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We hope you will learn from this publication.

Thank you.

The Chief Editor.

INDEMNITY

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Influence of Reinsurance on Financial Stability of Insurance Companies in Nigeria

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Abstract

This study examined the influence of reinsurance on the financial stability of insurance companies in Nigeria from 2012 to 2023. Using a panel data regression approach, financial data from 30 insurance companies were analysed to determine the effects of reinsurance on key performance indicators such as Return on Assets (ROA) and Net Profit Margin (NPM). The results indicate that while reinsurance enhances risk management and solvency, excessive reliance negatively affects profitability due to high ceded premiums. The ratio of ceded reinsurance (RCR) significantly reduces ROA ($\beta = -0.1204$, $p < 0.001$) and NPM ($\beta = -0.0872$, $p = 0.083$). Underwriting risk scores negatively affect ROA ($\beta = -0.0918$, $p < 0.001$), underscoring the need for sound underwriting practices. Macroeconomic factors such as inflation positively influence ROA ($\beta = 0.0043$, $p = 0.018$), while exchange rate volatility negatively impacts profitability ($\beta = -0.00004$, $p = 0.048$). The study concludes that while reinsurance is essential for risk mitigation and financial stability, over-reliance can erode profitability. It recommends optimizing reinsurance strategies by balancing risk transfer costs with financial performance and strengthening local reinsurance capacity to minimize foreign exchange risks.

Keywords: Reinsurance, Financial Stability, Profitability, Risk Management, Nigerian Insurance Sector

INTRODUCTION

The Nigerian insurance industry plays a crucial role in economic stability by providing financial protection against risks. However, insurers face challenges such as high claims volatility, regulatory capital requirements, and economic uncertainties, which threaten their solvency and profitability. To manage these risks, insurers engage in reinsurance, a mechanism that transfers a portion of their liabilities to reinsurers in exchange for a premium. Reinsurance enhances an insurer's ability to underwrite large policies, stabilize earnings, and comply with solvency regulations (Lin *et al.*, 2024).

While reinsurance is widely recognized for improving financial stability, its effect on profitability remains unclear. On one hand, reinsurance reduces insolvency risk and strengthens insurers' ability to absorb shocks (Aduloju & Ajemunigbohun, 2017). On the other hand, excessive reinsurance reliance can erode profitability due to high ceded premiums, reduced retained earnings, and foreign exchange risks (Bressan, 2018; Biru, 2020). The optimal level of reinsurance utilization that balances risk mitigation with financial performance remains a critical concern for insurers and regulators alike.

Despite its significance, empirical research on reinsurance in Nigeria is limited. Existing studies focus primarily on non-life insurance, with little attention given to the life and health insurance sectors (Dansu & Obalola, 2018). Additionally, previous research relies on cross-sectional data, overlooking the long-term financial implications of reinsurance (Muazaroh, 2023**).** Furthermore, macroeconomic factors such as inflation, exchange rate fluctuations, and GDP growth—which can influence reinsurance effectiveness—have not been adequately integrated into prior studies.

To bridge these gaps, this study conducts a longitudinal analysis (2012–2023) to examine the impact of reinsurance utilization on the financial stability of Nigerian insurers, focusing on Return on Assets (ROA) and Net Profit Margin (NPM). The findings will offer valuable insights for insurers, regulators, and policymakers in optimizing reinsurance strategies.

Research Objectives

The study aims to:

1. Evaluate the impact of reinsurance on the Return on Assets (ROA) of insurance companies in Nigeria.
2. Evaluate the impact of reinsurance on the Net Profit Margin (NPM) of insurance companies in Nigeria between 2012 and 2023.

Research Questions

To achieve these objectives, the study seeks to answer the following questions:

1. What is the impact of reinsurance utilization on the Return on Assets (ROA) of insurance companies in Nigeria?
2. How does reinsurance utilization influence the Net Profit Margin (NPM) of Nigerian insurers?

Research Hypotheses

The study tests the following hypotheses:

Null Hypotheses (H_0):

H_{01}: Reinsurance has no significant impact on the Return on Assets (ROA) of insurance companies in Nigeria.

