all independent variables are at zero.

The R-squared (within) value of 0.2507 suggests that 25% of the variation in ESG disclosure is explained by the independent variables included in the model. The F-statistic p-value (0.1484), however, indicates that the overall model is not statistically significant at conventional levels. The model is based on 156 observations across 26 groups, with each group containing an average of 6 observations. Overall, the results highlight the importance of board gender diversity and board size in influencing ESG disclosure, while board independence and firm size appear to have limited explanatory power in this context.

The introduction of AFC as a moderating variable in Model 2 leads to several notable differences compared to Model 1.

Table 4.6: MODEL 2 FIXED EFFECT REGRESSION ROBUST RESULT

ESGD	Coef.	Std. Err	T	p> t
BI	.0663011	.0355018	3.07	0.004
BGD	.0590236	.020709	2.85	0.009
BS	.0023286	.0013924	2.67	0.007
AFC	.0292332	.004297	6.80	0.000
FS	.0012605	.0009842	2.28	0.012
Cons	.3250867	.02295527	11.00	0.000
R-Square overall	= 0.2861			
Prob > F	= 0.000			
Number of obs	= 156			
Number of groups	= 26			
Obs per group	= 6			

Source: author computation using Stata 15 Software, 2024

First, the coefficients for BI, BGD, and BS all increase in magnitude and become more statistically significant, suggesting that the inclusion of AFC strengthens their relationship with ESG disclosure. Specifically, BI, which was previously insignificant ($p = 0.569$), becomes highly significant ($p = 0.004$) with a larger coefficient. Firm size (FS), which was previously insignificant ($p = 0.423$), becomes significant ($p = 0.012$), indicating that the presence of a Big 4 auditor may enhance the impact of firm size on ESG disclosure. Additionally, AFC itself is highly significant ($p = 0.000$), reinforcing the idea that firms audited by Big 4 firms are more likely to disclose ESG information. The R-squared value increases from 0.2507 to 0.2861, indicating that the model's explanatory power improves with the inclusion of AFC. Furthermore, the overall model significance improves, as the p-value for the F-test drops from 0.1484 to 0.000, suggesting that the model with AFC provides a better fit. These findings highlight the critical role of audit firm choice in strengthening the relationships between board attributes, firm size, and ESG disclosure.

Table 4.7: MODEL 3 FIXED EFFECT REGRESSION ROBUST RESULT

ESGD	Coef.	Std. Err	T	p> t
BI	.0463513	.0262369	1.97	0.080
BGD	.0985785	.0379173	2.60	0.011
BS	.0027512	.0029545	2.93	0.004
AFC	.0123746	.0426743	4.29	0.002
BIAFC	.0384297	.0396586	2.07	0.005
BGDAFC	.0574851	.047282	3.22	0.007
BSAFC	.0000724	.003569	6.02	0.000
FS	-.0012851	.0017094	0.75	0.454
Cons	.329703	.0426034	7.74	0.000
R-Square overall	= 0.3040			
Prob > F	= 0.000			
Number of obs	= 156			
Number of groups	= 26			
Obs per group	= 6			

Source: author computation using Stata 15 Software, 2024

The introduction of interaction terms between AFC and board attributes in Model 3 results in notable differences compared to Models 1 and 2. The effect of BI on ESG disclosure weakens slightly ($p = 0.080$), but the significant interaction term (BIAFC, $p = 0.005$) suggests that its influence strengthens when firms are audited by Big 4 auditors. Similarly, BGD exhibits a stronger positive effect in Model 3 (coefficient increases from 0.0590 to

0.0986, with the interaction term (BGDAFC, $p = 0.007$) confirming that AFC amplifies its impact. BS also shows a slightly stronger effect, and the interaction term (BSAFC, $p = 0.000$) highlights that firms audited by Big 4 firms experience a greater influence of board size on ESG disclosure. Meanwhile, the direct effect of AFC decreases from 0.0292 in Model 2 to 0.0124 in Model 3, indicating that its primary role lies in moderating board characteristics rather than directly influencing ESG disclosure. The overall model fit improves, with the R-squared increasing from 0.2861 to 0.3040, demonstrating that incorporating AFC interactions enhances the explanatory power of the model. These findings reinforce the moderating role of AFC, showing that it strengthens the influence of board attributes on ESG disclosure rather than exerting a direct effect.

Discussions of findings

The study's findings reveal significant relationships between board attributes, audit firm choice (AFC), and ESG disclosure (ESGD). Board independence (BI) alone was initially insignificant but became significant when moderated by AFC, suggesting that firms audited by Big 4 auditors exhibit a stronger BI-ESGD relationship. Board gender diversity (BGD) consistently had a significant positive impact on ESGD across all models, with AFC further enhancing this effect. Board size (BS) was also positively associated with ESGD, with AFC strengthening this relationship. Audit firm choice itself was a significant determinant of ESGD, though its influence was more pronounced through interactions with board characteristics. Furthermore, AFC significantly moderated the relationships between BI, BGD, and BS with ESGD, reinforcing the role of Big 4 auditors in amplifying board characteristics' impact on ESG disclosure. Consequently, all null hypotheses were rejected, affirming the importance of board attributes and audit firm choice in ESG disclosure.

Summary, Conclusion and Recommendation

This study examined the impact of board attributes on ESG disclosure in environmentally sensitive industries in Nigeria, with AFC as a moderating factor. Three models were developed to assess the direct and interactive effects of BI, BGD, and BS on ESG disclosure. The findings indicate that while BGD and BS had a significant positive impact on ESG disclosure in all models, BI became significant only when AFC was introduced. Additionally, AFC was found to be a critical moderating variable, strengthening the relationship between board attributes and ESG disclosure. The overall explanatory power of the models improved with the inclusion of AFC and its interaction terms, confirming its role in enhancing ESG transparency.

The study concludes that board characteristics play a significant role in shaping ESG disclosure practices among environmentally sensitive firms in Nigeria. However, their influence is significantly strengthened when the firms engage reputable audit firms, particularly the Big 4 auditors. The findings suggest that independent boards, gender-diverse boards, and larger board sizes contribute to better ESG disclosure, but their effectiveness is heightened when combined with high-quality external audits. This highlights the importance of both internal governance structures and external oversight mechanisms in promoting transparency and sustainability reporting.

Based on the findings, it is recommended that companies operating in environmentally sensitive sectors should prioritize board diversity and independence to enhance ESG disclosure. Regulatory bodies should enforce policies that encourage gender diversity and independent directorship in corporate boards. Additionally, firms should consider engaging reputable audit firms to strengthen corporate governance and improve the credibility of ESG disclosures. Future research can explore other moderating factors such as regulatory frameworks and industry-specific characteristics to provide a broader perspective on ESG reporting dynamics in emerging markets.

The findings of this study have significant practical and policy implications for corporate governance,

sustainability reporting, and regulatory oversight in Nigeria's environmentally sensitive industries. Practically, firms should recognize the critical role of board attributes in driving ESG disclosure and take proactive steps to enhance board independence, gender diversity, and board size to improve transparency. Additionally, the study underscores the importance of engaging reputable audit firms, as their presence strengthens the governance-ESG disclosure relationship, enhancing corporate credibility and stakeholder confidence.

From a policy perspective, regulatory authorities such as the Financial Reporting Council of Nigeria (FRCN) and the Securities and Exchange Commission (SEC) should strengthen guidelines that encourage independent and diverse board structures. Policies mandating ESG reporting as a standard practice, particularly for firms in high-impact industries, should be enforced to promote transparency and sustainability. Furthermore, corporate governance codes should emphasize the role of external auditors in ensuring the reliability of ESG disclosures, encouraging firms to engage high-quality auditors to enhance accountability. These measures will contribute to improved corporate governance, sustainable business practices, and increased investor trust in Nigeria's capital market.

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Appendices

Model 1 hausman test result

	Coefficients			
	(b) fe	(B) re	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
bi	.0110284	.0193858	-.0083574	.0044173
bgd	.0706944	.0697666	.0009279	.0039035
bs	.0006474	.0021435	-.0014961	.0003231
fs	-.0003267	.00125	-.0015767	.0003633

b = consistent under Ho and Ha; obtained from xt
B = inconsistent under Ha, efficient under Ho; obtained from xt

Test: Ho: difference in coefficients not systematic

chi2(4) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= 25.43
Prob>chi2 = 0.0000

Model 2 hausman test result

	Coefficients			
	(b) fe	(B) re	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
bi	.0116387	.0188201	-.0071815	.0046681
bgd	.0731261	.0657705	.0073556	.0046588
bs	.0007358	.0021138	-.001378	.000313
afc	-.0112008	.0188439	-.0300447	.0068609
fs	-.0002599	.0012897	-.0015496	.0003771

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(5) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= 30.28
Prob>chi2 = 0.0000

Model 3 hausman test result

	—— Coefficients ——		(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
	(b) fe	(B) re		
bi	.1129878	.0840597	.0289281	.0125827
bgd	.1379357	.1402384	-.0023027	.0127672
bs	.0059834	.0151365	-.009153	.0026257
afc	.0681145	.1869554	-.1188408	.0350656
afcbi	-.122785	-.0905766	-.0322084	.0137434
afcbgd	-.0718447	-.072178	.0003333	.0136505
afcbbs	-.0057998	-.0146778	.008878	.0027004
fs	-.0000364	.0012888	-.0013252	.0003489
b = consistent under Ho and Ha; obtained from xtla B = inconsistent under Ha, efficient under Ho; obtained from xtla				
Test: Ho: difference in coefficients not systematic				
$\chi^2(8) = (b-B)' [(V_b-V_B)^{-1}] (b-B)$				
= 26.80				
Prob>chi2 = 0.0008				

EFFECT OF BOARD STRUCTURES ON ENVIRONMENTAL DISCLOSURE OF SELECTED OIL AND GAS COMPANIES IN NIGERIA

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ABSTRACT

This study investigated the impact of board structures on environmental disclosure practices among Nigerian oil and gas companies, while exploring the alignment of these practices with the Sustainable Development Goals (SDGs). Using a causal comparative research design and deductive approach, data from 30 companies over a five-year period (yielding 150 observations) were collected from annual reports and corporate websites. Analytical methods included descriptive statistics, regression analysis, and diagnostic tests for heteroskedasticity, multicollinearity, and residual normality. Findings indicated that board independence, larger board size, and gender diversity significantly enhance environmental disclosure levels. Larger firms demonstrated higher transparency, yet overall, Nigerian oil and gas companies disclosed only about 10% of their environmental initiatives, signalling substantial room for improvement. These outcomes align with SDG 12 (Responsible Consumption and Production), underscoring how stronger governance frameworks correlate with better environmental accountability. The study also links effective corporate governance to SDG 16 (Peace, Justice, and Strong Institutions), advocating institutional robustness to bolster sustainability commitments. Gender diversity's positive influence ties to SDG 5 (Gender Equality), emphasizing inclusive leadership for improved environmental outcomes. Additionally, the call for stricter environmental regulations and standardized reporting aligns with SDG 13 (Climate Action), urging proactive measures to mitigate ecological challenges. Globally, the research underscores the imperative for Nigerian firms to strengthen board composition and adopt consistent, transparent reporting mechanisms. Such reforms could amplify environmental disclosures, foster stakeholder trust, and accelerate progress toward achieving the SDGs in high-impact sectors like oil and gas.

Keywords:

Board structures, Firm size,
Environmental disclosure,
Sustainable Development
Goals

INTRODUCTION

Businesses often exploit gaps in traditional accounting frameworks to minimize the significance of environmental accountability. The absence of compulsory environmental reporting requirements, coupled with inadequate guidelines promoting such disclosures, enables firms to circumvent responsibility. High-profile corporate failures linked to poor governance have led stakeholders to question the reliability of the accounting sector, as they rely solely on corporate financial reports for critical economic decisions. In sectors like oil and

gas, where environmental impact is substantial, stakeholders expect companies to demonstrate commitment to their well-being by proactively disclosing ecological data. Yet, despite mounting pressure from communities and advocates for openness, many firms in these industries continue to provide superficial environmental updates in annual reports, overshadowed by their operations' adverse ecological effects. To rebuild trust, organizations must produce comprehensive, accurate, and verifiable environmental reports—a goal achievable only through rigorous independent oversight and auditing by management.

Environmental disclosure is an act of providing a broad audience with a clear understanding of a polluter's environmental performance, including emissions into the air, waste water discharge, waste, and standard compliance, (United Nations Department for Economic and Social Affairs, 1992). A system that is guiding and directing the operations of a company is known as corporate governance. The system includes both internal and external governance. Both those under the directors' control and those beyond their authority influence the company's operations. The system establishes policies for the company to enhance its value and performance. It fosters good business practices by selling values that benefit the entire organization (Nдалu Ibanichuka & Ofurun, 2021). A well-designed board structure is paramount to successful corporate governance, as it ensures the board's capacity to deliver strategic direction, oversight, and managerial accountability. A robust framework enables the board to drive organizational outcomes such as heightened accountability, greater transparency, stronger stakeholder engagement, enhanced risk mitigation, and more informed decision-making.

Furthermore, refining board structures and practices is an iterative endeavour that requires continuous refinement through regular evaluation. This process ensures alignment with the organization's evolving strategic priorities, operational complexities, and stakeholder expectations while maintaining governance efficacy. Earlier research has looked at corporate governance and environmental disclosure, (Ibrahim, Ibrahim, & Hussaini, 2023; Iyafekhe, Osamagbe, Equayeon, & Nelson, 2020; Trireksani & Dajadikerta, 2016). These studies were mostly in developed countries, not underdeveloped ones, and they used quantitative methods to measure things, like content analysis, which looks for specific words, themes, or concepts in qualitative data.

The research investigated the board compositions and environmental reporting of publicly traded oil and gas companies in Nigeria. It concentrated solely on listed companies as of December 31, 2024. The selection of oil and gas companies was motivated by the harmful effect on the natural environment, particularly through oil spills and the release of harmful gases, as well as their status as primary contributors to the federation's revenue, alongside the problem of oil theft linked to their failure to adequately address environmental disclosure. The paper focused on independent directors, board size, gender diversity on the board, and firm size as a moderating factor. The disclosure index was utilized to assess environmental reporting. The research covered a five-year period, 2020 to 2024.

However, certain factors such as firm characteristics, corporate governance, accounting standards and regulatory enforcement, influence corporations' voluntary environmental disclosure practices. (Okafor, Amahulu & Egbunike, 2022). Given that some stakeholders have expressed a desire for environmental disclosure, corporate governance should take this into account. Companies can benefit from sharing environmental information in addition to meeting stakeholder needs. Members of the corporate governance board could address these issues. The board structures have potential possibility to check the transparency of environmental information disclosure since it oversees the management of the corporation and supervises the directors and internal personnel who can inform the company about the advantages of revealing environmental concerns in annual reports or other communications. In this context, the paper examined the effect of board structures on environmental disclosure practices of oil and gas companies in Nigeria. With insight into how it

relates to Sustainable Development Goals (SDGs). The other parts of the paper looked at the literature review both empirical and theoretical reviews, methodology, results and discussions; summary, conclusion and recommendations with practical and policy implication of the research.

LITERATURE REVIEW

Environmental Disclosure is the process by which companies demonstrate their commitment to eliminate the risks associated with their operations and notify relevant parties in order to secure their support. Environmental disclosure is the inclusion of environmental data in yearly reports as an additional piece of content, demonstrating transparency with respect to the environment. In accordance with Al-Jubouri and Chakraborti (2022), environmental disclosure is a corporate strategy that aims to demonstrate the impact of the environment on society and potential solutions. Environmental disclosure is the provision of data to evaluate the financial implications of a business's conservational actions. An annual public statement known as environmental disclosure describes a company's environmental actions, including its aims, environmental policies, and environmental impacts. Environmental disclosure facilitates organizations' understanding of their public image. It functions as a conduit for communication between the business and its shareholders, (Dibia & Onwuchekwu, 2015). Environmental disclosure is mandatory due to the detrimental consequences of the company operations on the location and the intrinsic value of the environment, (Abubakar, Moses & Inuwa 2017). There is no single method that is widely accepted for assessing the quality of disclosure. However, several academic studies have analysed the superiority of environmental disclosure inline of the research objectives and the assessments made by the researchers. The current literature utilizes two main approaches to measure environmental disclosure: qualitative and quantitative methods, commonly known as the environmental disclosure index and content analysis, respectively.

Board Structures refer to the governance, arrangement, and part of company board of directors. This includes factors like board size, which shows the number of directors, and board composition, which refers to the diversity of skills and experiences within the group of directors. The functions of the board chair or chairperson are referred to as board leadership. The committee structure outlines the number of committees and their responsibilities, including those for audit, compensation, and nominations. The roles and responsibilities of directors describe the specific tasks and expectations for each member, as well as the frequency, structure, and procedures for board meetings. Board independence is the proportion of independent directors compared to executive directors in a company. Director tenure signifies the length of time that directors remain on the board. Board structure is a vital aspect of corporate governance. The main duties of the board of directors include overseeing, advising, and sanctioning the managers. Agency theory contend that the board of directors must carry out a strong supervisory function to safeguard shareholder interests. Different elements, such as the board's size, diversity, independence, financial acumen, information disparities, and organizational culture, affect its capability to fulfil its oversight duties (Brennan, 2006).

The Nigerian Code of Corporate Governance specify the creation of a board to supervise governance, risk management, nominations, compensation, and auditing functions. The organization is capable of fulfilling these responsibilities despite its size, operations, and demands. The code also requires that the board mainly consists of self-governing non-executive directors, who are tasked with governance, compensation, nomination, and audit responsibilities, (Federal Reporting Council of Nigeria, 2018). It is necessary to discuss the optimal structure of the board, including whether larger companies should have boards that are larger or smaller, and vice

versa. The investigation into board structure as a tool for corporate governance persists due to the unclear nature of the existing data and the differing views among scholars about the influence of board structure on a company's performance. Most research suggests that a company's board of directors significantly affects its environmental reporting. The study utilized board size, board independence, and board gender diversity as proxies for board structures.

Board size is the count of directors on a company's board. The directors operate in alignment with the organization's aims and objectives, as well as for its financial benefit. Therefore, having more directors in a company fosters a greater exchange of ideas, expertise, support, and oversight among board members. An idea, that a larger board could enhance independence and prompt management to disclose more information. Board size is a cumulative total of individuals serving as directors in a company, (Ovbiebo & Akpotor, 2019). This definition highlights the significance of understanding board size as a key aspect of corporate governance analysis and focuses on the numerical representation within board membership.

Board independence shows how many external directors not connected to the company are in the board structure. At times, board independence is considered by the aptitude of a board members to provide unbiased assessments of the company's operations free from undue influence by the chairman, management, or substantial shareholders. The share of independent non-executive directors on the board has a substantial effect on the organization's performance, as illustrated by the ratio of independent directors. This is due to the fact that a highly independent board can effectively diminish agency problems by overseeing managers and curbing any opportunistic conduct, (Oyedokun 2019).

Board diversity indicates that boards ought to mirror society's composition and effectively represent differing genders, ethnicities, and a variety of professional experiences and skills. It is important to focus on how boards are composed, as they aim to bring in a diverse array of viewpoints. However, the implementation of policies promoting gender diversity remains challenging due to cultural differences across nations, (Ramly et al. 2015). According to Sirnidi et al. (2011), the ideal board comprises of persons who are prepared to devote their professional time and possess a broad spectrum of talents, knowledge, and informational authority. The conventional global structure of boards does not readily support a direct correlation between gender diversity and environmental reporting, given that male board members consistently outnumber their female counterparts, (Rabi, 2019)). Legislative measures in Europe, which require 40% of board members to be female, alongside Nigeria's designated government roles for women in the Ministry of Finance, clearly illustrate this point, (Federal Reporting Council of Nigeria, 2018).

Firm size refers to the scale or reach of a business entity. It is usually quantified by various factors, including the number of employees, overall assets, market capitalization (the value of all outstanding shares), revenue or sales, and profit or net income. The size of a firm can greatly influence its operations, strategy, and performance, which includes aspects such as economies of scale, market power and authority, access to resources and funding, organizational complexity and bureaucracy, innovation and adaptability, risk management, and resilience. Firm size is widely recognized as a significant predictor of company performance Okafor, Egbunike, & Amahalu, 2022). The present business landscape emphasizes economies of scale, making a firm's size a crucial element for achieving success. This implies that larger firms may have the capacity to attain cost leadership over their smaller counterparts. Firm size is viewed as a crucial resource for creating a sustainable competitive edge in terms of profitability and market presence. Additionally, firm size can be defined through other metrics such as total assets, total investment, and net value. Thus, firm size significantly affects both firm performance and valuation, whether directly or indirectly.

EMPIRICAL REVIEW

Almashhadani & Almashhadani (2023), examined the relationship between board of directors' characteristics and environmental disclosure in manufacturing firms within developing countries, using data from companies listed on stock exchanges. The research focused on some dimensions of corporate governance mechanisms, which include; internal control committees, board size, foreign ownership, and board independence. Furthermore, the study recommends measuring the level of environmental disclosure to meet its goals. The research relied on panel data to evaluate the hypotheses put forth. The paper revealed that most prior studies indicate that the level of environmental transparency in developing countries remains relatively low.

Oladeji & Olutola, (2022), assessed the social and environmental effects on the financial performance of selected listed cement manufacturing companies in Nigeria. The study covers a decade, from 2011 to 2020, and uses a sample of three (3) listed cement manufacturing firms in Nigeria. The empirical findings revealed a significant relationship between social and environmental disclosure on financial performance of listed manufacturing companies in Nigeria. However, the study domain is manufacturing companies therefore, it may be difference from the oil and gas companies in Nigeria.

On the other hand, Agyemang et al. (2020), conducted an examination on how board composition affects environmental disclosure within the Chinese mining sector. The study's results showed a clear direct correlation between board size and the degree of environmental disclosure undertaken by these mining entities. Additionally, a positive relationship was found between behavioural qualities linked to board meetings and environmental disclosure, alongside a negative but weak correlation between environmental disclosure and the presence of foreign nationals as board members.

Sang, Kingori, Naibei, and Kipkosgei (2019) observed in their study in Kenya that boards with better-qualified financial directors tended to disclose more environmental information, although not as much as boards that were more independent. In his examination of industrial companies in Jordan. Rabi, (2019). applied regression analysis to determine the effect of board size on environmental information disclosure. The findings indicated a significant influence of board size on environmental disclosure practices in the Jordanian context. It is important to note that Jordan has a different regulatory environment compared to Nigeria, and the study looked at a possibly wider four-year period.

Relating to Sustainable Development Goals (SDGs)

Environmental disclosure is crucial for mitigating adverse environmental effects and advancing company sustainability initiatives. Transparent disclosure of environmental data enables stakeholders to hold firms accountable for their ecological impact, in accordance with the goals of SDG 12 (Responsible Consumption and Production). This study promotes the voluntary sharing of environmental information by firms, aligning with attempts to address climate change as highlighted in Sustainable Development Goal 13 (Climate Action). The focus on corporate governance places of interest the position of ethical and responsible business practices, which correspond with SDG 16 (Peace, Justice, and Strong Institutions) by fostering enhanced oversight and adherence to environmental standards. This study emphasises the imperative of incorporating sustainable practices within corporate governance structures, crucial for attaining long-term sustainability objectives.

Theoretical Framework

Numerous theories exist that elucidate the relationship between board structures and environmental disclosures. Nonetheless, this study concentrated on agency theory, stakeholder theory, and legitimacy theory.

Agency Theory. According to Jensen and Meckling (1976), this theory argues that the separation of ownership from control results in a conflict between the interests of managers and those of the owners. Consequently, the board of directors must diligently oversee managerial decisions to safeguard shareholders' interests. The fundamental concept of agency theory is that managers tend to act in their self-interest, often neglecting the concerns of shareholders. The theory further suggests that well-structured contracts, which clearly define the rights of both agents and principals, can mitigate the agency dilemma. It is also proposed that agency issues are more likely to arise when the board is actively engaged. Based on agency theory, the board of directors is crucial in shaping the organization's governance structures and overall management.

Stakeholder Theory. Freeman developed this notion in 1984. The theory asserts that businesses have stakeholders, which are individuals and organizations that, due to their operations, have either suffered harm or are benefiting from them. It is important to consider these individuals and groups, as companies do not exist in a vacuum. An expansion of Freeman's argument suggests that the creation of stakeholder theory aimed to generalise the notion that stockholders possess unique claims to the company. Stakeholders have the right to make demands, which the organization should honour. However, society at large may not always share the concerns of stakeholders; instead, one or more stakeholder groups may find them of interest. According to the stakeholder's hypothesis, agents are accountable to the shareholders, but companies are accountable to the stakeholders.

Legitimacy Theory. Suchman (1965), portraying an organization's willingness to act freely and consider the society in which it operates, as the foundation for this study. The theory elucidates the voluntary nature of corporate governance, a topic that is currently generating significant debate and conflict regarding environmental safety. A legitimate theory contends that businesses should respond by increasing their legitimacy and value by providing customers with what they want, but not by coercing them. Legitimacy theory explains a company's battle to conduct its operations and activities in a way that does not negatively affect the community in which it operates, (Acar, Caliyurt, & Zenin-Karaibrahimgt, 2020). A social compact between a corporation and society, (Solikhah, Yulianto, & Suryani, 2020). Companies must uphold social norms and values, think about how their activities will benefit society, minimize any negative impacts, and take responsibility for any harm they may have caused to be considered legitimate, (Jamang, Joseph, & Said, 2020). This study is based on the legitimacy theory, which describes the company's readiness to act freely and consider the society in which it works. The theory best explains the study of corporate governance, which is concerned with the company's decision-making, and environmental disclosure, which is generating a lot of discussion and conflict over the environment's safety and is likewise of a voluntary nature. Legitimacy theory is a widely used framework in social and environmental accounting particularly in studies examining corporate environmental disclosures.

METHODOLOGY

This research employed an ex-post facto design analysed in what way board structures effect environmental disclosure in oil and gas companies in Nigeria. The population of the study included fifty (50) oil and gas companies that were listed on the Nigerian Exchange Group (NGX) as of December 31, 2024. The research used purposive sampling method, only 30 companies fulfilled the data criteria needed to compute the metrics for board structure and environmental disclosure index for the years 2020 to 2024. The research adopted a quantitative approach, gathering secondary data through content analysis of the annual financial reports of the selected oil and gas companies in Nigeria for the period of five (5) years ranging from 2020 to 2024.

Table 1: Variables Measurement

Variables	Symbol	Measurements
Dependent Variable		
Environmental Disclosure Index	ENDI	An index score of the extent of company environmental disclosure based on GRI framework. (Abedalrazzak, Ghaleb, & Abdel, 2024).
Independent Variables		
Board Size	BSIZ	Total number of directors on the board
Board Independent	BIND	Number of non-executive directors divided by the total numbers of the directors on the board
Board Gender Diversity	BGED	A score based on the percentage of female directors and other diversity factors
Moderating Variables		
Firm Size	FIZE	Natural log of total assets (Uyagu et al., 2017)

Source: The Authors (2025)

Model Specification

The GRI-G4 framework was utilized to determine the scores. A total of 50 items related to environmental disclosures across governance, social, environmental, and economic pillars were recognized. A binary scoring approach was employed, where each disclosure item received a dummy weight of "0" for absence in the report and a weight of "1" for presence in the report. The total scores for each pillar were calculated and represented as percentages. To examine the moderating effect of firm size on the link between board structure and environmental disclosure, three steps based on Baron and Kenny (1986) multiple regression models were implemented. Correlation analysis was conducted to identify the relationships among the study variables, revealing both the direction and extent of these relationships. The Baron and Kenny (1986) models used were as follows: -

$$ENDI_{it} = \beta_0 + \beta_1 BDST_{it} + \varepsilon_{it} \dots \dots \dots (i)$$

$$ENDI_{it} = \beta_0 + \beta_1 BSIZ_{it} + \beta_2 BIND_{it} + \beta_3 BGED_{it} + \beta_4 FSIZ_{it} + \varepsilon_{it} \dots \dots \dots (ii)$$

Where:

ENDI = Environmental Disclosure Index

BDST = Board Structure

BSIZ = Board Size

BIND = Board Independent

BGED = Board Gender Diversity

FSIZ = Firm Size

β_0 = intercept or constant

$\beta_1, \beta_2, \beta_3, \beta_4, \& \beta_5$: are regression coefficients

ε : is the error term; i is Firms

t : is time frame

RESULTS AND DISCUSSIONS

The following are the descriptive statistics, pairwise correlations, normality test, heteroskedasticity test, multicollinearity test and regression results of the study were discussed.

Table 2: Descriptive Statistic

Variables	Obs	Mean	Std Dev.	Min	Max
EVDI	150	0.282	0.100	0.04	0.61
BSIZ	150	8.626	2.274	4.00	7.00
BIND	150	5.284	3.861	4.00	9.00
BGED	150	0.371	0.286	2.00	4.00
FSIZ	150	7.948	3.545	7.12	9.60

Source: STATA 14 Output (2025)

The Table 2 above shows a pooled result of the descriptive statistics on an annual basis over a five-year period from 2020 to 2024. Each variable underwent analysis with 150 observations totalling 4,690 data points. The environmental disclosure index (ENDI) achieved an average score of 0.282, reflecting the level of environmental information disclosed. The variation in the environmental disclosure index, denoted by the value of 0.100, indicates that the deviation from the mean is low, which may be attributable to the limited environmental disclosures from certain oil and gas companies. The minimum and maximum values of 0.04 & 0.61, respectively, indicate lowest and highest scores for disclosed information among the selected oil and gas companies in Nigeria. Descriptive statistics of BSIZ among the sampled oil and gas companies reveal a mean score of 8.626, signifying the average number of directors on the board, alongside a standard deviation of 2.274 that suggests relatively low variation in board size across the sampled companies. For board independence (BIND), the mean score is 5.284, and the standard deviation of 3.861 points to minimal dispersion. The minimum value of 4 indicates that some companies have as few as four directors on their boards, while the maximum score of 9 suggests that at least one company has that many independent directors. Regarding board gender diversity (BGED), which measures the proportion of female directors and other diversity factors, the mean score is 0.371, meaning that, on average, approximately 37.1% of the directors are females. The standard deviation of 0.286 indicates limited variation around the mean. The minimum value of 2 confirms the presence of at least one female director, whereas the maximum value of 4 indicates a representation of female directors and other diversity factors throughout the study period. The descriptive statistics for the moderating variable, firm size (FSIZ), reveal a mean value of 7.948. The standard deviation of 3.545 shows that the distribution of company size is centred around the mean. The smallest log value of 7.12 indicates that the oil and gas company with the least total assets was ₦7.12 billion, while the maximum log total assets value of 9.6 means that at least one oil and gas company possess ₦9.6 trillion in total assets.

Table 3: Pairwise Correlations

Variables	ENDI	BSIZ	BIND	BGED	FSIZ
ENDI	1.000				
BSIZ	0.195	1.000			
BIND	0.367*	-0.205	1.000		
BGED	0.339*	0.328*	0.223	1.000	
FSIZ	0.426*	-0.097	0.113	-0.233	1.000

Source: STATA 14 Output (2025) *** p<0.01, ** p<0.05, * p<0.1

Table 3 above shows pairwise correlation that ENDI has direct association with BSIZ though not significant as shown by the coefficient 0.195 at 5% significance level. ENDI has a direct and significant link with BIND as shown by the value of 0.367. ENDI is also found to have direct and significant link with BGED as recorded by 0.339 coefficient. ENDI has a positive and significance correlation with FSIZ with $r=0.426$ at 5% level of significant. It can be seen that the dependent variable and control variable are directly correlated with the independent variables.

Table 4: Normality of Residual Test

Variables	Obs	Pr(Skewnes)	Pr(Kurtosis)	adj_chi2(2)	Prob>chi2
Residual	150	0.5016	0.0002	11.67	0.0029

Source: STATA 14 Output (2025)

The result gotten from both the skewness and kurtosis for the residual displays that the remaining is normally distributed at 1% level of significance. This therefore means that the OLS normality assumptions holds and the intercept can be discussed. As it can be seen there is no much randomness of the variation in the residual on the regression estimation. Therefore, the intercept remains unaffected.

Table 4.4 Heteroskedasticity Test

Dependent variable	Chi2(1)	Prob> Chi2	Null (Ho)
ENDI	2.95	0.0858	Rejected

Source: STATA 14 Output (2025)

Note: Ho (Null) = Homoscedasticity;

Table 5 shows the p-value of 0.0858 predicts that there is no heteroskedasticity problematic since $p>0.05$. This implies that there is constant variance assumption of the OLS estimator.

Table 6: Multicollinearity Test

Table 6: Multicollinearity Test

	VIF	1/VIF
BSIZ	1.671	.598
BIND	1.388	.721
BGED	1.208	.828
FSIZ	1.444	.692
Mean VIF	1.423	.

Source: STATA 14 Output (2025)

Table 6 confirm the absence of multicollinearity, as indicated by the tolerance values ranging from 0.598 to 0.83, substantially exceeding the threshold of 0.1. Similarly, the Variance Inflation Factor (VIF) falls within the range of 1.208 to 1.671, well below the threshold of 10.

Table 7: Regression Result of Board Structures and Environmental Disclosure

Variable	Coefficients	Robust Std Error	T-test	P > t
Constant	16.2762	7.0390	1.196	0.241
BSIZ	-0.1704	0.0903	-1.887	0.069
BING	0.2673	0.1802	1.483	0.019
BGED	0.2031	0.8820	0.230	0.029
FSIZ	0.8874	0.4991	1.778	0.000
R-Squared	0.3371			
Adjusted R-squared	0.5154			
S.E. of regression	15.3570			
Sum squared residual	33375.2			
Log likelihood	-3214.15			
F-statistic	4.92545			
P-Value	0.0000			
Dependent Variable: ENDI Predictors: BDST Sample: 2020-2024 Periods included: 5 Observations: 150				

Source: STATA 14 Output (2025)

The procedure entailed testing the effect of board structures on environmental disclosure, and the controlling variable was measured by firm size. The adapted model was expressed as follows:

$$ENDI_{it} = \beta_0 + \beta_1 BSIZ_{it} + \beta_2 BIND_{it} + \beta_3 BGED_{it} + \beta_4 FSIZ_{it} + \varepsilon_{it} \dots \dots \dots (ii)$$

Table 7 shows the relationship between board structures and environmental disclosure of oil and gas companies in Nigeria. Board size (BSIZ) demonstrated a negative and insignificant relationship, with a coefficient of -0.1704 and a p-value of 0.069. Board independence (BIND) revealed a positive significant correlation by coefficient of 0.2673 and a p-value of 0.019. Board gender diversity (BGED) also showed a positive and significant effect by 0.2031 and a p-value of 0.029. The research findings suggest that board structure serves as a significant predictor of environmental disclosure for listed oil and gas companies, ($\beta=16.2762$, $p<0.05$). The general model was statistically significant. The adjusted R-squared (Adjusted R^2) value, which measures the proportion of variation in the dependent variable explained by the independent variables, was reported as 0.5154, with $F=4.92545$ and a p-value of 0.0000 respectfully. Overall, the model's results indicate a statistically significant relationship between board structure and environmental disclosure among listed oil and gas firms in Nigeria. Firm size (FSIZ), in relation to board structure measured by board size, board independence, and board gender diversity (BSIZ, BIND, & BGED), significantly predictions environmental disclosure. The study findings indicated that firm size controls the relationship between board structures and environmental disclosure. This suggests that, a bigger oil and gas companies, in terms of asset base, tend to engage in more environmental disclosure activities compared to their smaller counterparts with minor asset bases. Furthermore, the results indicated that older firms, regarding their incorporation, were relatively slow to adopt environmental disclosure practices, despite having larger asset bases. Conversely, oil and gas companies incorporated more recently were actively engaged in environmental disclosure. Based on these findings, the null hypothesis of the

study was rejected. Thus, it can be concluded that board structures significantly affect environmental disclosure among selected oil and gas companies in Nigeria. These findings align with early studies by Iliemena, Amedu, & Uagbale-Ekatah (2023); and Andreas, Obeiteh, Ridzwana, & Zaidi (2017), which discovered a considerable and positive correlation between leverage and the extent of environmental disclosure. The coefficient analysis shows that, overall, firm size has a positive and significant effect on environmental disclosure of selected oil and gas companies in Nigeria.

SUMMARY, CONCLUSION AND RECOMMENDATIONS

This research revealed the effect of board structures on environmental disclosure of selected oil and gas companies in Nigeria. The results revealed that, board size, independence, and gender diversity positively effect environmental disclosure. The importance of strong governance structures in promoting transparency is highlighted by the observation that environmental disclosure levels rise with larger firm sizes. A legitimate theory asserts that businesses should enhance their legitimacy and value by meeting customer demands rather than through coercion. Investors play a vital role in a company's existence. They effect the development and execution of corporate policies, firm size, and the organization's dedication to good corporate social responsibility, environmental management, and economic progress. The findings of this study further stress the requirement for comprehensive environmental transparency among Nigeria's listed oil and gas companies, alongside the importance of stakeholder networks. Management and the entire organization must recognize the benefits of engaging in sustainability reporting. Managers should also appreciate that environmental disclosure can act as a promotional tool for the organization, serving as a resource for customers, current and potential investors, and other interested parties. Consequently, investors can gain from making investment choices based on the environmental disclosures prepared and issued by corporate governance.

The findings indicate that companies with well-structured boards are more inclined to undertake extensive environmental reporting. Organizations characterized by weak board structures and increased leverage tend to show a bigger obligation to environmental disclosure. This trend is vital for aligning corporate practices with the sustainable development goals, particularly SDG 12 and SDG 13. This study recommends that oil and gas companies in Nigeria should be urged to appoint more directors with backgrounds in accounting, finance, or business, as this could enhance corporate strategies that improve the disclosure of environmental matters in the company's annual reports. These directors are believed to possess the necessary expertise and capability. Furthermore, the focus is on oil and gas companies, yet there are other industries in Nigeria where corporate governance practices could substantially influence environmental reporting. The study recognizes its limitations, which include dependence on a restricted range of corporate governance indicators and the emphasis on a specific subset of oil and gas companies. To enhance the understanding of environmental reporting practices, it is crucial to broaden the research scope and validate these findings across various sectors and governance frameworks.

Practical and Policy Implications

To enhance environmental accountability, Nigerian oil and gas companies must establish more rigorous environmental disclosure policies. To foster a culture of sustainability, policymakers should advocate for frameworks that enable transparent reporting and robust governance structures. This research is relevant to a diverse array of stakeholders who are involved in environmental reporting, including policymakers, non-governmental organisations, management teams, green investors, lenders, academics, researchers, and practitioners. The insights may serve as a resource for global and international accounting organisations as they establish environmental disclosure standards.

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IMPACT OF ENVIRONMENTAL, SOCIAL AND GOVERNANCE FACTORS ON CORPORATE VALUATION

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Abstract

This paper investigates the relationship between Environmental, Social, and Governance (ESG) factors and corporate valuation. The increasing importance of ESG considerations in corporate strategy and investment decisions has spurred research into their impact on firm value. This study is conceptual in nature and it identifies key theories, such as stakeholder, legitimacy theory and Resource Based View, that underpin the relationship between ESG performance and corporate valuation. The paper develops a conceptual framework to explain how ESG practices contribute to financial performance and valuation, providing insights into the significance of ESG factors for corporate managers and investors. This paper introduces a conceptual framework that links ESG factors to corporate valuation. It emphasizes the importance of integrating non-financial factors into corporate finance models and provides insights into how these factors can contribute to long-term business success. The paper concluded that inclusion of ESG factors in corporate valuation models represents a significant shift towards more sustainable and socially responsible business practices. Through an extensive literature review, this paper also highlights existing gaps in knowledge and proposes future research directions.

Keywords:

Environmental factors,
Social factors, Governance
factors, Corporate valuation,
ESG, Corporate finance

1.0 Introduction

Environmental, Social, and Governance (ESG) factors have become integral to modern corporate finance, influencing decision-making at all levels of business operations. ESG considerations are now seen not just as ethical imperatives, but also as strategic components that can directly impact a company's financial performance and long-term sustainability. The growing importance of ESG factors in the corporate world reflects a broader shift in how businesses approach their role within society, as well as how they manage their internal and external relationships.

Environmental factors refer to the sustainable practices that businesses adopt to minimize their impact on the planet. In the context of corporate finance, environmental responsibility involves reducing carbon emissions, managing waste effectively, and utilizing renewable energy sources. As global concerns about climate change, resource depletion, and pollution intensify, companies are under increasing pressure to demonstrate environmental stewardship (Eccles & Klimenko, 2019).

From an investor's perspective, firms that proactively address environmental concerns are often seen as lower-risk investments because they are less likely to be penalized by regulations, face costly environmental disasters, or experience reputational damage. As a result, investors are increasingly incorporating environmental factors into their investment strategies, viewing companies with strong environmental performance as more resilient in the long run (Krüger, 2015).

Social factors pertain to a company's relationships with its employees, customers, suppliers, and the broader

community. Corporate social responsibility (CSR) practices such as fair labor practices, diversity and inclusion efforts, and community engagement play a significant role in shaping a company's social profile. Companies that prioritize social equity by ensuring fair wages, promoting diversity, and engaging in charitable activities are often viewed as more ethical and socially responsible (Lueneburger & Gable, 2017).