H_{02}: Reinsurance has no significant impact on the Net Profit Margin (NPM) of insurance companies in Nigeria.

Alternative Hypotheses (H_1):

H_{11}: Reinsurance has a significant impact on the Return on Assets (ROA) of insurance companies in Nigeria.

H_{12}: Reinsurance has a significant impact on the Net Profit Margin (NPM) of insurance companies in Nigeria.

LITERATURE REVIEW

Conceptual Review

Concept of Reinsurance

Reinsurance serves as a vital risk management strategy for insurance companies, allowing them to transfer a portion of their liabilities to reinsurers in exchange for a premium. This mechanism enhances insurers' financial stability by reducing risk exposure, ensuring solvency, and enabling them to underwrite larger policies than their capital base would ordinarily allow (Lin *et al.,* 2024). The use of reinsurance also facilitates compliance with regulatory capital requirements, ensuring that insurers can meet their long-term financial obligations (Cummins & Weiss, 2014**).** However, while reinsurance mitigates volatility in claims and financial distress, excessive reliance on it can lead to lower profitability due to high ceded premium costs and reduced retained earnings (Weiss & Chung, 2004).

The effectiveness of reinsurance largely depends on the structure of the reinsurance arrangement. Proportional reinsurance involves the insurer and reinsurer sharing premiums and claims in a fixed proportion. In contrast, non-proportional reinsurance covers losses only when they exceed a pre-agreed threshold (Shah & Ahmed, 2024). Proportional reinsurance, such as quota share and surplus share agreements, provides more predictable financial relief by distributing risk evenly. However, it often results in higher ceded premiums, which can reduce profitability. Non-proportional reinsurance, such as excess-of-loss and stop-loss agreements, is beneficial for protecting insurers from catastrophic losses while allowing them to retain more premium income. The choice between these types of reinsurance depends on an insurer's risk appetite, regulatory constraints, and capital structure (Park *et al.,* 2021).

Financial Stability and Profitability in the Insurance Industry

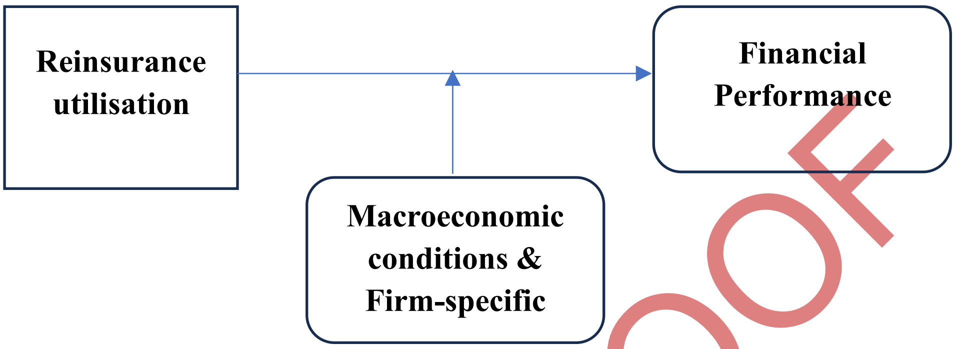
Financial stability in the insurance sector refers to an insurer's ability to meet its financial obligations, maintain solvency, and generate sustainable profits. A financially stable insurer can absorb large claims, maintain consistent cash flow, and comply with regulatory requirements (Cummins *et al.,* 2017). Stability is typically measured using key financial indicators, including Return on Assets (ROA), Net Profit Margin (NPM) and Solvency Ratio. ROA is a measure of profitability that reflects how efficiently an insurer utilizes its assets to generate earnings while NPM Indicates the percentage of revenue that remains as profit after expenses, including reinsurance costs. The solvency ratio assesses an insurer's ability to meet its long-term liabilities and is critical for regulatory compliance (Adams et al., 2008).