Investors are increasingly recognizing that a company's social practices can impact its financial outcomes. Firms that maintain positive relationships with their stakeholders are likely to experience enhanced customer loyalty, reduced employee turnover, and better access to capital. Social factors can also mitigate reputational risks. For example, companies that embrace diversity and ensure good labor conditions are less likely to face backlash from consumers or regulators, making them more attractive to investors looking for stable, long-term returns (Eccles & Klimenko, 2019). Moreover, social engagement enhances a company's ability to attract and retain top talent, which in turn can contribute to increased innovation and financial performance.

Governance refers to the way a company is managed and controlled, including the structure and composition of its board of directors, executive compensation policies, shareholder rights, and transparency in decision-making. Strong governance practices help ensure that a company is operating ethically and responsibly, while also fostering accountability and risk management (Shleifer & Vishny, 1997). Companies with strong governance structures are more likely to avoid corruption, fraud, and mismanagement, which can lead to significant financial losses and reputational damage.

Good governance is particularly crucial in the eyes of investors, as it offers a safeguard against poor management and financial misreporting. Investors often seek companies with independent boards, clear ethical standards, and transparent reporting practices because these companies are more likely to make decisions that protect shareholder value and foster long-term success. Moreover, companies that exhibit high governance standards are less likely to engage in risky behavior that could jeopardize their financial health (Fama & French, 2018). As consumer preferences continue to evolve toward sustainability and ethical practices, businesses that align with these values are likely to see increased demand for their products and services.

The adoption of ESG strategies is also reshaping investment trends. Investors are now looking beyond traditional financial metrics and incorporating ESG performance into their decision-making processes. This is evident in the rise of socially responsible investing (SRI), impact investing, and ESG-focused funds. As the demand for ESG-compliant investments grows, companies that demonstrate strong ESG performance are more likely to attract capital and benefit from lower cost of capital (Auer, 2019).

Furthermore, the growing market emphasis on ESG factors has led to the creation of new financial instruments, such as green bonds and sustainability-linked loans, designed to fund environmentally and socially responsible projects. These instruments provide companies with a way to access capital while simultaneously aligning with sustainability goals. As these financial products become more mainstream, they are likely to drive further integration of ESG factors into corporate decision-making processes (Mayer & Kuenzi, 2020).

Additionally, The effect of ESG factors on valuation may differ across industries, depending on sector-specific risks and opportunities. For instance, environmental factors may be more critical for energy-intensive industries, while social and governance factors might play a larger role in sectors like technology or finance. Understanding how these industry dynamics influence valuation is essential for tailoring ESG strategies.

2.0 Statement of the Research Problem

Despite the growing emphasis on ESG factors, there is limited consensus on their exact impact on corporate valuation. While some studies indicate that strong ESG performance leads to higher market valuation, others suggest that the relationship is more complex or even non-existent in certain contexts (Krüger, 2015). Moreover, there are a paucity of literatures on comprehensive models that incorporate all three ESG factors (environmental, social, and governance) and explain their collective impact on corporate valuation, for instance, studies by Adejola et al. (2024) examined how sustainability reporting affects the financial performance of Nigerian listed agriculture and natural resource companies. Using return on assets (ROA) as a substitution for corporate financial performance, the study's particular goals were to ascertain if reporting on economic and social sustainability had a consequence on the financial performance of the sampled industries.

The benefits of ESG integration may not be immediately evident, requiring a long-term perspective to evaluate its true effect on corporate valuation. Research is needed to distinguish between short-term fluctuations and long-term valuation impacts, particularly as market sentiment and regulatory environments continue to evolve.

3.0 ESG and Corporate Valuation

Adejola et al. (2024) examined how sustainability reporting affects the financial performance of Nigerian listed agriculture and natural resource companies. Using return on assets (ROA) as a substitution for corporate financial performance, the study's particular goals were to ascertain if reporting on economic and social sustainability had a consequence on the financial performance of the sampled industries. The annual reports of nine (9) chosen firms were the source of the data from 2014 to 2023. Using the E-Views statistical program, the panel least squares regression approach was used to assess the data. The result shows that the economic and social sustainability reporting have negative and irrelevantly impacted on financial performance. The study concluded that sustainability reporting had no substantial influence on the performance of Nigerian listed agriculture and natural resources firms.

Rouyan Chen (2024) studied *The Impact of ESG Performance on Corporate Value*. His studies revealed that This article analyzes literature in the international financial field related to ESG in recent years and explores the way ESG influences corporate value from the perspectives of impact, influencing mechanism, and heterogeneity. The aim is to provide insights into future research directions in this field. This article found that there are three impacts of ESG performance on corporate value: promotion, inhibition, or irrelevance. ESG performance mainly affects corporate value from four aspects: financing constraints, green innovation, corporate efficiency, and corporate risk.

Cai (2024) studied *Senior executive characteristics: Impact on ESG practices and corporate valuation Relationship*. The results indicate a robust positive relationship between ESG practices and corporate value. However, this relationship is moderated by the academic backgrounds of senior executives, who negatively influence it, and by male executives, who exert a positive moderating effect. Furthermore, this study reveals the variable impacts of ESG practices in different corporate settings, industries, and institutional frameworks. Moreover, it demonstrates how ESG practices boost corporate value through an enhanced reputation and increased government innovation subsidies.

Koczar et al (2023) studied *Tools for considering ESG Factors in Business Valuation*. Their hypothesis is considered that in the framework of business assessment, the influence of ESG factors should be taken into account by adjusting the cash flows of the enterprise and the discount rate as an indicator reflecting the risks of

obtaining (forming) these cash flows, while the risk accounting areas should be correctly divided in order to avoid double accounting.

Zhang et al (2023) studied Research on the Influence Factors of ESG Performance on Corporate Value Based on Digital Information Technology. The results highlight the pivotal role of information technology in the accurate and effective evaluation of ESG factors. Specifically, the study demonstrates a remarkable 65% accuracy in the determination of influencing factors, surpasses 80% in overall judgment precision, and achieves an impressive effectiveness exceeding 90% in the assessment of influence on corporate value.

Gil Cohen¹ (2023) studied The impact of ESG risks on corporate value. His studies revealed that the impact of environmental risks on the firm's valuation is not significant enough. Moreover, we found that while the “Beta” risk factor of the S & P500 carries environmental risks, it does not hold such risks for Nasdaq100 stocks, and therefore, we recommend strengthening the environmental education to investors and other financial industry participants.

Emmanuel et al. (2022) studied the association between sustainability reporting and financial performance of deposit money banks in Nigeria. Their research revealed a slight negative link among performance measures for Nigerian deposit money banks and SR. Additionally, their studies further reveal that the methods used for SR must differ between nations, and bank management in Nigeria should intensify and closely observe the height of investment to ensure compliance. One of the suggestions from their research was that SR has a major effect on financial success. On the disclosure checklist, only relevant data that raises performance indices should be included.

These inconsistencies point towards a more rigorous examination of influencing factors and moderators of the relationship. Additionally, with evolving reporting practices, regulations, and stakeholder expectations, the implications of newer evidence need analysis. This indicates gaps in establishing the business case for sustainability reporting based on empirical evidence. Thus, a need exists to systematically examine the existing body of studies on the issue and provide directions for addressing limitations to arrive at more constructive conclusions. The review aims to fill this research gap.

3.1 Theoretical Framework

Several theories and models have been developed to explain how ESG factors can influence a company's financial performance, reputation, and long-term viability.

3.1.1 Stakeholder Theory

Stakeholder Theory, introduced by Freeman (1984), posits that a company's success is not solely dependent on its relationship with shareholders, but also on its ability to manage relationships with all relevant stakeholders, including employees, customers, suppliers, and the community. According to this theory, companies should balance the interests of various stakeholders to achieve sustainable business success. Freeman's view was revolutionary because it challenged the traditional focus on maximizing shareholder wealth alone.

In the context of ESG, Stakeholder Theory suggests that companies that adopt ESG practices are better able to align their operations with the values and needs of key stakeholders. For example, firms that focus on environmental sustainability, fair labor practices, or community engagement can build stronger relationships with customers, employees, and suppliers. This, in turn, can enhance their reputation, loyalty, and overall

financial performance. By considering the interests of stakeholders beyond shareholders, companies can increase trust and, as Freeman (1984) argues, enhance their long-term success and stability.

3.1.2. Legitimacy Theory

Legitimacy Theory, as outlined by Suchman (1995), suggests that companies seek to operate in ways that are perceived as legitimate by society, in order to gain or maintain social approval. According to this theory, organizations must align their practices with societal values, norms, and expectations to ensure their continued existence and success. Companies that fail to do so risk facing public disapproval, regulatory challenges, or loss of consumer trust, all of which can negatively impact their reputation and financial performance.

In the context of ESG, companies that adopt sustainable environmental practices, engage in socially responsible actions, and demonstrate strong governance are perceived as legitimate by the public, investors, and other stakeholders. Suchman (1995) explains that legitimacy is a critical resource for companies because it facilitates access to capital, markets, and human resources. As societal expectations around ESG have evolved, companies engaging in sustainability efforts are seen as more legitimate, thereby enhancing their reputation and potentially improving market performance.

3.1.3 Resource-Based View (RBV)

The Resource-Based View (RBV), introduced by Barney (1991), is another theoretical framework that has been applied to the study of ESG and corporate performance. According to the RBV, companies gain competitive advantages by acquiring and effectively utilizing unique resources that are valuable, rare, inimitable, and non-substitutable. In this context, resources refer not just to physical assets but also to intangible resources such as brand reputation, organizational culture, and human capital.

When applied to ESG, the RBV suggests that firms that invest in strong ESG practices can develop intangible resources that are critical for their long-term success. For instance, a company that adopts environmentally friendly policies, promotes diversity and inclusion, or implements transparent governance mechanisms is likely to build a positive reputation, brand loyalty, and goodwill. These intangible assets are difficult for competitors to replicate and can provide a sustainable competitive advantage in the market.

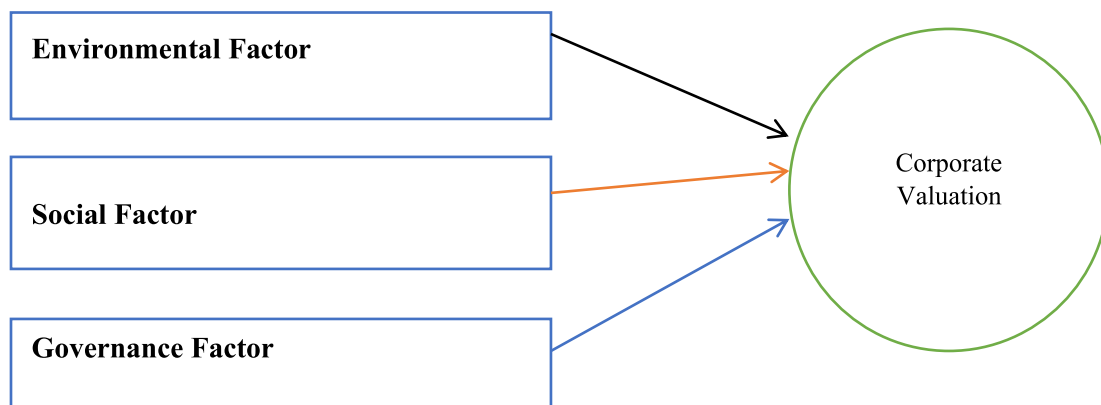
Barney (1991) argues that such resources can significantly contribute to a company's financial performance. For example, companies that invest in reducing their carbon footprint may not only reduce operational costs but may also be seen as attractive to investors who prioritize sustainability. Similarly, companies with strong governance and ethical practices may find it easier to access capital and attract customers who value corporate social responsibility. Thus, the RBV highlights that ESG factors are not merely a means of fulfilling regulatory or ethical obligations, but a strategic investment in resources that can enhance a company's competitive positioning and profitability.

This study is grounded in **stakeholder theory** and **legitimacy theory**, both of which suggest that firms that manage ESG factors effectively can build stronger reputations, reduce risks, and ultimately enhance their valuation. These theories will guide the development of the conceptual framework presented in this paper (Deephouse, 2000).

4.0 Conceptual Framework

Definition of Key Concepts

- **Environmental Factors:** This includes sustainability practices, such as reducing carbon emissions, managing waste, and utilizing renewable energy sources (Eccles & Klimenko, 2019).
- **Social Factors:** This refers to how a company manages its relationships with employees, customers, and the communities in which it operates. Social factors may include employee welfare, customer satisfaction, and corporate social responsibility initiatives (Lueneburger & Gable, 2017).
- **Governance Factors:** Governance relates to how a company is directed and controlled, including board structure, executive compensation, and business ethics. Strong governance practices foster transparency, accountability, and effective risk management (Clark, 2020).



Source: Developed by the Author

4.1 Relationships and Propositions

The proposed conceptual framework suggests that:

- **Environmental Performance:** Companies with strong environmental practices are likely to reduce operational risks (e.g., regulatory penalties, resource scarcity) and increase investor confidence, leading to higher valuation (Krüger, 2015).
- **Social Performance:** Companies that demonstrate social responsibility, including employee well-being and positive community engagement, can build a loyal customer base, reduce employee turnover, and attract socially conscious investors (Mayer & Kuenzi, n2020).
- **Governance Performance:** Firms with strong governance structures, including transparency, effective risk management, and ethical leadership, tend to mitigate risks, build trust with stakeholders, and improve long-term valuation (Shleifer & Vishny, 1997).

4.2 Theoretical Contribution

By offering a comprehensive framework, this paper contributes to the growing body of literature on ESG in corporate finance. It extends traditional valuation models by incorporating non-financial factors and demonstrating their value in enhancing corporate reputation and performance.

4.3 Practical Implications

For corporate managers, this framework emphasizes the importance of integrating ESG strategies into business models. Investors can use this framework to assess the long-term value of companies, moving beyond traditional financial metrics to include ESG factors that are likely to influence future growth and profitability (Fama & French, 2018). For instance Tesla's Financial results have grown significantly largely driven by growing Car

sales especially electric vehicle sales. The company's revenue and net income have been trending upwards. Tesla's ESG scores range from 0-100 with scores below the 50 deemed relatively poor and scores above 70 deemed good. Tesla scored 9.1 out of 10 on environmental grounds against an industry average of 6.5, this made up 30% of its total ESG scores. On social issues however, it ranked 1.4 compared to an average of 3.5 while on governance it scored 5.1 against an average of 3.2 (Yuxuan, Liu & Qian Pu, 2024).

Several industries and regions have seen demonstrable improvements in valuation due to a focus on Environmental, Social, and Governance (ESG) factors. Here are a few examples:

1. Renewable Energy Sector

Companies like NextEra Energy and Orsted have seen increased valuation as they transitioned to renewable energy. Investors and consumers increasingly favor companies that prioritize environmental sustainability, resulting in higher stock prices and stronger financial performance.

2. Financial Sector (Globally)

Banks and investment firms, including BlackRock, have begun integrating ESG criteria into investment strategies and product offerings. Their valuation has been boosted as investors increasingly seek ESG-compliant investment opportunities. There's a growing demand for sustainable investment options, and firms that focus on ESG factors can differentiate themselves while appealing to a broader base of investors.

3. Healthcare and Pharmaceuticals

Companies like Johnson & Johnson and Merck have seen improved market performance by focusing on both social and governance factors, including product safety, diversity, and ethical business practices. A strong focus on health outcomes, equitable access to medicine, and transparency in governance has made these companies more attractive to long-term investors.

4. Emerging Markets (Asia and Africa)

Companies in emerging markets, such as Tata Group in India, have been integrating ESG factors into their operations, focusing on sustainable practices and social equity initiatives. As global investors increasingly look to invest in emerging markets, those companies that demonstrate a commitment to ESG principles can attract foreign capital, increasing their valuation and market share.

5. Automotive Industry (especially electric vehicle manufacturers)

Tesla has seen a significant increase in valuation due to its focus on electric vehicles, clean energy solutions, and sustainable practices. As consumer demand for electric vehicles rises, companies in the auto sector that are investing in sustainable and eco-friendly alternatives are experiencing positive valuation shifts.

6. Real Estate (Urban Development and Green Buildings)

Real estate developers focusing on green buildings and sustainable urban development, such as Brookfield Properties, have seen improved valuations due to increased demand for sustainable and energy-efficient buildings. ESG-related factors like energy efficiency and eco-friendly construction are highly sought after in both residential and commercial real estate, leading to higher returns and stronger asset valuations.

5.0 Difficulties in Standardizing ESG Metrics

Standardizing Environmental, Social, and Governance (ESG) metrics faces several challenges:

1. Lack of Uniform Definitions: ESG factors are often defined differently across industries, regions, and

organizations. This inconsistency makes it difficult to create a universally accepted framework.

2. Diverse Reporting Standards: Multiple ESG reporting standards exist, such as the Global Reporting Initiative (GRI), Sustainability Accounting Standards Board (SASB), and the Task Force on Climate-related Financial Disclosures (TCFD), which can confuse stakeholders and lead to fragmented reporting.

3. Varying Data Availability: Companies may have different levels of data transparency, quality, and granularity. Small or private firms may lack the resources to collect or report comprehensive ESG data, leading to gaps.

4. Regional and Cultural Differences: ESG priorities can vary across countries, influenced by regulatory environments, cultural values, and economic conditions, complicating efforts to develop global standards.

5. Dynamic Nature of ESG Issues: ESG issues are constantly evolving, with new risks and opportunities emerging regularly. This makes it challenging to create static, universally applicable metrics.

6. Lack of Regulation: Although there is growing interest in ESG disclosures, regulations around ESG reporting are still nascent or fragmented. This leads to inconsistent approaches and voluntary adherence to reporting guidelines.

6.0 The potential trade-offs between short-term costs and long-term benefits of ESG investments.

The potential trade-offs between short-term costs and long-term benefits of ESG (Environmental, Social, and Governance) investments are important considerations for businesses. Below are some of the indications of these trade-offs:

The Potential Trade-offs Short-Term Costs Long-Term Costs

1. Financial Performance vs. Sustainable Growth

ESG investments often require significant upfront capital such as adopting green technologies, improving labor conditions or enhancing governance practices. These initiatives may reduce immediate profitability due to high implementation and operational costs. Over time, ESG investments can lead to sustainable growth by reducing risks related to environmental damage, regulatory penalties, and social backlash. Long-term benefits include enhanced brand reputation, customer loyalty, and access to new markets, all of which can drive stronger financial performance and competitiveness in the future.

2. Operational Efficiency vs Compliance and Risk Reduction

Adopting ESG practices may require changes in operations, including new systems, compliance measures, and employee training. These adjustments can lead to increased short-term operational expenses. In the long term, these investments in compliance and risk management can reduce exposure to financial penalties, litigation, and reputational damage, particularly in an increasingly regulated environment. ESG-focused businesses are also better positioned to manage systemic risks, such as climate change or social unrest, contributing to long-term stability and cost savings.

3.0 Shareholder Value Vs Stakeholder Value

Focusing on short-term shareholder returns, such as dividends or buybacks, can conflict with investments that prioritize broader stakeholder interests, including employees, communities, or the environment. ESG

investments may not deliver immediate financial returns to shareholders. A broader focus on stakeholder value—through improved employee well-being, community engagement, and environmental stewardship—can strengthen the company's reputation, reduce risks (e.g., labor strikes or environmental fines), and build a loyal customer base, which ultimately enhances long-term shareholder value.

The Potential Trade-offs	Short-Term Costs	Long-Term Costs
1. Financial Performance vs. Sustainable Growth	ESG investments often require significant upfront capital such as adopting green technologies, improving labor conditions or enhancing governance practices. These initiatives may reduce immediate profitability due to high implementation and operational costs	Over time, ESG investments can lead to sustainable growth by reducing risks related to environmental damage, regulatory penalties, and social backlash. Long-term benefits include enhanced brand reputation, customer loyalty, and access to new markets, all of which can drive stronger financial performance and competitiveness in the future
2. Operational Efficiency vs Compliance and Risk Reduction	Adopting ESG practices may require changes in operations, including new systems, compliance measures, and employee training. These adjustments can lead to increased short-term operational expenses.	In the long term, these investments in compliance and risk management can reduce exposure to financial penalties, litigation, and reputational damage, particularly in an increasingly regulated environment. ESG-focused businesses are also better positioned to manage systemic risks, such as climate change or social unrest, contributing to long-term stability and cost savings.
3.0 Shareholder Value Vs Stakeholder Value	Focusing on short-term shareholder returns, such as dividends or buybacks, can conflict with	A broader focus on stakeholder value—through improved employee well-being,
	investments that prioritize broader stakeholder interests, including employees, communities, or the environment. ESG investments may not deliver immediate financial returns to shareholders.	community engagement, and environmental stewardship—can strengthen the company's reputation, reduce risks (e.g., labor strikes or environmental fines), and build a loyal customer base, which ultimately enhances long-term shareholder value.

7.0 Limitations

The proposed framework is broad, and the influence of ESG factors on valuation may vary across industries and regions. Further empirical research is needed to validate the model and test its applicability in different market contexts (Eccles & Klimenko, 2019).