Reinsurance and Macroeconomic Factors

The effectiveness of reinsurance is influenced by macroeconomic conditions such as inflation, exchange rate fluctuations, and GDP growth. Inflation increases claims costs, which can erode profitability, while exchange rate volatility impacts the cost of reinsurance, particularly for insurers relying on foreign reinsurers (Andoh & Yamoah, 2021). In emerging markets like Nigeria, insurers frequently purchase reinsurance from international firms due to limited local reinsurance capacity, exposing them to currency risks (Osifodunrin& Lopes, 2022). Additionally, GDP growth affects the demand for insurance products, with higher economic expansion typically leading to increased insurance penetration (Arena, 2008). These macroeconomic factors must be considered when evaluating the impact of reinsurance on insurers' financial performance.

Conceptual Framework for the Study

The conceptual framework of this study illustrates the relationship between reinsurance utilization and financial performance, taking into account moderating factors such as macroeconomic conditions. The framework is based on the premise that reinsurance utilization, while essential for risk mitigation, can have both positive and negative implications for insurers' financial performance.



Independent Variable: Reinsurance Utilization

Reinsurance utilization is measured using the Ratio of Ceded Reinsurance (RCR), which represents the proportion of total gross written premiums ceded to reinsurers. A higher RCR indicates greater reliance on reinsurance, which can enhance stability but may reduce profitability due to ceded premium costs. Conversely, a lower RCR suggests that the insurer retains more risk internally, which may increase earnings but also exposes the company to higher claim volatility (Biru, 2020b).

Dependent Variables: Financial Performance Indicators

Financial performance is assessed using two key metrics including Return on Assets (ROA) and Net Profit Margin (NPM). ROA measures an insurer's profitability relative to its total assets. A lower ROA suggests inefficiency in asset utilization, which may be influenced by high reinsurance costs (Bressan, 2018). NPM, on the other hand, evaluates profitability by measuring how much profit remains after all expenses, including reinsurance, have been deducted from revenue. Insurers with a high NPM are generally more profitable and financially stable (Cummins *et al.,* 2017).

Moderating Variables: Macroeconomic and Firm-Specific Factors

To control for external and internal influences on financial performance, the study incorporates macroeconomic and firm-specific factors. The macroeconomic factors include inflation rate, exchange rate volatility and GDP growth rate. High inflation increases claim costs, reducing profitability (Arena, 2008). Exchange rate volatility affects reinsurance costs for firms relying on offshore reinsurers (Andoh & Yamoah, 2021). GDP Growth can increase insurance demand and improve premium income (Tugsjargal, 2024).

The firm-specific factors used include underwriting risk score, company size (total assets) and leverage (debt-to-equity ratio). Higher underwriting risk increases the likelihood of claim payouts, affecting profitability (Aduloju&Ajemunigbohun, 2017).

Larger firms may have better risk diversification, reducing dependency on reinsurance (Park et al., 2021) while highly leveraged firms may experience liquidity challenges when managing reinsurance costs (Powell & Sommer, 2005).

Theoretical Framework

This study is based on the Risk Management Theory. This theory posits that firms engage in risk transfer mechanisms, such as reinsurance, to mitigate uncertainties and ensure financial stability (Balaji et al., 2024). Insurance companies face unpredictable claims fluctuations, and reinsurance helps in smoothing losses over time, thus reducing insolvency risk. In the Nigerian context, economic volatility, regulatory requirements, and catastrophic risks necessitate effective risk management strategies. By applying Risk Management Theory, this study evaluates whether reinsurance utilization enhances the financial stability of Nigerian insurers over the long term.

Empirical Review

Aduloju and Ajemunigbohun (2017) examined the impact of reinsurance on the performance of Nigerian insurance companies, focusing on gross premium income, underwriting profit, and financial stability. Using a combination of primary data from 246 respondents and secondary data from 10 insurance companies' 2014–2015 financial statements, the study employed correlation analysis. The results indicated a strong positive correlation between reinsurance capacity and gross premium income ($r = 0.817$, $p < 0.01$), suggesting that reinsurance enhances insurers' ability to write more policies and reduce insolvency risk. However, the study was limited by its short time frame (two years), which may not capture long-term effects.