8.0 Conclusion

This paper introduces a conceptual framework that links ESG factors to corporate valuation. It emphasizes the importance of integrating non-financial factors into corporate finance models and provides insights into how these factors can contribute to long-term business success. The inclusion of ESG factors in corporate valuation models represents a significant shift towards more sustainable and socially responsible business practices. This paper contributes to understanding how companies can enhance their valuation by adopting robust ESG strategies.

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MODERATING EFFECT OF ORGANISATIONAL CULTURE THE RELATIONSHIP BETWEEN FORENSIC ACCOUNTING TECHNIQUES AND FRAUD DETECTION IN ANTI-GRAFT AGENCIES IN NIGERIA

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Abstract

Fraud has become increasingly widespread and deeply rooted within societies, businesses, and public sectors, adversely influencing a nation's economic growth and development, especially in the public sector domain. The aim of the study is to explore the moderating effect of organisational culture on the relationship between forensic accounting techniques and fraud detection in anti-graft agencies in Nigeria. The population of the study consist of two hundred and thirty-one (231) staff of EFCC and ICPC which was arrived using Yamane (1967) formula. Employing a purposive sampling technique. The study used primary source of data, this involve the use of questionnaires which were administered to EFCC and ICPC Staff members in Nigeria. Partial Least Square Structural Equation Model (Smart PLS 4) used for the analysis. The finding of the study reveal that organisational culture significantly moderate the relationship between forensic accounting techniques and fraud detection of anti-graft agencies in Nigeria. The Study recommended that forensic accounting techniques play a critical role in detecting fraud within anti-graft agencies in Nigeria. However, the effectiveness of these techniques is significantly influenced by organizational culture.

Keywords:

Organisational Culture,
Forensic Accounting
Technique, Fraud Detection

1.0 Background to the Study

Fraud has increasingly become widespread and deeply rooted within societies, businesses, and public sectors, adversely influencing a nation's economic growth and development (Villaescusa and Amat, 2022). The escalating trend of fraud and fraud-related incidents has garnered significant attention globally from academics, practitioners, and governments alike. The Global Economic Crimes Survey Report (2023) highlights a notable rise in fraud cases within organizations in Eastern Africa, with 63% of respondents from the region reporting fraud incidents over the past two years, compared to 46% globally. Eastern Africa reported higher prevalence rates for common crimes such as asset misappropriation, supply chain fraud, bribery and corruption, procurement fraud, and customer fraud. However, less common crimes, including tax fraud, government relief fraud, human resource (HR) fraud, and environmental, social, and governance (ESG) reporting fraud, were reported at lower rates in Eastern Africa compared to global averages. Furthermore, embezzlement-related cases decreased from 51 in 2021 to 36 in 2022; however, the associated revenue losses increased by 37%, rising from £28.5 million to £38.9 million in 2022. Similarly, investment fraud cases rose from 13 in 2021, with a total value of £12.5 million, to 19 in 2022, reaching a combined value of £181.8 million. Instances of advance fee fraud also increased, growing from 9 cases in 2021 with a total value of £5.6 million to 19 cases in 2022, valued at over £16 million.

Organizational culture refers to the values, norms, beliefs, attitudes, and assumptions that influence the behavior

and practices within organizations (Tianya, 2015). This concept aligns with Edgar Schein's organizational culture theory, which serves as a foundational framework for understanding how organizational culture moderates the relationship between forensic accounting techniques and fraud detection in Nigeria's anti-graft agencies. Schein's theory defines organizational culture as a set of shared basic assumptions developed by a group as it addresses challenges of external adaptation and internal integration assumptions that have proven effective enough to be imparted to new members as the standard way to perceive, think, and respond to these challenges.

It was against this background, this research therefore, examined whether or not organisational culture will improve the forensic accounting techniques on detecting fraud in anti-grafts agencies in Nigeria.

1.2 Statement of Problem

Fraud and related crimes have surged significantly in Nigeria, including payment fraud, Ponzi schemes, insolvency-related fraud, and banking fraud. Kasum (2015) points out that financial mismanagement has become a common issue in both the public and private sectors, with individuals exploiting their positions of authority to engage in fraudulent acts. Similarly, studies by Onurah and Ebimobowei (2014), Enofe, Utomwen, and Danjuma (2015), and Adebisi, Okike, and Yoko (2016) also highlight the increasing prevalence of fraud and fraudulent activities in Nigeria, suggesting that these acts have nearly become habitual. Despite efforts by agencies such as the Economic and Financial Crimes Commission (EFCC) and the Independent Corrupt Practices Commission (ICPC) to combat fraud and corruption within both private and public sectors in Nigeria, these problems continue to pose significant challenges. Mikail (2018) underscores that fraud and corruption have widespread consequences for the country's economic stability, governance, and public trust. As a result, forensic accounting is being increasingly recognized as a vital tool for addressing the growing financial and corporate fraud across various sectors of Nigeria's economy. Owojori and Asaolu (2013) emphasize that statutory audits have proven inadequate in preventing corporate fraud, and the rising frequency of such crimes has intensified the pressure on accountants and legal professionals to find more effective methods for detecting fraud in organizations.

Existing research has established a link between forensic accounting techniques and fraud detection, although the results are not consistent. For instance, studies by Ozili (2015), Bello (2020), and Aremu and Olayinka (2023) suggest a positive relationship between forensic accounting techniques and fraud detection, while findings by Enofe, Okpako, and Atube (2013), Tariq et al. (2013), and Oyedokun, Enyi, and Dada (2018) point to a negative connection. To address these discrepancies, organizational culture is proposed as a moderating variable that may influence or modify the relationship between forensic accounting techniques and fraud detection.

Research on the moderating impact of organisational culture in this context is limited. While these studies used techniques like ordinary least squares (OLS) regression and Chi-square, this study intends to evaluate the moderating effect of organizational culture on the relationship between forensic accounting techniques and fraud detection in Nigeria's anti-corruption agencies through Partial Least Squares (PLS) analysis.

1.3 Research Objective

The main objective of this study is to examine the moderating effect of organisational culture on the relationship between forensic accounting techniques and fraud detection in anti-graft agencies in Nigeria.

1.4 Research Question/ Hypothesis

To what extent does organisational culture moderate the relationship between forensic accounting techniques and fraud detection by anti-graft agencies in Nigeria?

H₀: Organisational culture has no significant effect on the relationship between forensic accounting techniques and fraud detection in Nigeria.

1.5 Significance

This study will offer valuable insights to a range of stakeholders, including government bodies, anti-corruption agencies, society, academics, pressure groups, civil society organizations (CSOs), and international bodies.

1.6 Scope and Limitation(s)

This study focused on the moderating effect of organizational culture on the relationship between forensic accounting techniques and fraud detection in anti-graft agencies in Nigeria. The study, conducted from 2020 to 2024, focused on the Independent Corrupt Practices and Other Related Offences Commission (ICPC) and the Economic and Financial Crimes Commission (EFCC). The study focus only on Nigerian anti-graft agencies, limiting generalizability, and also cross-sectional research design restricts understanding of long-term effects.

Literature Review

Forensic Accounting Technique

Forensic accounting technique, as described by Bologna and Lindquist (1995), are a combination of accounting, auditing, and legal expertise used to identify, investigate, and prevent fraudulent activities. Crumbley et al. (2013) note that these techniques encompass tools such as data mining, ratio analysis, and digital forensics to detect financial discrepancies and aid in legal proceedings. Okoye and Gbegi (2013) emphasize the critical role forensic accounting techniques play in uncovering fraud and promoting accountability, particularly in corrupt environments. The Association of Certified Fraud Examiners (ACFE) (2010) defines forensic accounting as the application of accounting expertise to matters involving potential or actual civil or criminal litigation. This includes tasks such as applying generally accepted accounting and auditing standards, assessing damages or lost profits, evaluating internal controls, and addressing fraud. Ariokiasamy and Cristal (2016) also describe forensic accounting as the use of investigative and financial knowledge to resolve unresolved matters through evidence-based methods. The term "forensic" is applied to accounting in legal contexts, referring to materials used in legal proceedings (Adebisi, Okike, & Yoko, 2016).

Fraud Detection

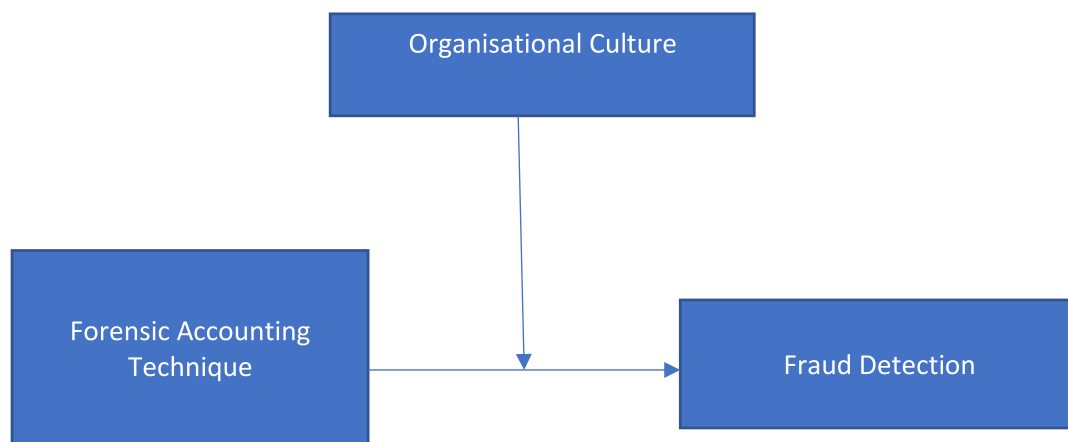
Fraud detection refers to the systematic identification of fraudulent activities through analytical and investigative methods designed to uncover financial deceit (Singleton et al., 2006). Wells (2011) emphasizes techniques such as data analysis and forensic accounting, while Albrecht et al. (2012) underscore the importance of identifying red flags and anomalies in financial data to combat financial crimes. Fraud, which is defined as illegal or deceitful conduct for personal or financial gain, is prohibited in Nigeria under Section 419 of the Constitution. Embezzlement remains a significant issue, with reports showing substantial financial losses. The Punch newspaper, citing the US Commerce Department, estimates that theft accounts for 40% of public procurement funds. Between 1960 and 2019, Chatham House reported \$582 billion in embezzled funds, while Trust Africa and NEITI estimate that N11 trillion was misappropriated between 1999 and 2019.

Organisational Culture

Schein (2010) defines organizational culture as the shared values, beliefs, and assumptions that guide employee behavior and shape their attitudes toward ethical practices. Hofstede (2011) sees it as the collective mental programming that differentiates one organization from another, influencing how employees approach fraud detection and prevention. Denison and Mishra (1995) highlight the significant impact of organizational culture

on performance, including its role in identifying and preventing fraud.

Figure 2.1 Conceptual Framework



Source: Research Design, (2025)

Review of Empirical Studies

An organisation's capacity to get and hold onto resources may be impacted by its size alone in a number of ways (Josefy et al., 2015). The benefits and drawbacks of large and small groups have been debated in research (Reino and Vadi, 2010). Smaller companies are thought to be less bureaucratic and therefore more adaptable to changes in the outside world (Hannan and Freeman, 1984). But huge organisations have access to more complex and varied resources, talents, and abilities, which makes them more capable of being, say, inventive (Cáceres et al., 2011). Larger organisations might be less susceptible to resource allocation limits since they are less likely to be subject to restrictions on resource distribution (Lin et al., 2007). Additionally, businesses may have access to greater internal resources as they grow in size.

Furthermore, larger organisations can have greater resource slack, or excess resources (Josefy et al., 2015), which would allow them to allocate more funds for employee well-being. Salin (2008) discovered that the size of an organisation affected the organisational responses that were chosen to address bullying in the workplace. The results showed that the usage of transfer as an organizational reaction to workplace bullying was positively correlated with the size of the organization. Additionally, there was a positive relationship found between the size of the organization and the probability of avoiding dealing with the bullying; the greater the organization, the higher the probability of avoidance. However, it is reasonable to assume that larger companies would be less open, making it simpler to cover up wrongdoing. For instance, bigger firms might offer anonymity to bullies, potentially lessening the risks and expenses for the offender (Hearn and Parkin, 2001).

In 2023, Oyedokun carried out a study on the theories and factors that influence forensic accounting methods. The study looked at the factors that influence forensic accounting methods. Both primary and secondary sources provided the data for this study's analysis. A purposeful selection process was used to choose the 120 responders, who include forensic accountants, fraud auditors, bankers, forensic investigators, financial aficionados, and academics. A Google Form was used to administer an online questionnaire that collected data for this investigation. The analysis using the Google Form was used. The data that already existed, gathered by seasoned experts and scholars, was known as secondary data. Bar charts, explanations, and pie charts were used to display the data. According to the report, the type of fraud being looked at, including its complexity, stages, and degree of

criminality, what methods to use in forensic investigations are also determined by other elements like criminal evidence, the examiner's training and experience, organisational policies, and the associated hazards, although data mining has been shown to be the most effective tool for investigating fraud, forensic accountants, forensic lawyers, and other comparable parties are urged to combine two or more strategies. This study suggests that in order to regularly analyze, reinforce, and reevaluate records and internal control systems, stakeholders should contact, hire, and retain the services of a forensic accountant. Employees should get training from their organisations on ethical concerns, the legal system, fraud prevention, and the nature and breadth of financial crimes. Additionally, Hendieh, Schneider, and Sakr (2023) conducted a study on the identification of fraud and External auditors are needed to play a crucial role in reducing or minimizing them, as the likelihood of identifying fraud remains high. There is an urgent need to use forensic accounting, but laws and regulations need to be improved in addition to it in order for it to be useful in preventing or reducing fraud. The study used descriptive survey research methodology. External auditors in Lebanon provided questionnaires for the collection of data, which were then subjected to basic linear regression analysis. One limitation is that the study's focus is on external auditors. Future research could address this by repeating the same study in several public or private companies, or by obtaining feedback from forensic specialists and internal auditors. To increase the sample size, that is. The report suggested that preventive measures be taken to address these worldwide fraud threats.

Furthermore, in 2022, Amaka carried out a study on the use of forensic accounting as a tool for fraud detection and prevention in corporate organisations. The study used data from 15 Nigerian companies that were selected based on their level of forensic accounting expertise. The sample size of (150) replies was determined by a straightforward random sampling of 15 professionals from each firm, comprising auditors and accountants from the 15 firms in Nigeria. The White-collar crime hypothesis was applied in this study, and data were gathered from the respondents using a standardized questionnaire that included questions and a Likert scale.

Chi-square and exploratory data analysis (respondent demographic statistics) are the statistical tools utilized. According to the study, forensic accounting may be able to assist in identifying and stopping fraud in the companies under investigation. According to the survey, businesses should hire forensic accountants to help them detect fraud and lower the incidence of financial crimes in Nigeria. More precisely, when appropriate culture is in place, it becomes easier to design and implement effective organizational culture.

Theoretical Framework

Organisational Culture Theory

Organisational Culture Theory was developed by Edgar Schein in late 1970s. Organisational Culture Theory is a details studies within firm studies that explain the complex shared of values, beliefs, assumptions, norms, practices, and social dynamics within an organisational environment. This theoretical perspective contends that organisations develop a unique culture over time, shaped by the collective experiences, history, and interactions of its members. The theory posits that this organisational culture significantly influences employee behavior, decision-making processes, and overall organisational effectiveness.

Key components of Organisational Culture Theory include the understanding of shared values and beliefs, which serve as the foundation of the organisational culture. These shared elements guide and shape individual and collective behavior, creating a sense of identity and unity among organisational members. Implicit assumptions within the organisational culture are considered fundamental, influencing how individuals perceive their roles, interpret information, and make decisions.

Norms and practices, integral aspects of organisational culture, contribute to the social fabric of the organisation.

The theory emphasizes that these shared norms and practices influence how work is conducted, how conflicts are resolved, and how individuals collaborate. Additionally, Organisational Culture Theory underscores the role of culture in sense-making, highlighting how shared values and beliefs help individuals interpret events and experiences within the organisational context.

The theory also acknowledges the significance of social integration and collaboration fostered by a strong organisational culture. It asserts that a cohesive culture promotes a sense of community and shared purpose among organisational members. Moreover, Organisational Culture Theory recognizes the role of culture as a control mechanism, influencing the development and enforcement of organisational policies, procedures, and ethical standards.

In summary, Organisational Culture Theory provides a holistic perspective on the multifaceted aspects of organisational life. It serves as a lens through which scholars and practitioners can analyze, interpret, and understand the complex web of cultural elements that shape behavior, decision-making, and interactions within an organisation. This theory is instrumental in exploring how organisational culture influences various organisational outcomes, including employee satisfaction, performance, and the effectiveness of strategic initiatives.

Fraud Hexagon Theory

The Fraud Hexagon Theory, introduced by Vousinas (2019), represents the latest and most advanced framework for detecting fraud, adding a new element: collusion, as the sixth factor. This theory, which has gained significant attention, identifies six key elements: stimulus, opportunity, rationalization, collusion, capability, and arrogance, each playing a role in explaining the occurrence of fraudulent behavior in organizations. Fraudulent behavior results from the interaction of these factors.

Fraud hexagon theory underpins this research by: explaining the diverse and interrelated factors that drive fraud in anti-graft agencies; guiding the choice and application of forensic accounting techniques suited to addressing those factors; supporting the inclusion of organisational culture as a moderator that strength and direction of the relationship between forensic accounting techniques and fraud detection.

This theory provides the foundation for understanding how and why forensic accounting interventions may succeed or fail in different organisational environment, especially within the Nigerian anti-graft context.

3.0 Methodology

The study area for this research paper is Nigeria, the population targeted for this study consists of 548 employees working within Nigeria's Economic and Financial Crimes Commission (EFCC) and the Independent Corrupt Practices and Other Related Offenses Commission (ICPC) (ICPC & EFCC, 2024).

Table 3.1: Population of the Study

Table 3.1: Population of the Study

Names of the Agencies	Number of Staff
EFCC	300
ICPC	248
Total	548

Source: Authors Computation (2025)

The data for this study were from primary source. This involve the use of questionnaires which were administered to EFCC and ICPC Staff members in Nigeria.

The study's sample size was determined using Yamane's (1967) formula. A Judgmental or Purposive sampling technique was employed, where the researcher deliberately selects specific groups or individuals as samples due

to their relevance to the study (Adefila, 2023). This approach was used to choose between the Economic and Financial Crimes Commission (EFCC) and the Independent Corrupt Practices and Other Related Offenses Commission (ICPC) in Nigeria. Following this, the Simple Random Sampling technique was applied to select the respondents. Simple Random Sampling is the most basic form of probability sampling. To use this technique, the researcher must: i) create a numbered list of all units in the population from which the sample will be selected; ii) determine the sample size; and iii) select the required number of units using either a "lottery" method or a random number table (Adefila, 2024).

The Yamane (1967) formula

$$n = \frac{N}{1 + N(e)^2}$$

Where: n = Sample Size

N = Population

1 = Constant

e = Level of significance (0.05)²

$$\begin{aligned} \text{Hence, } n &= \frac{548}{1 + 548(0.0025)} \\ &= \frac{548}{2.37} \\ &= 231 \end{aligned}$$

Table 3.2: Sample Frame

S/N	Agencies	Target Population	Sample Size
1	EFCC	300	126
2	ICPC	248	105
Total		548	231

Source: Authors Computation (2025)

The study is a survey research and utilized structured questionnaires in generating the primary data. 5 Likert scale was used to measure the responses since this scale is being used by many in the field accounting and management research in general.

The study used three set of variables. These variables are independent variable, dependent variable and moderating variable. Description and measurement of the variables are given below in table 3.3.

Table 3.3 Summary of the Variables and their Measurement

Variables	Acronyms	Measurement	Justification
Exogenous (Independent)	CDMT	Commercial Data Mining Technique	(Edson, 2021, Wilhelm, 2004; Phua et al, 2005; Bolton et al., 2012).
Exogenous (Independent)	RAT	Ratio Analysis Technique	(Ejoh, 2017; Bello, 2020; Olayinka, 2023).
Endogenous (Dependent)	FDAA	Fraud Detection	(Wilhelm, 2004; Phua et al, 2005)
Moderating Variable	OC	Organisational Culture	(Wallach, 1983; O'Reilly, Chatman & Caldwell, 2013)

Source: Previous Studies Compilations

Method of Data Analysis: the study used Partial Least Square method because it is more robust and suitable for the study. Thus, the researcher examined how multiple exogenous variable are related to the components of one endogenous variable and also moderating variable. This is to guide the study on the level of effect of each component on the study as a whole. The analysis used Partial Least Square Structural Equation Model (Smart PLS 4).

Model Specification

$$Y = \beta_0 + \beta x + \varepsilon$$

Where;

Y = Dependent variable

β_0 = Intercept

β = slope

X = Is the independent variable

ε = error term

3.1.1 Functional form of the Model

Where;

Y = Fraud Detection in Anti-Graft Agencies (FDAA)-Dependent variable

X = Forensic Accounting Techniques (FAT)- Independent variable

Organizational Culture (OC)- Moderating variable

4.0 Data analysis and Discussion

Table 4.1: Socio-demographic Characteristics of the Respondents n = 129

Variable	Category	Frequency	Percentage (%)
Gender	Male	68	52.7
	Female	61	47.3
	Total	129	100.0
Age	Below 20 years	12	9.3
	20-30 years	36	27.9
	31-40 years	32	24.8
	41-50 years	20	15.5
	51-60 years	18	13.9
	Above 50 years	11	8.5
	Total	129	100.0
Educational Qualification	Secondary School	30	23.3
	Bachelor's Degree	83	64.3
	Master's Degree	14	10.9
	Ph.D. or equivalent	2	1.6
Total		129	100.0

Sources: Field survey, 2025

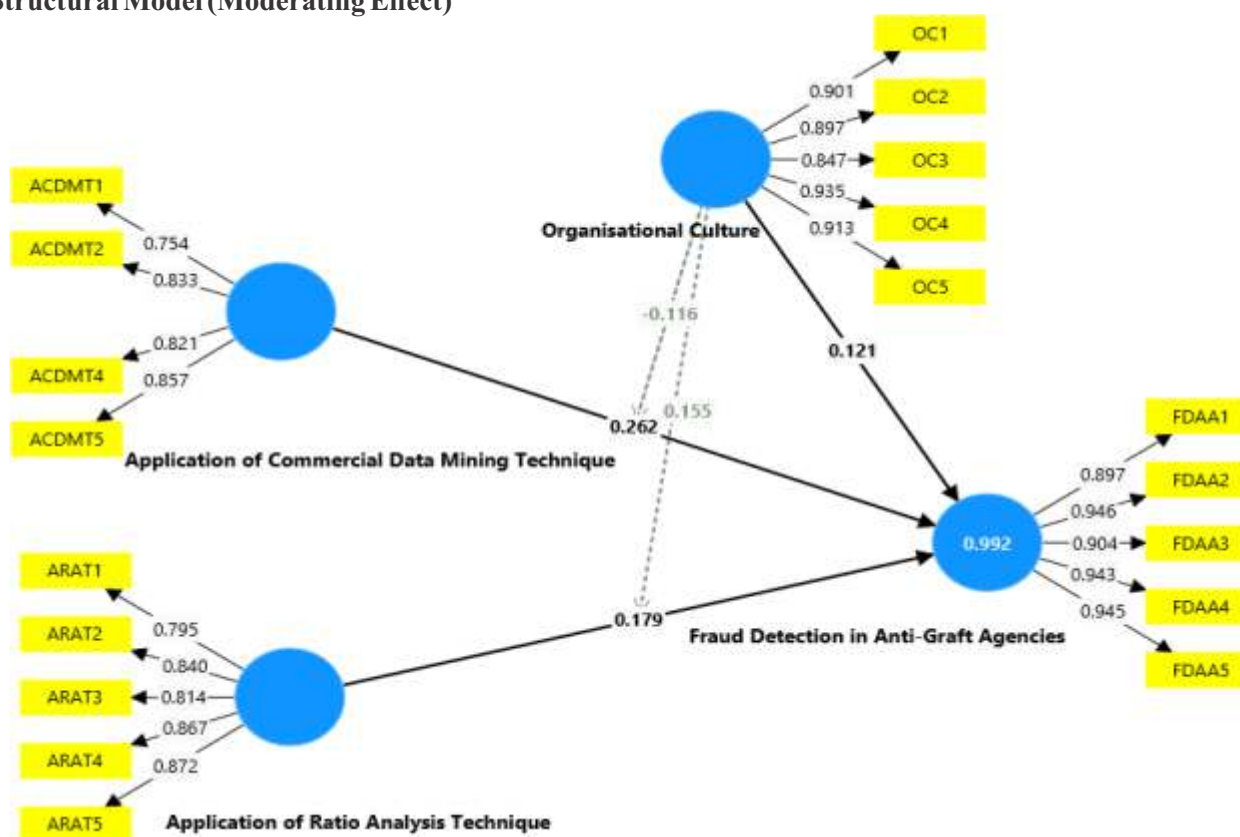
Table 4.1 presents the socio-demographic characteristics of the respondents in the study, consisting of a total sample size of 129 individuals. Among the respondents, there is a slight majority of males, accounting for 52.7% (n = 68), while females comprise 47.3% (n = 61). This distribution indicates a relatively balanced representation

of gender in the sample, suggesting that both genders are adequately represented in the study.

The age distribution of respondents reveals a diverse range of age groups. The majority of respondents fall within the 20-30 years category (27.9%, $n = 36$), followed closely by the 31-40 years group (24.8%, $n = 32$). Notably, the proportion of younger individuals (below 20 years) is relatively small at 9.3% ($n = 12$), while the older age categories (41-50 years and above) consist of 15.5% ($n = 20$) and 22.4% (combining 51-60 years and above 60 years) respectively. This age distribution indicates a predominance of younger to middle-aged individuals, which may reflect the demographic characteristics of the population under study.

The educational qualifications of the respondents highlight a well-educated sample, with a significant majority holding a Bachelor's degree (64.3%, $n = 83$). Secondary school graduates represent 23.3% ($n = 30$), while those with a Master's degree and Ph.D. or equivalent are significantly fewer, at 10.9% ($n = 14$) and 1.6% ($n = 2$), respectively. This suggests that the respondents are predominantly educated at the undergraduate level, which may influence their perspectives and insights in the context of the study.

Structural Model (Moderating Effect)



Path Algorithm depicting moderating effect of organisational culture on the relationship between forensic accounting techniques and fraud detection in anti-graft agencies in Nigeria shows that the loading for all the indicators is above 0.7. This was achieved through excluding any indicator with less than 0.7 as its loading. The exclusion was done through identifying the indicator with least loading for each construct and deleting it. The process was repeated several times until all the loadings are above 0.7. Multicollinearity among indicators affect the overall Path coefficient for a given reflective construct as it increases the standard error. Thus, there is need to check and ensure that no issue of multicollinearity exist (Sekaran & Bougie, 2010).

Table 4.2: Convergent Validity

Variable	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Application of Commercial Data Mining Technique	0.835	0.851	0.889	0.868
Application of Ratio Analysis Technique	0.894	0.898	0.922	0.832
Fraud Detection in Anti-Graft Agencies	0.959	0.961	0.968	0.860
Organisational Culture	0.940	0.941	0.955	0.808
Forensic Accounting Techniques	0.921	0.952	0.987	0.865

Source: SMART PLS 4

Test of Hypotheses

H₀: Organisational culture significantly moderate the relationship between forensic accounting techniques and fraud detection by Anti-graft agencies in Nigeria.

Table 4.3: Summary of Partial Least Squares Structural Equation Model for Organisational Culture Moderating the relationship between Forensic Accounting Techniques and Fraud Detection by Anti-graft agencies in Nigeria

Variable	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P-values
FA-> FDAA	0.866	0.864	0.173	5.016	0.010
OC-> FDAA	0.152	0.140	0.128	1.188	0.235
OC x FDAA	-0.003	-0.009	0.019	0.155	0.877

Source: SMART PLS 4

The results of the PLS-SEM analysis showed that forensic accounting techniques has strong positive effect on fraud detection in anti-graft agencies ($\beta = 0.866$, $t(5000) = 5.016$, $p = 0.010$), indicating that these techniques are highly effective in enhancing fraud detection. However, the interaction term between organisational culture and forensic accounting techniques did not significantly moderate this relationship ($\beta = -0.003$, $t(5000) = 0.155$, $p = .877$). This suggests that organisational culture have a positive moderating effect on the relationship between forensic accounting techniques and fraud detection in anti-graft agencies in Nigeria. The hypothesis H_0 is hereby accepted because the P-value for the interaction term is well above the 0.05 threshold, and the T-statistic is very low. Therefore, the study concluded that while forensic accounting techniques significantly affect fraud detection, organisational culture significantly moderate on this relationship.

Discussion of Findings**Organisational Culture as a Moderator in the Relationship between Forensic Accounting Techniques and Fraud Detection**

The study found that organisational culture significantly moderate the relationship between forensic accounting techniques and fraud detection of anti-graft agencies in Nigeria. The interaction term (Organisational Culture x

Forensic Accounting) had a path coefficient of -0.003, T-statistics of 0.155, and P-values of 0.877, indicating there is significant moderating effect.

This finding suggests that both organisational culture and forensic accounting techniques contribute to fraud detection, their combined effect produce a significant outcome. Forensic accounting techniques remain effective in detecting fraud regardless of the organisational culture. However, this does not diminish the importance of fostering a strong organisational culture, as it still plays a significant direct role in enhancing fraud detection efforts. Findings agreed with the prior studies of (Owolabi, Dada and Olaoye, 2013; Adefila et al, 2013; Dada and Okwu, 2013; Adebisi and Gbegi, 2015; Abdurrahman et al, 2020; Peiris and Aruppala, 2021; Onyekachi and Olonite, 2022).

5.0 Summary, Conclusion and Recommendation

5.1 Summary

This study examined the moderating effect of organizational culture on the relationship between forensic accounting techniques and fraud detection in anti-graft agencies in Nigeria, specifically the Economic and Financial Crimes Commission (EFCC) and the Independent Corrupt Practices and Other Related Offences Commission (ICPC). The primary objective was to determine whether organizational culture influences the effectiveness of forensic accounting techniques in fraud detection within these agencies.

Data were collected through a survey method, targeting staff members of the EFCC and ICPC. Descriptive and inferential statistical techniques, including Partial Least Squares (PLS) analysis, were employed to analyze the data. The findings revealed that forensic accounting techniques, such as forensic auditing, data mining, and ratio analysis, have a significant impact on fraud detection in anti-graft agencies. Furthermore, organizational culture was found to moderate the relationship between these forensic accounting techniques and fraud detection. This suggests that the prevailing culture within an organization, including its values, norms, and management support, can enhance or impede the success of fraud detection efforts.

The study also highlighted the current state of fraud in Nigeria, with various forms of fraud, including banking fraud, Ponzi schemes, and financial mismanagement, being prevalent in both public and private sectors. Despite efforts by agencies like the EFCC and ICPC, fraud continues to undermine Nigeria's economic stability and public trust. This underscores the importance of improving forensic accounting practices and fostering a supportive organizational culture to combat fraud more effectively.

5.2 Conclusion

In conclusion, the study demonstrated that forensic accounting techniques play a critical role in detecting fraud within anti-graft agencies in Nigeria. However, the effectiveness of these techniques is significantly influenced by organisational culture. A strong organisational culture that promotes ethical behavior, transparency, and accountability can strengthen the application of forensic accounting methods and improve fraud detection outcomes.

Moreover, the study's findings suggest that while forensic accounting techniques are essential, they must be supported by a conducive organisational environment that aligns with best practices in fraud prevention and detection. The significant moderating role of organisational culture further emphasizes the need for Nigerian anti-graft agencies to invest in both technical skills and organisational development to combat fraud effectively.

5.3 Recommendations

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

1. Training and Programs: by including and capacity –building programs, the funding acknowledges that skill level and awareness of forensic accountant's auditors impact how effectively forensic techniques are used. It also aligns with the fraud hexagons emphasis on capability and rationalization-trained staff are better equipped to spot manipulation and resist internal pressure.
2. Cultural Audits: cultural audits assess the ethical environment and values within an organisation, addressing key fraud hexagon factors such as arrogance, collusion, and opportunity.
3. Technology Enhancement: technology-based forensic tools are critical in identifying complex fraud patterns, especially where collusion and capability are high. Technology also enables real-time monitoring and strengthens internal controls, reducing opportunity for fraud.

6.0 Practical and Policy Implication

The findings of this study provide valuable insights for policymakers and practitioners in anti-graft agencies. By tracking key performance indicators (e.g number of frauds detected, disciplinary actions taken), and creating a centralized fraud monitoring dashboard for regular reporting and evaluation and finally, providing feedback for continues improvement and accountability.

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INFLUENCE OF MACROECONOMIC INSTABILITY ON CORPORATE CAPITAL STRUCTURE IN NIGERIA

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Abstract

The relevance of capital structure is extremely important in corporate finance. Therefore, this study highlights the pivotal role of macroeconomic instability which is proxies by interest rate, inflation rate and exchange rate in shaping strategies of finance within the volatile economic context in Nigeria. This conceptual paper examines the correlation between macroeconomic instability and corporate capital structure. The study adopts a qualitative research approach, relying primarily on meta-analysis review. Findings from the literature revealed mixed correlations, with some reporting positive relationship while other reporting negative correlation between macroeconomic factors and corporate capital structure. This mixed correlation arises due to contextual factors (industry differences) and also due to differences in research design, selection of sample and measurement of macroeconomic variables. Practical implications include recommendations for policymakers to proactively adjust interest rate in order to control inflation and stabilise growth, and for managers of the companies to align their financing decisions with economic trends. Future research should empirically validate the proposed framework by collecting and analysing data from Nigerian companies.

Keywords:

Corporate Capital
Structure, Macroeconomic
Instability

1. Introduction

Capital structure is a mixture of equity and debt in funding business organizations. Therefore its relevance cannot be overemphasized in corporate finance. Capital structure has been studied for many years by various scholars. After the work of Miller and Modigliani in 1958, who opined that in a perfect capital market, decisions on finance are not relevant, numerous empirical studies have explored the implications of capital market imperfections. These imperfections—such as bankruptcy costs, taxes, agency issues, and information asymmetries—have been shown to influence capital structure choices, investment behaviours, and the associated costs of financing (Paseda & Obademi, 2020). Subsequent research has given rise to various contemporary theories that attempt to explain capital structure decisions more comprehensively (Aga, 2024). Many factors affect the capital structure of businesses, which, according to Paseda and Obademi (2020), include macroeconomic instability, industry-level factors, and firm-specific characteristics, among others.

Macroeconomic instability was reported as the most crucial of all the factors (Musa, 2020). This is because it is a factor outside the control of management. These macroeconomic factors include interest rates, currency

exchange rates, inflation, and the overall economic growth rate (Chow, Mohammed, Ariffin & Cheng, 2019). They influence financial market stability and affect business behaviour, particularly in capital structure decisions. Notably, macroeconomic stability plays a critical role in fostering sustainable economic growth, which aligns with Sustainable Development Goal (SDG) 8: Decent Work and Economic Growth. Stable macroeconomic conditions support investment, business expansion, and employment creation, while corporate capital structure decisions directly influence productivity, competitiveness, and job opportunities.

The economy of Nigeria demonstrates how macroeconomic instability critically affects decisions on capital structure, with high inflation rate (33.8% in 2024), serious depreciation in Naira (40.9% in 2024), and higher costs of borrowing with 22.75% threshold interest rate in 2024 (Central Bank of Nigeria, 2024). This creates an environment with high risk of financing which pushed companies toward conservative leverage strategies. For example, producers in Nigeria decrease their exposure to debt so as to mitigate currency risk from importing materials that are costly (Akinrinola, Tomori, & Audu 2023).

Several studies have been conducted on capital structure. For instance, Agyei, Sun, and Abrokwhah (2020) examined the pecking order theory versus the trade-off theory; Baker and Wurgler (2023) explored market timing and capital structure; and Akinrinola, Tomori, and Audu (2023) investigated the relationship between capital structure and financial performance. Additionally, Bismark and Pasaribu (2011) focused on capital structure and corporate failure prediction. These studies assessed capital structure determinants based on firm-specific characteristics and product market competition, such as agency costs, bankruptcy costs, and governance issues, leading to agency, pecking order, trade-off, and market condition capital structure models. However, these studies assumed that micro-level factors within companies are the primary determinants of capital structure, overlooking the broader impact of macroeconomic instability on corporate capital structure decisions.

Similarly, studies on the effect of macroeconomic instability on capital structure have used different macroeconomic indicators. For example, Musa (2020) combined inflation, GDP growth rate, and market capitalization to GDP, while Paseda and Obademi (2020) incorporated unemployment rate, GDP growth, term spread, all-share index, credit to the private sector, and equity market capitalization as macroeconomic factors. However, there is limited research that specifically combines inflation rate, interest rate, and tax rate as macroeconomic factors influencing capital structure. Based on this background, this research seeks to synthesize whether or not macroeconomic instability influences businesses' capital structure choices.

A country's economic activities play a significant role when it comes to capital structure of the business. In view of this Jerop (2018) opined that it is the economic activities of the country that shape the capital structure of the businesses that are operating within the country. Therefore, company's capital structure influences investors' confidence. This is because it serves as a signal tool which can boost investors' confidence (Usman & Olayiwola, 2019). Selecting an optimal structure of capital enhances a firm's value by significantly reducing its weighted average cost of capital. This reduces the risk associated with the firm, leading to increased in investors' confidence. However, in Nigeria, the macroeconomic instability such as interest rates, inflation, exchange rates, currency devaluation and foreign investment flow have significant influence on this correlation. This macroeconomic instability disrupts the balance of debt and equity, making it harder to achieve. Most of the Nigerian companies listed in Nigerian exchange group have an issue with optimal capital structure (Padesa & Obademi 2020). Researchers have documented a lot of studies on macroeconomic factors and capital structure for instance the studies of Aga, (2024); Goh (2024); Yildirim and Karabayir (2024); Hussain, Ahmed and Khan (2023) and Chow et al., (2019) have all examined the effect of one or more macroeconomic factors affecting the

choice of capital structure. For instance, Aga (2024) found that banks, tax rates, and GDP growth significantly influence European firms' capital structure, with varying impacts across sectors. Hussain et al. (2023) and Ramzan & Qureshi (2022) revealed that macroeconomic factors like GDP, interest rates, exchange rates, and inflation affect leverage in Pakistan's textile and cement sectors, emphasizing their consideration in financial decisions. However, few studies combined interest rate, tax rate and exchange rate as macroeconomic factors. Contextually, most studies on capital structure were conducted in advanced economies, where their macroeconomic is more stable. This research filled this contextual gap by focusing on Nigeria, which is a developing country characterised with macroeconomic instability. Similarly, methodologically, most of the previous studies were empirical in nature while this study is conceptual in nature.

The main objective of the study is to examine the influence of macroeconomic instability on corporate capital structure in Nigeria. The specific objectives are to:

- i.* examine the influence of inflation rate on corporate capital structure
- ii.* assess the influence of interest rate on corporate capital structure
- iii.* evaluate the influence of exchange rate on corporate capital structure

2. Literature Review

This section examines relevant concepts, literatures and theories related to the study. Additionally, it presents the proposed conceptual framework.

2.1 Conceptual Review

2.1.1 Corporate Capital Structure

Harris and Raviv (2024) defined capital structure as the combination of debt and equity instruments used by a firm to finance its assets and operations. It is a dynamic decision that reflects the firm's financial health, growth prospects, and market environment. Similarly, Baker and Wurgler (2023) viewed capital structure as the strategic allocation of a firm's financial resources between debt and equity, influenced by market conditions, tax considerations, and managerial preferences. It plays a pivotal role in shaping a firm's financial flexibility and risk management. In addition, Damodaran (2022) defined capital structure as a framework that determines how a firm finances its overall operations and growth through different sources of funds, including debt, equity, and hybrid securities. It is a critical determinant of a firm's cost of capital and valuation. Moreover, Graham and Leary (2021) defined capital structure as the composition of a firm's liabilities, including both short-term and long-term debt, as well as equity components such as common stock and retained earnings. It reflects the firm's financial strategy and risk profile. Furthermore, Myers (2020) defined capital structure as the mix of debt and equity financing used by a firm to fund its operations and growth. It represents the way a company balances its financial obligations and ownership interests. Therefore, capital structure is the mixture of equity capital and debt capital.

2.1.2 Macroeconomic Instability

These are macroeconomic factors that influence the choice of capital structure. There are many macroeconomic factors, however, this study used interest rate, inflation rate and exchange rate.

2.1.2.1 Interest Rate

Interest rate can be defined as the cost of servicing debt financing and any rise in the rate of interest would result in general reduction in debt financing. Similarly, Musa (2020) defined interest rate as the cost of obtaining loans on either a short- or long-term basis. Therefore, the interest rates must be taken into account because of their

influence on a company's debt. Companies desire low-cost debt financing from financial institutions. This is because low interest rates have been shown to encourage higher debt levels as firms take advantage of cheaper borrowing costs (Baker, Wurgler & Yuan, 2020). However, during periods of rising interest rates, firms tend to reduce leverage to avoid higher debt servicing costs (Graham, Leary, & Roberts, 2021). However, Mokhova and Zinecker (2014) opined that higher rates of interest could serve as a motivator to profit-driven commercial banks to boost lending to the businesses. In spite of financial market liberalization, many emerging markets still have high interest rates (Musa, 2020). Debt capital interest rates are linked to long-term commitments, as high market interest rates discourage enterprises from raising additional loans (Umoren & Babajide, 2017).