Andoh and Yamoah (2021) investigated the impact of reinsurance on the profitability of 20 non-life insurance companies in Ghana from 2008 to 2018. Using panel regression analysis, they found that reinsurance alone had no significant effect on profitability (coefficient: -0.0201, $p = 0.672$). However, when reinsurance was combined with solvency ratio, it significantly reduced profitability (coefficient: -0.1879, $p = 0.016$). The study suggested that insurers must balance solvency management with reinsurance strategies to avoid adverse profitability effects. A limitation was that the study did not differentiate between proportional and non-proportional reinsurance effects.

Biru (2020a) analyzed the effect of reinsurance dependency on profitability in Ethiopian property and casualty insurers. Using panel data regression on 72 firm-year observations from 2011–2016, the study found a negative relationship between reinsurance dependency and profitability (measured by ROA). High ceded premiums were identified as the main reason for reduced profits, supporting the view that over-reliance on reinsurance weakens financial performance. However, the study focused only on property and casualty insurers, neglecting other insurance sectors.

Park *et al.* (2021) examined the impact of internal and external reinsurance on the profitability and pricing strategies of U.S. property and casualty insurers. Using a two-stage least squares (2SLS) regression model across 11,894 firm-year observations (2001–2009), they found that external reinsurance negatively affects profitability due to high costs, while internal reinsurance improves profitability by leveraging internal capital market efficiencies. This study is significant in highlighting that not all reinsurance arrangements have the same financial effects, but it was limited to property and casualty insurance, excluding life insurance firms.

Powell and Sommer (2005) analyzed the costs and benefits of internal versus external reinsurance in the U.S. insurance market. The study used two-stage least squares (2SLS) regression models and found that internal reinsurance is more cost-effective due to reduced information asymmetry. They reported that firms with high leverage relied more on external reinsurance, which was found to be more expensive and less efficient. While insightful, the study did not incorporate macroeconomic variables such as inflation and exchange rates, which influence reinsurance effectiveness.

Kajwang (2022) examined the role of reinsurance in economic stability, emphasizing its importance in maintaining solvency and business continuity. The study found that without reinsurance, high-risk industries would struggle to operate, as insurers would be unable to absorb large losses. The study highlighted that reinsurance contributes to economic resilience by spreading risks across different markets and reinsurers, but it did not provide quantitative analysis to measure its economic impact.

Kramarić *et al.* (2019) explored the determinants of financial stability for insurers in Croatia, Hungary, and Poland from 2013 to 2017 using panel regression models. The findings indicated that firm size positively affects financial stability (coefficient: 0.3649, $p < 0.05$) in Croatia, while reinsurance enhances financial stability in Hungary and Poland (Hungary: 0.0073, $p < 0.10$; Poland: 0.0261, $p < 0.10$). The study underscores the regional variations in reinsurance effectiveness, though it does not explore profitability implications.

Tugsjargal (2024) investigated the profitability effects of reinsurance on general insurers in Mongolia (2016–2022). Using panel regression analysis, the study found that reinsurance negatively affects profitability (coefficient: -0.0747, $p = 0.067$) due to high ceded premium costs. The study highlights that investment income (coefficient: 0.241, $p = 0.0007$) can offset reinsurance expenses, suggesting that diversified revenue streams improve financial stability. However, the study was limited by its small sample size (10 insurers).

Polyakova and Polyakov (2021) analyzed the impact of reinsurance on the financial performance of Russian insurers (2014–2018). Using panel regression models, they found that reinsurance negatively affects short-term profitability (coefficient: -0.028, $p < 0.05$) due to outgoing cash flows from ceded premiums. However, the study acknowledged that in the long term, reinsurance enhances financial stability by mitigating risk exposure. The research did not, however, control for different types of reinsurance agreements, which could influence outcomes.

Santri (2023) investigated reinsurance arrangements and legal responsibilities in the insurance sector using a normative legal approach. The study highlighted the importance of reinsurance contracts in ensuring financial protection for insurers and policyholders. A key finding was that legal frameworks and contract clarity significantly affect the success of reinsurance agreements. However, the study lacked quantitative financial data, making it difficult to assess the economic impact of reinsurance policies.