2.1.2.2 Inflation

Inflation is one of the nation's primary indicators of stability. Any increase in inflation causes instability in economy (Musa, 2020). This instability makes enterprises unable to repay their loans (Musa, 2020). Inflation has a dual effect on capital structure. On one hand, it erodes the real value of debt, making borrowing more attractive (Frank & Goyal, 2020). On the other hand, high inflation often leads to tighter monetary policy, increasing borrowing costs and discouraging debt financing (Chen, Li & Zhang, 2022). Gungoraydinoglu and Öztekin (2011) found that rising inflation reduces the benefits of debt by increasing bankruptcy costs for enterprises. In situation like this, borrower may demand a return that is higher due to the risk they are taking. High interest rates increase the projected burden of the debt, while firms reduce debt ratios.

2.1.2.3 Exchange Rate

Exchange rate within the purview of macro-economic could be view as the price of currency of one country in terms of currency of other countries. Exchange rate serves as a key determinant of capital structure (Yeboah, Yeboah, Atuahene & Darko, 2024). The determination of a country's exchange rate is influenced by the interaction between the demand and supply of its domestic currency in relation to foreign currencies (Usman & Olayiwola, 2019). Therefore, fluctuations in exchange rates have a significant impact on domestic interest rates and the earnings of firms, particularly those engaged in international trade and business activities (Rehman, 2016). Similarly, Usman and Olayiwola (2019) found that exchange rate increases reduce cash reserves, raise interest costs, and lead to higher debt ratios. Conversely, Yeboah et al. (2024) argued that exchange rate stability depends on economic activity and sustainable development. Businesses can mitigate foreign exposure in to two ways (Aabo, Hansen & Muradoglu, 2015). This can either involve changing the denomination of existing debts or raising new debt (Zein, 2016).

2.2 Review of Empirical Studies

Shamsoddini and Nourani (2025) analysed the factors influencing the capital structure adjustment speed among companies listed on the Tehran Stock Exchange. The study analysed data using generalized method of moments (GMM) and the finding revealed that macroeconomic variables and firm characteristics significantly influence the speed at which companies adjust their capital structure throughout the study period.

Aga (2024) investigated the influence of macroeconomic factors on corporate capital structures using data from 1,298 firms across the European Union, analyzed through feasible generalized least squares regression. The results demonstrate a positive relationship between bank financing and firm leverage, as well as between tax rates and long-term debt, while revealing an inverse correlation between GDP growth and long-term borrowing. The study further identified tax rates and GDP growth as particularly significant determinants for manufacturing firms, with inflation emerging as a critical factor for firms in other sectors.

Hussain, Ahmed and Khan (2023) examined the impact of macroeconomic factors on the capital structure of Pakistan's textile sector (2012–2022) using pooled panel regression. The finding reveals that GDP growth rate and interest rate negatively affect financial leverage, whereas exchange rates and stock market development positively influence it. It recommends that shareholders and financial leaders account for macroeconomic factors such as stock market trends and exchange rate movements in capital structure decisions.

Ramzan and Qureshi (2022) analyzed the effect of macroeconomic variables on the capital structure decisions of Pakistan's cement sector (2007–2016) using linear regression on balanced panel data. The study found that firm size positively correlates with financial leverage, while GDP and inflation rates are significantly related. It recommends that management should consider economic volatility, especially GDP and inflation trends, in their debt-equity decisions.

Ahuja and Kalra (2021) explored the influence of macroeconomic variables on the capital structure of Indian manufacturing companies (2008–2018) using panel regression techniques. The study found that market capitalization and bank credit negatively impact leverage, while money supply has a positive effect. It recommends that policymakers and financial managers monitor macroeconomic indicators, particularly money supply and credit availability, to inform capital structure decisions.

Paseda and Obademi (2020) examined the effect of macroeconomic variables on the capital structure of listed firms in Nigeria. Data was gathered from 17 firms that were selected. The study tested the formulated hypothesis using two stages least square, GARCH and GMM estimation methods. The finding reveals that Nigerian listed firms tend to use cautious debt due to macroeconomic constraints, while some struggle with low leverage. The study recommends prudent utilisation of debt so as to manage organizations' overall risk and maintain stability in the long run.

Musa (2020) assessed the impact of microeconomic factors on capital structure of firms in developing Africa. Data was gathered from 406 firms. The study tested the formulated hypothesis using multiple regression analysis. The finding reveals that macroeconomic factors determine company's capital structure. The research recommends that policies makers should develop policies that will boost the development of financial market.

Umoren and Babajide (2017) examined the influence of macroeconomic variables on capital structure decisions of Nigerian manufacturing companies (1998–2013) using descriptive statistics and Newey and West standard errors. The study found that GDP significantly impacts capital structure, while interest rates, inflation, and stock market development have minimal effects. It recommends that firms monitor GDP trends and that the government encourage the use of long-term debt to foster sectoral growth.

Based on the above reviewed it can be concluded that results is mixed, with some reporting positive relationship while other reporting negative correlation between macroeconomic factors and corporate capital structure. These mixed results are not contradictory but rather reflect the relationship's complexity and context dependent. Differences in institutional settings, sample composition and methodological approaches can be attributable factors for the disparity in empirical results.

2.3 Theoretical Framework

The following are some of the theories relevant to the study

2.3.1 Modigliani and Miller Theory

This theory was propounded by Modigliani and Miller in 1958. The theory stated that in the absence of

bankruptcy and agency costs, asymmetric information, taxation and that market is efficient, the value of the company would not be influenced by the option of its finance. This theory refers to the principle of irrelevance of capital structure. This is because the value of the company is not dependent upon its dividend policy and it also does not depend on capital structure. In simple terms, the theory asserts the following: assume two companies that are comparable except for their financial arrangements. The first company is unlevered, which means it is financed entirely with equity. In contrast, the second company is leveraged, which means it is partially financed by equity and debt. If this is the case, both firms are identical according to the Modigliani-Miller theory. The aforementioned assumptions have sparked extensive debate, leading to an increase in study on alternate theoretical models that provide incentives for managers or shareholders to determine the appropriate level of leverage to achieve an optimal capital structure.

2.3.2 Market Timing Theory

The Market Timing Theory was propounded by Baker and Wurgler in 2002. The theory supplies an important lens for understanding decisions on capital structure in a market that is imperfect such as Nigeria. This theory opined that businesses time their financing decisions strategically, issuing debt when interest rates are favourable and equity when their stock prices are high. However, Nigeria's institutional environment significantly disrupts this dynamic. Constraints such as underdeveloped bond markets and limited access to long-term financing restrict corporate options, while currency instability and volatile interest rates generate additional layers of complexity. These institutional weaknesses challenge the assumptions of the perfect capital market of the M & M Theorem. Where M & M suggested the irrelevance of capital structure, Nigeria's reality differs sharply: firms must operate in a financial landscape where ongoing macroeconomic instability such as exchange rate fluctuations and erratic inflation makes conventional financing impractical. The lack of developed corporate bond markets forces firms to rely on short-term bank financing or equity, even when market conditions are unfavorable.

This difficult environment compels Nigerian firms to adopt financial strategies focused on survival. Weak disclosure practices and information asymmetry further distort decision-making, as companies encounter higher costs for both equity and debt financing. In practice, this leads to a trend where firms favour immediate liquidity and opportunistic financing over long-term capital structure optimisation. The outcome is a financial system where market timing behaviour becomes not merely strategic but often essential for corporate survival, illustrating how institutional factors fundamentally influence decision on capital structure in developing countries.

2.3.3 Pecking Order Theory

Myers first proposed this theory in 1984. According to him, the financial needs of entrepreneurs are based on hierarchy. Firstly, entrepreneurs sourced their funds from within the business but as financial demand rises, then they should obtain additional funds via debt financing. Subsequently as the financial demand increases then they should source funds from external source (through external equity). Thus, this theory states that entrepreneurs normally choose internal source of finance, but when internal source of finance is not adequate then he should first of all prefer debt financing before going for equity finance. During inflation, the cost of borrowing rises due to higher interest rates, making debt financing more expensive. Therefore, firms in Nigeria are likely to prefer retained earnings to avoid the increased cost of debt (Ogundipe, Idowu & Ogundipe 2012). The theory assumes that a firm does not have a target capital structure. Taxes, the expense of issuing new shares, agency costs, and the financial distress of investment opportunities are all factors that the theory fails to account for (Butt, Khan & Bilal, 2013).

This Theory explains the preference of businesses in Nigeria for internal financing during macroeconomic instability, as high interest and inflation rates make debt costly and equity issuance prohibitive due to asymmetry in information. It is directly related to this study by showing how institutional constraints in Nigeria (volatile macro conditions, shallow debt markets) intensify the theory's hierarchy of financing choices, making businesses to prioritize feasibility over optimal capital structure. Therefore, the theory supplies the micro-level behavioural framework for understanding how businesses react to the macro-level variables (inflation, interest rates, exchange rate) assessed in the study.

2.4 Conceptual Framework

This is an analytic tool which is employed to arrange abstract ideas with many contexts and variations. This enables the researcher to understand, explain and predict phenomenon on ground. For this research, this framework articulated visually the hypothesised correlation between macroeconomic variables (independent variable) and corporate capital structure (dependent variable).

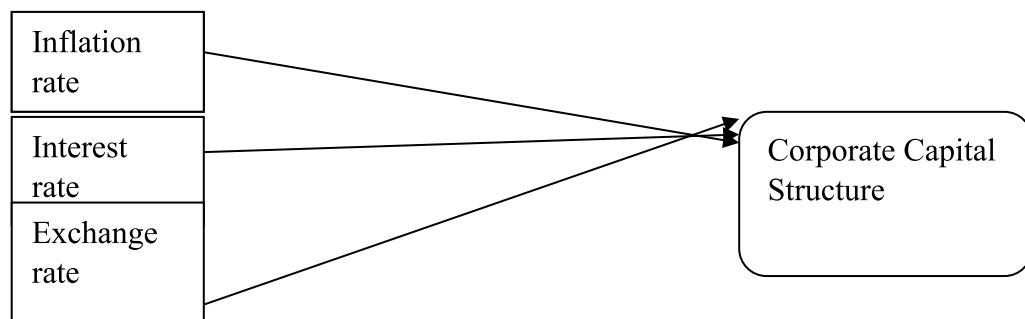


Figure 1: Research Model

Source: Researcher's Design, 2025

As presented in Figure 1, the research model demonstrates the direct effect of key macroeconomic factors (inflation rate, interest rate and exchange rate) on capital structure.

3. Methodology

This study adopts a qualitative research approach, relying primarily on a comprehensive literature review. The analysis is based on secondary data, drawing insights from existing studies on macroeconomic variables and their relationship with corporate capital structure. By synthesizing relevant theories and empirical findings, this study develops a conceptual model that explains the linkages between macroeconomic factors and capital structure decisions in Nigeria.

4. Discussions

Several studies have examined the correlation between macroeconomic variables and capital structure, primarily to assess the influence of macroeconomic instability. Researchers have used various proxies, such as interest rates, tax rates and unemployment rates, to measure this instability, with capital structure often serving as a dependent variable in their analyses.

The studies collectively highlight the significant role of macroeconomic factors in shaping corporate capital structure decisions across different regions and industries. Several common themes emerge from the findings. Shamsoddini and Nourani (2025) emphasize that macroeconomic factors, alongside firm-specific characteristics, influence the speed at which firms adjust their capital structure. This suggests that companies

dynamically respond to economic conditions when restructuring their financial leverage. Similarly, multiple studies (Aga, 2024; Hussain, et al., 2023; Ramzan & Qureshi, 2022; Umoren & Babajide, 2017) identify GDP growth as a crucial determinant of capital structure. While Aga (2024) and Ramzan and Qureshi (2022) find a negative correlation between GDP growth and long-term debt, indicating that firms may rely more on internal financing in economic booms, Umoren and Babajide (2017) assert that GDP significantly influences capital structure in Nigerian manufacturing firms.

Moreover, the impact of interest rates and inflation varies across studies. Hussain et al., (2023) and Ramzan and Qureshi (2022) find that inflation significantly affects financial leverage, while Ahuja and Kalra (2021) suggest that money supply (which influences inflation) positively affects leverage. The mixed results indicate that inflationary pressures and monetary policies shape capital structure strategies differently across industries and economies.

In addition, the impact of the banking sector and financial markets is also evident in the findings. Aga (2024) highlights a positive correlation between banking sector development and corporate leverage, underscoring the importance of financial intermediaries. Similarly, Ahuja and Kalra (2021) suggest that bank credit availability negatively impacts leverage, implying firms rely on alternative financing sources. The findings suggest that financial market conditions influence capital structure decisions by affecting firms' access to external funding. Furthermore, exchange rates and stock market development also play a role in corporate financing strategies. Hussain et al., (2023) reveal that exchange rates and stock market development positively influence leverage, suggesting that firms leverage financial market growth for funding. This aligns with Umoren and Babajide (2017), who emphasize that stock market development has minimal influence in Nigeria, possibly due to structural inefficiencies.

Additionally, several studies focus on industry-specific effects. For example, Ramzan and Qureshi (2022) examine Pakistan's cement sector and highlight the role of firm size and GDP trends. Likewise, Aga (2024) noted that tax and GDP growth significantly influence manufacturing firms, while inflation is crucial for other sectors. Paseda and Obademi (2020) find that Nigerian firms adopt a conservative debt strategy due to economic constraints, which contrasts with findings from developed economies.

Across the studies, recommendations emphasize prudent debt management and policy interventions. Ahuja and Kalra (2021) and Umoren and Babajide (2017) advocate for monitoring macroeconomic indicators, while Musa (2020) and Paseda and Obademi (2020) stress the need for policies that enhance financial market development and debt stability.

These findings collectively demonstrate that macroeconomic factors play a fundamental role in shaping corporate capital structure. While GDP growth, inflation, and financial market conditions are significant determinants, the magnitude and direction of their impact vary across industries and economic contexts. The results underscore the importance of adaptive financial strategies that account for macroeconomic fluctuations; ensuring firms maintain an optimal balance between debt and equity to achieve financial stability and growth.

5. Summary, Conclusion and Recommendations for Future Research Direction

This paper developed a conceptual framework which linked macroeconomic instability to the capital structure of businesses in Nigeria. By integrating pecking order theory with unique economic context of Nigeria, this framework addressed practical and theoretical gaps in literature. The paper concludes that the correlation between macroeconomic instability and corporate capital structure is mixed, with some reporting positive

relationships while other reporting negative correlation between macroeconomic factors and corporate capital structure. Therefore, future research should empirically validate the framework by collecting and analysing data from Nigerian companies. This empirical validation is crucial for strengthening the hypothesised correlation between macroeconomic instability and corporate capital structure decisions. To facilitate such validation, data may be sourced from both public and private repositories, including the National Bureau of Statistics, the Central Bank of Nigeria (CBN), and the Nigerian Exchange Group (NGX), as well as from the annual reports and financial statements of the companies themselves. The data can then be analysed using appropriate techniques for data analysis, such as panel data regression method (Two-Stage Least Squares and Generalized Method of Moments), multiple regression analysis among others.

6. Practical and Policy Implications

This study has practical significance in terms of the corporate capital structure. For managers of the companies, the framework supplies insights into how companies can make adjustments in their financial strategies in anticipation of changes in macroeconomic variables. Similarly, for policymakers, it emphasises the need of stable macroeconomic policies in boosting the company's growth and financial stability.

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AN ANALYSIS OF CORPORATE GOVERNANCE PRACTICES IN DEVELOPED MARKETS: A LESSON FOR EMERGING ECONOMIC

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Abstract

Corporate governance plays a critical role in ensuring accountability, transparency, and sustainable growth in corporate entities. Developed markets such as the United States, United Kingdom, Germany, and Japan have established advanced corporate governance frameworks supported by strong legal institutions, independent boards, and effective regulatory oversight. This study analyzes corporate governance practices in developed markets to extract relevant lessons for emerging economies. The paper takes a retrospective view, focusing on accounting research published in leading accounting journals. Through a comparative literature review the research identifies key governance elements such as accountability, transparency and sustainability that have contributed to firm performance and investor confidence in developed nations. Findings of the study reveals that corporate governance in developed markets is characterized by strong legal frameworks, effective regulatory enforcement, and a focus on accountability and transparency. Key practices include board independence, rigorous financial reporting standards like IFRS and GAAP, and active shareholder engagement mechanisms. These systems are supported by dispersed ownership structures, which reduce the dominance of controlling groups and protect minority shareholders. While these practices offer useful lessons for emerging economies, successful adoption requires adaptation to local legal, cultural, and economic contexts. The study recommends that emerging economies strengthen their legal and regulatory frameworks, promote board independence and diversity, and enhance transparency through international reporting standards. It also calls for protecting minority shareholders and encouraging shareholder activism. Importantly, governance reforms should be adapted to each country's unique cultural, economic, and institutional context to ensure effectiveness. To improve corporate governance, emerging market governments should update outdated laws, establish independent regulatory bodies, and invest in institutional capacity. Promoting awareness of best practices and partnering with international organizations like the OECD and World Bank can further support effective reform and accountability.

Keywords:

Corporate Governance,
Developed Markets,
Accountability, Transparency,
Sustainability

1. Introduction

Corporate governance has emerged as a critical framework for ensuring accountability, transparency, and efficiency in corporate management, significantly influencing firm performance and stakeholder confidence (Claessens & Yafeh, 2020). Over the decades, corporate governance has evolved into a key area of inquiry in corporate finance, organizational studies, and institutional economics. It serves as a foundation for aligning managerial decisions with stakeholder interests, particularly in increasingly complex and interconnected global

markets (La Porta, Silanes, Shleifer & Vishny 2021). The divergence in corporate governance practices between emerging and developed markets has garnered increasing scholarly and policy interest, given its implications for global financial stability, investment flows, and economic growth. Prior research has established that developed markets often exhibit well-established governance mechanisms underpinned by mature legal, regulatory, and institutional frameworks, ensuring greater transparency, risk management, and shareholder protection (Kraakman, Kahan & Rock 2021). For instance, Bebchuk and Hart (2023) emphasize the role of advanced regulatory enforcement in enhancing firm value and protecting minority shareholders in these economies. Conversely, emerging markets present unique governance dynamics shaped by institutional voids, socio-economic challenges, and market inefficiencies. Ownership concentration, family dominance, and socio-political influences significantly affect governance structures and their effectiveness in these regions (Gill & Obradovich, 2023).

Corporate governance emerged as a significant concern following major corporate scandals and financial crises, such as the collapse of Enron and WorldCom in the early 2000s and the 2008 global financial crisis. In developed markets, these events led to regulatory reforms (e.g., Sarbanes-Oxley Act 2002 in the U.S., UK Corporate Governance Code) aimed at strengthening accountability, transparency, and shareholder rights. However, many emerging economies still face weak enforcement mechanisms, political interference, corruption, and limited shareholder activism, which hinder the adoption of sound corporate governance practices. This historical gap between developed and emerging markets needs to be investigated to identify transferable lessons and effective models. Corporate governance in developed markets has evolved significantly over the past century. Early discussions, notably in Berle and Means' seminal work *The Modern Corporation and Private Property* (1932), highlighted the separation of ownership and control in corporations, raising concerns about managerial accountability. This debate laid the groundwork for modern corporate governance principles.

The 1980s and 1990s witnessed a series of corporate scandals, such as the collapse of Enron in 2001, which exposed significant governance failures. These events prompted regulatory reforms like the Sarbanes-Oxley Act of 2002 in the United States, aimed at enhancing transparency and accountability in corporate financial reporting. Internationally, the Cadbury Report (1992) in the UK emphasized the importance of board independence and financial transparency, influencing governance codes in various countries. The evolution of corporate governance is compelling because it reflects the dynamic interplay between business practices, regulatory frameworks, and societal expectations. Understanding this evolution offers insights into how governance structures can adapt to contemporary challenges, ensuring that corporations operate ethically and efficiently in a globalized economy. Weak corporate governance can have detrimental effects on various stakeholders including shareholders as poor governance can lead to mismanagement and financial losses. Lack of accountability may result in job insecurity and unethical workplace practices thereby affecting employees adversely. Similarly, consumers may also be affected as companies with weak governance may prioritize profits over product quality and safety. In addition, Ineffective governance can contribute to broader economic instability and loss of public trust in institutions thereby affecting the society as a whole.

These issues arise from inadequate oversight, lack of transparency, and insufficient stakeholder engagement in decision-making processes. Implementation of regulatory frameworks like the Sarbanes-Oxley Act (2002) in the U.S. and the UK Corporate Governance Code and establishment of independent audit committees and enhanced financial reporting standards. Other necessary improvements strategies include; strengthening enforcement mechanisms to ensure compliance with governance standards, promoting diversity and inclusion within boards to reflect a broader range of perspectives, encouraging shareholder activism and engagement to hold management accountable and adapting governance practices to address emerging challenges such as digital transformation and sustainability. Several solutions have been proposed to enhance corporate

governance which include; institutional shareholder services (ISS) which was founded by Monks (2025), ISS advocates for shareholder rights and corporate accountability, influencing governance practices globally. In addition, corporate certification encourages companies to meet high social and environmental performance standards, promoting stakeholder-oriented governance. Consequently, prior studies have examined various aspects of corporate governance such as Berle–Dodd Debate which discussed the balance between shareholder interests and broader societal responsibilities, influencing governance philosophies and International Monetary Fund (IMF) (2016), research which found that stronger corporate governance enhances financial resilience in emerging markets, suggesting that lessons from developed economies can be beneficial. While existing solutions have made strides, there is room for enhancement such as Leveraging digital tools for real-time monitoring and reporting can improve transparency, developing internationally recognized governance standards can facilitate cross-border investments and operations and providing governance education for board members and executives can enhance decision-making and ethical practices.

2. Literature Review

A report by the Harvard Law School Forum on Corporate Governance (2024) outlined global trends in corporate governance, emphasizing increased attention to board diversity, particularly gender diversity. The report noted significant progress in countries like France, Italy, and the UK, where women hold over 40% of board seats. It also highlighted ongoing efforts in other regions to enhance diversity across various dimensions, reflecting a global shift towards more inclusive governance practices.

In the broader African context, effective corporate governance is linked to improved public sector performance, highlighting its importance beyond the private sector. Asian studies reveal a growing academic interest in corporate governance, with an emphasis on adapting governance structures to fit diverse cultural and regulatory environments. The integration of financial technology in governance practices, particularly in Indonesia, illustrates the dynamic nature of governance in response to technological advancements. Latin American research indicates that governance mechanisms significantly impact financial decisions, such as capital structure, with factors like CEO duality and legal protections playing pivotal roles. The region also shows a nuanced relationship between corporate social responsibility disclosures and financial leverage. Globally, there is a discernible trend towards enhancing board diversity, with significant strides made in gender representation. This shift reflects a broader recognition of the value of diverse perspectives in governance and decision-making processes. Collectively, these studies affirm that while corporate governance practices are influenced by regional contexts, common themes such as board composition, regulatory frameworks, and the integration of technology are universally pertinent. The convergence of findings across different regions suggests that adopting robust, context-sensitive governance practices can lead to improved organizational outcomes worldwide.

Anifowose (2025) conducted a comparative study examining the effects of corporate governance mechanisms on firm performance in both emerging and developed economies. Using the generalized method of moments (GMM) on data spanning multiple countries, the research analyzed short- and long-term governance outcomes. Findings revealed that internal governance mechanisms significantly enhance short-term performance across both market types, while external governance mechanisms contribute more meaningfully to long-term performance in developed markets. The study concluded that governance efficacy varies by context, and firms in emerging markets should prioritize internal structures to improve immediate performance, whereas developed markets benefit from matured external oversight frameworks.

La Rocca, Fasano and Sanchez (2023), explored the impact of managerial corruption on firm performance through cross-sectional data analysis from a global sample. The study measured the extent of managerial misconduct and its implications for organizational outcomes. Results indicated a clear negative relationship

between corruption and performance, with firms exhibiting higher levels of managerial corruption suffering reduced financial and operational effectiveness. The authors emphasized the role of ethical governance practices in mitigating the adverse effects of corruption and enhancing firm sustainability.

Holý and Evan (2021) examined how national cultural dimensions influence governance quality across 94 countries from 1996 to 2019 using stochastic frontier analysis. By integrating Hofstede's cultural framework with governance performance indicators, the study found that high power distance undermines governance effectiveness, while long-term orientation supports stronger governance systems. These insights underscore the importance of tailoring governance frameworks to cultural contexts to enhance institutional performance and policy alignment.

A 2024 study published in the *International Journal of Disclosure and Governance* investigated how corporate governance influences the internationalization of African firms. Using qualitative interviews with institutional investors across six African countries, the research revealed that board structure, ownership models, and cultural alignment significantly shape cross-border expansion strategies. The study concluded that successful internationalization depends on the adaptability of governance practices to both domestic and international cultural expectations.

Corporate Governance (CG) Overview

Corporate governance (CG) encompasses the structures, rules, and procedures that guide and control corporate operations. Its purpose is to align the interests of various stakeholders—such as shareholders, executives, customers, suppliers, investors, government entities, and the broader community (OECD, 2015). As noted by Shleifer and Vishny (1997), strong corporate governance mechanisms help ensure that management acts in shareholders' best interests and helps mitigate agency conflicts.

Corporate governance (CG) is a critical aspect of corporate finance, encompassing the structures, processes, and mechanisms through which companies are directed and controlled. It defines the relationships among a company's management, board of directors, shareholders, and other stakeholders, ensuring financial health and sustainable performance. CG practices vary significantly between emerging and developed markets due to institutional, regulatory, and cultural differences (Claessens & Yurtoglu, 2021). While developed markets benefit from robust legal systems and regulatory frameworks, emerging markets often grapple with weaker institutions and enforcement mechanisms.

Corporate Governance in Developed Markets

Advanced economies such as the United States, United Kingdom, Germany, and Japan have developed robust corporate governance systems that include independent boards, strong legal enforcement, transparent reporting standards, and active involvement from shareholders (Aguilera & Jackson, 2003). The Anglo-American approach, dominant in the US and UK, prioritizes shareholder interests, relies on market-based controls, and features widely dispersed ownership. In contrast, the Continental European model, common in countries like Germany and France, focuses more on stakeholder involvement, with governance structures often including concentrated ownership and employee representation through co-determination (Yoshikawa & Rasheed, 2009). Research has consistently demonstrated a positive link between sound governance practices and corporate performance in these markets. For instance, Klapper and Love (2004) found that firms operating in countries with strong legal frameworks and governance structures tend to outperform their peers and achieve higher market valuations.

Developed markets typically feature mature legal and regulatory frameworks, ensuring transparency, accountability, and shareholder protection. The organization for economic cooperation and development (OECD) (2015), *Principles of Corporate Governance* serve as a benchmark, promoting robust practices such as independent boards and equitable treatment of shareholders (Claessens & Yurtoglu, 2021). For example, the

Sarbanes-Oxley Act in the U.S. exemplifies stringent accountability measures, ensuring management is answerable to stakeholders. Despite these strengths, debates persist regarding the balance between regulatory compliance and managerial discretion. Some scholars argue that overregulation can stifle innovation and risk-taking (Bushman & Smith, 2020).

Recent Developments in Corporate Governance Practices

The integration of ESG factors has become a significant development in CG across markets. In developed markets, ESG considerations are increasingly linked to financial performance and risk management (Bushman & Smith, 2020). Emerging markets are also adopting ESG principles, albeit at a slower pace, driven by external pressures from global supply chains and investors (Robinson & O'Leary, 2023).

Corporate governance practices significantly influence the overall performance and sustainability of firms. The study focuses on examining three critical dimensions across emerging and developed markets: socio-economic factors, accountability, and transparency, and their impact on corporate governance practices which is presented below.

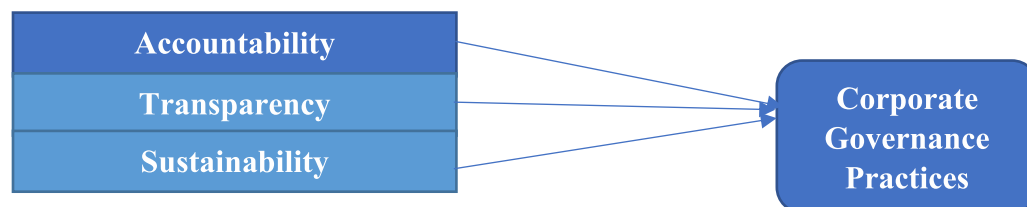


Figure1: Research framework

Source: Selected literature

Agency theory forms the foundation of corporate governance by examining the relationship between principals (shareholders) and agents (management). Jensen and Meckling (1976) argue that agency problems arise when managers prioritize their interests over those of shareholders, resulting in agency costs. Corporate governance mechanisms, such as independent boards, audit committees, and shareholder rights, are designed to mitigate these costs.

In developed markets, robust regulatory frameworks, active shareholder activism, and high transparency levels reduce agency costs (Ntim & Soobaroyen, 2021).

Stakeholder theory shifts the focus from shareholders to a broader set of stakeholders, including employees, customers, suppliers, and communities. Freeman (1984) advocates for managing companies in a way that benefits all stakeholders, emphasizing long-term value creation over short-term shareholder returns.

In developed markets, strong legal frameworks and institutional maturity support practices like corporate social responsibility (CSR) and sustainable development (Robinson & O'Leary, 2020). Consequently, global supply chains and CSR initiatives are gradually driving stakeholder theory's relevance in these markets (Arooj & Farooq, 2023).

3. Methodology: This paper examines the literature on the comparative analysis of corporate governance practices in developed markets. This paper takes a retrospective view, focusing on accounting research published in leading accounting journals to understand the discussion on corporate governance practices in developed markets in literature.

4. Discussions

The analysis of corporate governance practices in developed markets highlights several consistent themes and effective governance characteristics. These insights provide valuable guidance for enhancing governance systems in emerging economies. A key observation is that developed markets benefit from strong legal and regulatory frameworks supported by well-established institutions that enforce compliance efficiently. Regulatory instruments such as the UK Corporate Governance Code and the Sarbanes–Oxley Act in the United States foster a culture of accountability, transparency, and adherence to governance norms.

A significant focus in these markets is on ensuring board independence, with non-executive and independent directors playing a crucial role in overseeing management actions. This helps mitigate agency problems and enhances the quality of decision-making. Additionally, firms in developed economies adhere to rigorous financial and non-financial disclosure standards, such as International Financial Reporting Standards (IFRS) and Generally Accepted Accounting Principles (GAAP), which facilitate transparency and enable investors to make well-informed decisions, thereby improving market efficiency.

Shareholder engagement mechanisms are also more advanced in developed markets, including practices such as proxy voting, class action lawsuits, and transparent dividend policies. Institutional investors, in particular, exert considerable influence on corporate governance by actively participating in strategic oversight and holding boards accountable.

Furthermore, ownership structures in developed economies are generally more dispersed, reducing the concentration of power held by families or state-owned entities and lowering the risk of marginalizing minority shareholders. However, while these best practices offer a valuable framework, their direct adoption in emerging markets is often ineffective without aligning with local institutional conditions. It is essential to consider cultural, legal, and economic differences when adapting governance models to ensure their relevance and effectiveness.

5. Conclusion

Developed markets provide a valuable blueprint for effective corporate governance practices that foster transparency, accountability, and long-term economic growth. While emerging economies face distinct challenges, adopting and adapting these best practices can significantly improve their corporate governance landscape. Success will depend on tailoring reforms to local contexts, building institutional capacity, and encouraging stakeholder engagement. Strengthening corporate governance is essential not only for protecting investors but also for enhancing the overall stability and attractiveness of emerging economies in the global financial system.

Recommendations

The study suggests that emerging economies should focus on strengthening their legal frameworks to improve the enforcement of corporate governance regulations, taking inspiration from the robust regulatory systems found in developed nations. It also emphasizes the need to enhance board independence and professionalism by introducing legislation and governance codes that require independent directors and encourage board diversity, which would help minimize conflicts of interest and strengthen oversight functions. Additionally, improving transparency and disclosure by implementing global reporting standards such as IFRS, alongside strict audit practices, would boost investor confidence and support market stability.

Moreover, governance reforms should include legal protections for minority shareholders, mechanisms for proxy voting, and avenues for shareholder activism to foster greater accountability. Crucially, any reforms must be tailored to the specific cultural, economic, and institutional realities of each country to ensure they are both practical and impactful.

Policy Implications

Emerging market governments need to modernize obsolete legislation and create autonomous regulatory authorities with the authority to strictly enforce corporate governance standards. Strengthening judicial and regulatory institutions through targeted investments is also essential to ensure these frameworks are properly upheld. Raising awareness among investors, corporate managers, and board members about governance best practices can help drive a cultural transformation toward greater accountability. Furthermore, collaboration with international bodies such as the OECD and the World Bank can offer valuable technical support and benchmarking tools to assist in guiding reform efforts.

Limitation of the Paper

Future studies should employ robust methodologies, such as; **cross-country comparative analysis** to explore regional variations in governance practices. In addition, **econometric models should be employed** to quantify the impact of governance mechanisms on firm performance.

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INTERNAL AUDIT AND FRAUD PREVENTION: EVIDENCE FROM DEPOSIT MONEY BANKS IN NIGERIA

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ABSTRACT

The study synthesizes relevant theories and empirical findings to describe the relationship between internal audit practices and fraud prevention mechanisms. The review indicates that both factors significantly contribute to reducing fraud in the banking sector. The findings emphasize the importance of maintaining internal audit independence, ensuring direct reporting lines to top management, and investing in continuous professional development for auditors. Furthermore, the effectiveness of fraud prevention efforts is enhanced when internal audit programs, risk assessment processes, and auditor competencies are strategically aligned. The study concludes by emphasizing the critical need for management to implement audit recommendations promptly in order to prevent future incidents of fraud.

Keywords:

Internal Audit, Auditor's Independence, Auditor's Experience, Fraud prevention

1.0 INTRODUCTION

The issue of fraud has always existed concurrently with human development and efforts at reducing its menace have always been short-lived. Recent waves of crime, of which fraud is a subdivision, do not seem to recognize the crux of power, territorial borders or races. They are perpetrated mostly by organized syndicates involving individual or groups of diverse nationalities operating not only within but also across international boundaries. Fraud is a global phenomenon not unusual to Nation. The spate of fraud and financial impropriety has matured into disturbing stage subverting governance and development in the African sub-region. Fraud is a widespread issue that has persisted over time. Its true extent is difficult to determine since a significant portion goes undetected and not all detected cases are made public. It is not limited to any specific sector or particular country. The primary purpose of internal audit is to provide assurance to stakeholders, including management and the board of directors that an organization's internal control is adequate, risk management processes are effectively mitigating risks and governance processes are in place to ensure accountability, transparency and ethical behavior. Internal audit plays a critical role in preventing and detecting fraud in the banking sector. By providing an independent and objective assessment of an organization's risk management, control, and governance

processes, internal audit can help identify and address weaknesses that could be exploited by fraudsters. Internal audit is commonly regarded as a vital component of organizational oversight, acting as a watchdog within the organization. Internal control mechanism, ensure compliance, mitigate risk and operational efficiency within an organization. Which in turn could lead to improvement in organizational preformation, enhance governance and provide quality assurance to parties concerned. Audit quality refers to the degree to which an internal audit function effectively meets its objectives, adheres to professional standards, and adds value to the organization. Audit quality plays a fundamental role in ensuring the credibility of financial reporting and the reliability of financial statements. It is commonly defined as the extent to which an audit is performed in accordance with established auditing standards and professional best practices. High audit quality contributes significantly to stakeholder confidence, as it assures users that the financial statements present a true and fair view of an entity's financial position and performance. In academic and professional literature, audit quality is often associated with the ability of auditors to deliver relevant, reliable, and objective assurance concerning financial statements and internal control systems. Two critical dimensions that consistently emerge as determinants of audit quality are auditor experience and audit independence. Auditor experience refers to the practical expertise and technical competence acquired through prolonged engagement in auditing activities. It encompasses the auditor's ability to identify anomalies, evaluate financial information, assess risks, and apply professional judgment effectively. Experienced auditors are better positioned to detect irregularities and ensure that audit procedures are executed rigorously and in line with applicable standards. Audit independence, on the other hand, relates to the auditor's capacity to perform their duties without undue influence from internal or external stakeholders. Independence ensures that the auditor's opinions and conclusions are impartial and grounded in objective evidence, rather than being shaped by managerial pressure or personal interest. It is a foundational principle that underpins the credibility of both internal and external audits. Collectively, the presence of both experience and independence enhances the integrity of the audit process and strengthens the reliability of financial reporting. Consequently, the maintenance of audit quality through these dimensions remains a critical area of interest for both researchers and practitioners concerned with corporate accountability and financial transparency.

The banking sector is a fundamental pillar of any economy's financial system, providing vital financial services to individuals, businesses, and government institutions. It underpins financial stability and is essential for driving economic growth (Sanusi, 2010). Banks play a critical role in mobilizing savings, allocating credit, facilitating payments, and supporting investment activities (Owolabi, 2010). However, a defining challenge of the banking sector is its heightened exposure to fraud, which poses significant risks to depositors, customers, shareholders, and the broader economy (Idolor, 2010). Fraud within the banking industry is a global issue, with far-reaching implications on public trust, financial soundness, and institutional performance (Olatunji, 2009). According to a global report by the Association of Certified Fraud Examiners (2020), the banking sector is one of the most vulnerable industries to fraud, accounting for 15.4% of all reported occupational fraud cases worldwide. The consequences of fraud can be devastating, leading to financial losses, reputational damage, and erosion of public trust. In Nigeria, the banking sector has experienced significant fraud-related challenges in recent years. The total fraud losses in the Nigerian banking sector in 2024 was quite alarming. According to the Financial Institutions Training Centre (FITC) (2024), the total amount lost due to fraud surged significantly in the first half of 2024. In the first quarter, the total loss was approximately ₦468.49 million, but by the second quarter, it had skyrocketed to ₦42.6 billion, representing an 8,993.04% increase. With these rising instances of fraud in the Nigerian banking sector, there is a necessity for an effective system to monitor and prevent its recurrence. Despite the critical role and increasing implementation of internal audit functions within organizations, fraud continues to pose significant threats to financial integrity and operational effectiveness. The

Financial Institutions Training Centre (FITC, 2024) reported a sharp increase in the total amount lost to fraud, rising from approximately ₦468.49 million in the first quarter to ₦42.6 billion in the second quarter—a staggering 8,993.04% increase. This alarming escalation underscores the urgent need for more robust fraud detection and prevention mechanisms in the Nigerian banking sector. It also raises critical concerns about the adequacy and effectiveness of internal audit functions in mitigating fraudulent activities. The absence of empirical data that connects the performance and practices of internal audit functions to measurable outcomes in fraud prevention highlights a significant gap in the understanding of how to enhance these audits to effectively reduce fraud risks. This gap emphasizes the need for further research to establish clear links between internal audit effectiveness and successful fraud mitigation strategies. Therefore, this study aims to investigate the relationship between the effect of internal audit on fraud prevention in Deposit Money Banks in Nigeria. Sequel to the objectives of the study, the following research questions will be addressed:

- i. To what extent does audit independence influence fraud prevention in deposit money banks in Nigeria?
- ii. What is the effect of Auditor's experience on fraud prevention in deposit money banks in Nigeria?

This study focuses on listed deposit money banks in Nigeria, Deposit Money Banks (DMBs) in Nigeria are more prone to fraudulent activities than other sectors due to a combination of structural, operational, and regulatory factors. These institutions manage vast volumes of financial transactions and sensitive data daily, making them attractive targets for fraud. Weak internal controls, poor risk management, and limited enforcement of regulations often create loopholes that fraudsters can exploit. The pressure on staff to meet performance targets, coupled with inadequate ethical standards and lack of whistleblower protection, further increases vulnerability. Additionally, the rapid digitization of banking services has introduced new cyber threats, especially where cybersecurity infrastructure is weak. The perception of banks as repositories of wealth makes them a primary focus for both internal and external fraud attempts. These interconnected factors collectively explain why DMBs in Nigeria experience a higher incidence of fraud compared to other sectors exploring.

2.0 LITERATURE REVIEW

Internal Audit

Internal audit is an independent and objective assurance and consulting activity carried out within an organization to evaluate and improve the effectiveness of risk management, internal control, and governance processes. Its main purpose is to help an organization achieve its goals by identifying weaknesses in processes, recommending improvements, and ensuring compliance with policies, procedures, and regulations. Internal auditors review financial and operational activities, assess how resources are managed, and check whether the organization is functioning efficiently, effectively, and ethically. Although they are employed by the organization, internal auditors must maintain professional independence to provide honest and unbiased evaluations to management and the board. Internal audit is to guarantee its efficiency in fulfilling organizational objectives. Effectiveness can be assessed by the extent to which targets set at the outset are met. An organization is considered effective if it successfully achieves its goals and aligns with its objectives while delivering benefits (Betri, 2018). An effective internal audit is guided by relevant audit standards, thoroughly planned, and includes a clear identification of objectives. It also considers the auditor's capabilities before executing tasks and evaluates the auditor team's proficiency in detecting errors.

Experts provide various definitions of internal audit, including the following: "Internal audit is an independent and objective process designed to build trust and provide guidance aimed at improving organizational operations and creating value" (Institute of Internal Auditors IIA, 2017). Additionally, it is stated that "Internal audit involves analyzing, offering recommendations, and conducting evaluations, along with effective monitoring at a reasonable cost" (IIA, 2017). The internal auditor is tasked with planning and executing audit

activities, which require approval and review or revision by management. The primary goal of internal audit is to support management in fulfilling their responsibilities by offering insights into the adequacy and efficiency of the organization's internal controls as well as the quality of its operations. Internal audit encompasses the analysis, evaluation, and presentation of recommendations to senior management, which should be addressed to enhance current practices based on the findings. These objectives collectively contribute to the overall governance framework of an organization, ensuring that it operates effectively and achieves its strategic goals. They include: improving the efficiency and effectiveness of organizational operations by identifying areas for improvement and recommending best practices; assessing the organization's risk management processes; ensuring compliance with laws, regulations, and internal policies; and verifying the integrity and accuracy of financial reports and statements.

Audit Independence

Audit independence remains a foundational principle within the auditing profession, underpinning the objectivity and impartiality required during audit engagements (Gray, Manson, & Crawford, 2015). Its importance lies in preserving the integrity of the audit process and ensuring stakeholders have confidence in the financial statements prepared by organizations (IFAC, 2022). When auditors maintain independence, they are better positioned to provide unbiased opinions, which is vital for safeguarding public interest, enhancing the credibility of financial reporting, and supporting informed decision-making by users of financial statements (IAASB, 2020). In contemporary business environments—characterized by increasing complexity and the heightened risk of financial misconduct—auditor independence plays a critical role in fraud prevention and regulatory compliance (PCAOB, 2017). A lack of independence can compromise the audit's effectiveness, erode trust in the auditor's work, and potentially conceal financial irregularities. Thus, adherence to independence standards is not merely a regulatory requirement but a professional imperative that reinforces the reliability and transparency of financial disclosures (Gray et al., 2015). Complementing independence is the concept of auditor experience, which encompasses the knowledge, technical skills, and professional exposure acquired over time through various audit assignments (Knechel, Vanstraelen, & Zerni, 2015). An experienced auditor is typically more adept at identifying risks, evaluating the sufficiency of internal controls, and detecting signs of potential fraud. Practical exposure to different industries and client environments enhances an auditor's ability to apply professional judgment and respond appropriately to complex audit scenarios. Experience significantly influences the effectiveness of the audit process, particularly in areas requiring professional skepticism and critical assessment. Studies have shown that auditors with greater experience tend to demonstrate improved audit quality and are more effective in fraud detection and prevention (DeFond & Zhang, 2014). Therefore, fostering both independence and experience among audit professionals is essential to maintaining high audit standards and reinforcing stakeholder confidence in financial reporting.

The fraud detection ability of auditors is indeed positively influenced by experience. An experienced auditor is more adept at recognizing red flags, having encountered a variety of fraudulent schemes over the years. This depth of exposure sharpens their professional judgment and skepticism two cornerstones of effective auditing. Literature in audit research (e.g., DeFond & Zhang, 2014; Knechel et al., 2015) confirms that with increased exposure to real-world scenarios, auditors develop a more intuitive grasp of risk patterns, enabling them to investigate anomalies and probe deeper where necessary. In this way, auditor experience significantly bolsters the reliability of audit outcomes and enhances fraud detection. Also, experienced auditors often understand the client's business environment more comprehensively. This familiarity allows them to identify inconsistencies not just in the financial data, but also in operational behavior and industry norms. Such knowledge is crucial for assessing risks and identifying transactions that deviate from expected patterns—common signals of fraudulent activity. A core attribute that distinguishes experienced auditors is their level of professional skepticism. Rather

than accepting information at face value, they question underlying assumptions, validate evidence rigorously, and remain alert to potential bias or misrepresentation. This mindset is essential for conducting audits in environments where fraud risk is elevated, such as in high-pressure or low-governance settings. Another area where experience proves valuable is in the quality of audit decisions. With exposure to diverse audit contexts, seasoned auditors are more adept at tailoring audit procedures to specific risks. They can draw from past engagements to decide how best to allocate resources or focus their inquiry, thereby enhancing audit efficiency and effectiveness.

Turning to the concept of fraud prevention, the discussion rightly highlights the importance of distinguishing between error, irregularity, and fraud. Errors, typically unintentional, differ markedly from irregularities and fraud, which involve deliberate acts. Fraud is especially dangerous because it requires intent typically involving a perpetrator, an object (e.g., assets or financial reporting), and a victim. Understanding this triad is essential for designing controls and preventive measures. Fraud prevention, is not just about implementing controls, but about building an organizational culture that minimizes opportunities, pressures, and rationalizations for fraud. These three components—mirroring the Fraud Triangle developed by Donald Cressey form the basis of many anti-fraud frameworks. Strong internal controls, effective whistleblower policies, ethics training, and transparent leadership all contribute to an environment that discourages fraud. This detailed overview ties together theoretical and practical elements of audit practice and organizational governance. By linking auditor competence especially experience and skepticism with fraud prevention strategies, the statement underscores the interconnected nature of audit quality and corporate integrity.

Audit Independence and Fraud Prevention

Jiaxu (2022), examined audit independence constrains the work of auditors and provides certain guarantees for the quality of audit execution. Audit independence is affected by various factors, such as the development of non-audit services, the completeness of audit procedures, and the auditors' competence. This paper takes the typical audit failure cases such as the Enron incident, the Zhenlong audit failure, and the financial fraud audit of Kangmei Pharmaceutical as examples, and conducts a case analysis on the influence of different factors on audit independence in these audit failure cases. The conclusion shows that strengthening audit independence should be done by improving the service quality of firms, the professional competence of certified public accountants, the engagement mechanism and external supervision.

Sinaga (2024), analyzed the influence of independence, integrity, professionalism, objectivity, and ethics on fraud prevention among auditors. Additionally, this study also treats the auditor's ethics as a moderating variable. Conducted through survey methodology, the study involved distributing questionnaires to all auditors in the Audit Board of the Republic of Indonesia (or BPK) Regional Office for North Sulawesi Province. The questionnaires were disseminated to 138 respondents and achieving for 100% response rate. Analytical methods employed encompassed multiple moderated regression analysis. The results indicate that independence, integrity, professionalism, objectivity, and ethics positively influence fraud prevention. Moreover, the results also reveal that the auditor's ethics can moderate the influence of independence and professionalism on fraud prevention. The implications of the findings suggest that higher levels of independence, integrity, professionalism, objectivity, and ethics tend to increase effectiveness in fraud prevention within the BPK Regional Office for North Sulawesi Province.

Lonto et al. (2023) explored the measurement of the effectiveness of internal audits from the perception of internal auditors to prevent fraud. It examines the antecedents that affect the effectiveness of internal audits to

prevent fraud. This study uses a mixed-method exploratory sequential design approach called instrument development design. This research's unit of analysis is the local government's internal auditor, namely the Financial and Development Supervisory Agency (BPKP), representing the Province of North Sulawesi, and the Inspectorate of the entire Province of North Sulawesi. The data collected were 165 questionnaires, and the analysis technique used PLS. The results of this study, audit effectiveness for fraud prevention is affected by audit quality. Then, the higher the independence of the internal auditor's functions in audit assignment, the better the audit quality, which will increase the effectiveness of internal audit in preventing fraud.

Wedi and Tony (2023), determine whether the independence, objectivity, skills, and professional accuracy of the internal auditors affect the prevention of fraud in X Hospital. This research uses a population with a total of 54 respondents. The type of data used in this study is quantitative data using primary data sources derived from questionnaires distributed to employees at X Hospital and then processed using SPSS. The results of the study show that (1) the independence of the internal auditors has a significant effect on fraud prevention, (2) the objectivity of the internal auditors has a significant effect on fraud prevention, (3) the competence of the internal auditors has a significant effect on fraud prevention and (4) the professional accuracy of the internal auditors has a significant effect on fraud prevention.

Audit Experience and Fraud Prevention

Ovie (2022) assessed internal audit and fraud prevention in Nigerian banking industry. The theory on which the subject of the study was based was the concealment theory. The population of the study comprises 22 banks. The study's sample size is the Accounts and Internal Audit Department of Five (5) Banks. Six (6) Questionnaire items were drawn from Two (2) Research Questions which were administered directly to the sampled Banks using the method of Telephonic Interviewing and emailing. Mean and Rank Order Method statistical tools were used. The major findings are that Internal Control Systems should be put in place to Prevent Fraud in Nigeria's Banking Industry; to ensure that operational systems are designed with inbuilt control devices, established an encouraging work environment that propels employees to follow established policies and procedures, and operate in the best interest of the bank and the need to hire honest people and perform expected- and unexpected-audits. It is therefore recommended that the government through its relevant ministries, agencies, and department, Nigeria Deposit Insurance Corporation (NDIC), and other Corporate Bodies should review the fraud detection and prevention policies not limited to just Internal Audit but automation using artificial intelligence relating to fraud detection and prevention should be adopted.

Eka et al. (2024), ascertain the impact of internal audit effectiveness and continued professional commitment to fraud detection with internal auditors' quality as a moderating variable. Seventy-eight questionnaires were distributed to internal auditors and supervisors at the Inspectorate of Riau City, Indonesia, who had at least two years of experience. Structural equation modeling (SEM) software was used for the data analysis. According to the study's findings, the effectiveness of internal control and the effectiveness of internal auditors both have an impact on fraud detection. However, ongoing professional commitment has no impact. Quality of internal auditors does not affect the relationship between the effectiveness of internal audits, the effectiveness of internal control, continued professional commitment, and fraud detection. The findings of this study can be used as guidance for management to enhance the performance of internal auditors and for considerations and assessments for fraud detection in the public sector.

Khairini et al. (2022), determined the effect of internal audit in preventing and disclosing fraud. The number of frauds that occur in an organization shows the need for an internal audit body in the company so that can reduce

or even eliminate fraud that occurs. This literature review is a study of the role of internal audit in preventing and disclosing fraud which aims to find out the variables in internal audit for preventing and disclosing fraud based on previous studies. Of the ten studies included in this literature review, there are differences in research results. Eight studies state that internal audit has a significant effect on preventing and disclosing fraud, but two articles state that internal audit does not have a significant effect on preventing and disclosing fraud.

Nwaobia (2012) investigated the internal auditor's qualities of ICT competency skill, qualification and experience and independence and their direct effect on the detection of fraudulent financial reporting in banks. The study made use of a cross-sectional survey design with population of 471 employees in the internal audit departments of selected 10 banks in Nigeria. A structured and validated questionnaire was used to collect data from a sample of 216 internal auditors. Cronbach's Alpha reliability coefficients for the constructs ranged from 0.702 to 0.837. A response rate of 100% was achieved. The study revealed that internal audit positively and significantly affects detection of fraudulent financial reporting and internal auditors' qualities significantly moderated the effect of internal audit on the detection of fraudulent financial reporting. It was concluded that internal audit is germane in curbing the incidence of fraudulent activities in the Nigeria banks. The study submitted that emphasis be placed on efficient internal control systems within listed banks in Nigeria. The internal auditors need to be up to date in ICT skills in order to prevent and detect frauds of various forms within the banking industry in Nigeria.

Yulindah (2024) analyze and apply grand theory to the determining factors of SPI personnel's ability as internal auditors in educational sector institutions, namely competence, independence, work experience, professional skepticism and spiritual intelligence in the prevention and detection of fraud in state universities and apply research variables to state university management who want to improve the internal audit function (SPI). This research uses quantitative methods. The data source used in this research is primary data measured using a Likert scale obtained directly from respondents via a questionnaire. The population in this study were all SPI personnel at PTN Indonesia in the State University category under the auspices of the Ministry of Education, Culture, Research, Technology and Higher Education. The sampling technique is using a census technique or total sampling with a sampling method using the non-probability sampling _ Convenience Sampling method. The analysis technique uses IBM Statistical Product and Service Solution (SPSS) 24.0 software. Partial and simultaneous research results show that competence, work experience, professional skepticism and spiritual intelligence have a positive and significant effect on fraud prevention and detection, while independence does not have a positive and significant effect on fraud prevention and detection.

Theory of Fraud Hexagon

Vousinas (2019) proposed the Fraud Hexagon Theory, derived from the Pentagon Theory (SCORE), which encompasses Stimulus (pressure), Capacity (capability), Opportunity, Rationalization, and Ego. Vousinas updated this model by incorporating collusion, thus forming the SCORE framework. Pressure is a significant motivator for committing fraud, influenced by lifestyle, economic needs, and various financial and non-financial issues. Capability refers to an individual's ability to exploit circumstances that facilitate fraud (Vousinas, 2019). Collusion involves a secret agreement between two or more individuals to deceive another party (Vousinas, 2019). Opportunity arises from inadequate monitoring and the abuse of power, providing a catalyst for fraudulent actions (Lastanti, 2020).

Rationalization can lead individuals to commit fraud, often manifesting during stressful times when they perceive fraudulent actions as acceptable. Ego reflects an attitude of superiority over authority, suggesting that

company policies do not apply to them (Vousinas, 2019). The Fraud Hexagon is an evolving theory that delves deeper into the triggers of fraud. It builds on Cressey's (1953) Fraud Triangle, which identifies three conditions for fraud: pressure, capability, and rationalization. This triangle was later expanded into the Fraud Diamond by Wolfe and Hermanson (2004), which added opportunity as a fourth factor. Arrogance continues to be recognized as a significant driver of fraudulent behavior. The Fraud Hexagon incorporates insights from various theories, including the Fraud Triangle, Fraud Diamond, New Fraud Diamond Model, and Fraud Pentagon, ultimately presenting a comprehensive framework for understanding fraud triggers. Vousinas (2019) further developed this model by including collusion as an additional factor.

3.0 METHODOLOGY

This study presents a conceptual review that synthesizes existing literature on the role of internal audit in preventing fraud, with the aim of deepening understanding of how internal audit functions contribute to fraud mitigation in organizational settings. The review is grounded in secondary data drawn from national and international academic articles, peer-reviewed journals, and authoritative sources that align with the subject of interest. By systematically examining theories, empirical findings, and conceptual frameworks from prior research, the study identifies key variables and themes central to the discourse on fraud prevention through internal auditing. The methodology employed involves a qualitative literature analysis using a structured three-stage approach as outlined by Bungin (2017). First, data reduction was carried out to filter and retain only the most relevant and thematically aligned studies. Second, the presentation of data was conducted through a descriptive synthesis that organizes findings into categories, allowing for clearer identification of patterns and relationships across studies. Lastly, conclusion drawing involved interpreting the presented data to generate insights that directly address the research question regarding internal audit's role in fraud prevention. The articles reviewed consistently highlight that internal audit serves not merely as a control function but also as a strategic component in organizational governance. Several studies emphasize the importance of audit independence, professional competence, risk-based audit planning, and auditor objectivity as critical factors that enhance fraud detection and prevention. Furthermore, it is evident from the literature that internal audit's effectiveness depends significantly on its positioning within the organizational structure, especially in terms of reporting lines and support from top management. This conceptual review reinforces the notion that internal audit plays a proactive and preventive role in identifying potential fraud risks, assessing internal control weaknesses, and recommending improvements. As a result, the internal audit function emerges as a cornerstone of effective corporate governance and organizational integrity.

Table 1: List of Reviewed Literature

Researcher	Year	Title	Findings
Sinaga, I. R., Sondakh, J. J., & Warongan, J. D. L.	2024	The influence of independence, integrity, professionalism, and objectivity on fraud	The results indicate that independence, integrity, professionalism, objectivity, and ethics
		prevention in auditors with auditor ethics as a moderating variable: Empirical study at the Representative Office of the Supreme Audit Agency in North Sulawesi Province.	positively influence fraud prevention.

Eka H., Supriono S., Rheny A. H., Sem P. S., & Meilda W.	2024	Determinants influencing fraud detection: Role of internal auditors' quality. Problems and Perspectives in Management	The findings revealed that the effectiveness of internal control and the effectiveness of internal auditors both have an impact on fraud detection. Quality of internal auditors does not affect the relationship between the effectiveness of internal audits, the effectiveness of internal control, continued professional commitment, and fraud detection.
Yulindah, Y. S., & Emylia, Y.	2024	Determinants of the Ability of Spi Personnel in the Prevention and Detection of Fraud at State Universities (PTN) in Indonesia	Partial and simultaneous research results show that competence, work experience, professional skepticism and spiritual intelligence have a positive and significant effect on fraud prevention and detection, while independence does not have a positive and significant effect on fraud prevention and detection.
Lonto, M. P., Sukoharsono, E. G., Baridwan, Z. & Prihatiningtias, Y. W.	2023	The effectiveness of internal audit for fraud prevention	The results of this study, audit effectiveness for fraud prevention is affected by audit quality. Then, the higher the independence of the internal auditor's functions in audit assignment, the better the audit quality, which will increase the effectiveness of internal audit in preventing fraud.

Ovie, A. P.	2022	Internal audit and fraud prevention in Nigeria banking industry	The major findings are that Internal Control Systems should be put in place to Prevent Fraud in Nigeria's Banking Industry; to ensure that operational systems are designed with inbuilt control devices, established an encouraging work environment that propels employees to follow established policies and procedures, and operate in the best interest of the bank and the need to hire honest people and perform expected- and unexpected- audits.
Wedi, R. K., & Tony, P.	2023	The influence of independence, objectivity, proficiency and professional accuracy of internal auditors on fraud prevention in x hospital	The results of the study show that the independence of the internal auditors has a significant effect on fraud prevention, the competence of the internal auditors has a significant effect on fraud prevention and the professional accuracy of the internal auditors has a significant effect on fraud prevention.
Khairini et al.	2022	Determined the effect of internal audit in preventing and disclosing fraud.	Of the ten studies included in this literature review, there are differences in research results. Eight studies state that internal audit has a significant effect on preventing and disclosing fraud, but two articles state that internal audit does not have a significant effect on preventing and disclosing fraud.

Jiaxu Zhang	2022	Factors affecting audit independence: A case study based on the failure of typical financial fraud audits	The conclusion shows that strengthening audit independence should be done by improving the service quality of firms, the professional competence of certified public accountants, the engagement mechanism and external supervision.
Nwaobia, A. N., Omotayo, I. I., & Ajibade A.	2021	Internal audit and fraud detection in selected banks listed in Nigeria.	The study revealed that internal audit positively and significantly affects detection of fraudulent financial reporting and internal auditors' qualities significantly moderated the effect of internal audit on the detection of fraudulent financial reporting.

4.0 RESULT AND DISCUSSIONS

The findings from the reviewed literature reveal a complex and, at times, inconsistent relationship between internal audit functions and their effectiveness in fraud prevention and detection. Several studies emphasize the positive influence of key internal audit attributes such as independence, professionalism, objectivity, and integrity on the prevention of fraud. For instance, Sinaga et al. (2024) confirmed that these characteristics, along with auditor ethics as a moderating factor, significantly enhance fraud prevention efforts. Similarly, Eka (2024) affirmed that the effectiveness of both internal controls and internal auditors plays a critical role in detecting fraud, although the study noted that auditor quality does not significantly moderate this relationship. However, contrasting findings are also evident. Yulindah and Emylia (2024), while agreeing on the broader relevance of internal audit to fraud prevention, concluded that audit independence does not significantly influence fraud prevention in the context of Indonesian state universities. This finding diverges from Wedi and Tony (2023), who identified a significant effect of auditor independence, competence, and professional precision on fraud prevention. The divergent outcomes can be attributed to contextual differences in research settings, institutional structures, and governance practices across the studies. Lonto et al. (2023) highlighted that audit independence contributes to higher audit quality, which in turn enhances fraud detection. This aligns with the findings of Nwaobia and Omotayo (2021) in Nigeria, who reported that internal audit significantly impacts the detection of fraudulent financial reporting, with auditor quality acting as a moderating variable.

Khairini et al. (2022), through a meta-analysis of ten studies, further illustrated this divide: eight studies affirmed the significant impact of internal audit on fraud prevention and disclosure, while two did not. These inconsistencies highlight the need for a more harmonized framework that considers organizational culture, regulatory environments, and auditor capabilities. Overall, the findings suggest that internal audit serves as a vital mechanism for assessing the strength of internal controls and mitigating fraud risks. However, for internal audits to be effective, several conditions must be met. These include continuous professional training for

auditors, direct reporting lines to senior management to safeguard audit independence, and close collaboration between the internal audit unit, audit committee, and other organizational departments. Furthermore, effective fraud prevention depends not only on identifying risks but also on management's willingness to implement audit recommendations. In instances where internal audit programs, risk assessments, and auditor competencies are misaligned, fraud risks may remain unaddressed. Therefore, strengthening audit functions through enhanced governance structures and cross-functional collaboration is essential for improving fraud detection and prevention outcomes.

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