McLaughlin (2006) analyzed how reinsurance enhances financial resilience to catastrophic events. Focusing on post-2005 U.S. hurricanes, the study found that global reinsurance markets effectively mitigate financial shocks, preventing insolvencies. However, the study emphasized that rising reinsurance costs due to climate risks could reduce affordability for primary insurers.

Cummins and Weiss (2014) examined the role of reinsurance in managing catastrophe risks using a panel dataset of 32 countries (1990–2012) and GLS regression. The study found that reinsurance enhances solvency ($p < 0.01$) but increases insurers' risk-taking incentives. It concluded that reinsurance is most effective when combined with strong risk management policies. A limitation was its focus on catastrophe risk without analyzing general profitability metrics.

Adams *et al*. (2005) investigated reinsurance demand determinants among UK life and non-life insurers (1985–2000) using fixed-effects regression. Results showed that highly leveraged insurers purchase more reinsurance ($p < 0.05$) to mitigate insolvency risks. The study also found that firms with higher underwriting risks rely more on reinsurance for earnings stability. A limitation was not accounting for macroeconomic influences on reinsurance decisions.

Cole and McCullough (2006) analyzed the profitability impact of reinsurance use in the U.S. property and casualty sector (1995–2003) using two-stage least squares (2SLS) regression. Findings indicated that greater reinsurance reliance leads to lower profitability due to high ceded premiums (coefficient: -0.042, $p < 0.05$). The study emphasized the importance of optimizing reinsurance usage but was limited by its focus on short-term profitability effects.

Kader *et al.* (2010) examined reinsurance and financial performance in French insurers (1998–2007) using dynamic panel regression models. Results indicated that reinsurance improves solvency but negatively affects profitability ($p < 0.01$) due to cash outflows from ceded premiums. The study suggested balancing reinsurance use with internal risk management. A limitation was not differentiating between proportional and non-proportional reinsurance effects.

Summary and Research Gap

The foregoing studies reveal a complex relationship between risk mitigation, profitability, and financial stability. Several studies suggest that reinsurance enhances solvency and premium growth, allowing insurers to underwrite more policies and reduce insolvency risks. However, other studies highlight that excessive reliance on reinsurance erodes profitability due to high ceded premium costs, limiting retained earnings and reducing return on assets. The impact of reinsurance on profitability was also observed to vary depending on firm size, reinsurance type (proportional vs. non-proportional), and leverage levels, with larger firms and those using internal reinsurance structures better positioned to optimize costs. Some research points to regional and market-specific differences, where reinsurance strengthens financial stability in some economies but has insignificant or negative effects in others, particularly in emerging markets with weaker local reinsurance capacity. Additionally, macroeconomic factors such as inflation, exchange rate fluctuations, and GDP growth play a critical role in shaping reinsurance effectiveness, yet many studies fail to incorporate these variables. Furthermore, while studies recognize reinsurance's role in absorbing catastrophic losses and ensuring economic resilience, most focus on short-term effects, neglecting long-term profitability implications. There is also limited research on the legal and regulatory frameworks governing reinsurance arrangements, as well as how insurers' risk management strategies influence financial outcomes. These gaps highlight the need for a comprehensive, long-term analysis of reinsurance effectiveness, particularly in emerging markets where regulatory dynamics, macroeconomic instability, and sectoral variations shape reinsurance's impact on financial performance.

RESEARCH METHODOLOGY

This study adopted a quantitative research design to comprehensively examine the influence of reinsurance on the financial stability of insurance companies in Nigeria between 2012 and 2023. The population for the quantitative component comprises all registered insurance companies operating in Nigeria between 2012 and 2023. According to the National Insurance Commission (NAICOM, 2019), there are 58 licensed insurance companies in Nigeria as of 2023, encompassing both life and non-life insurers. A purposive sampling method is employed to select insurance companies that meet specific criteria essential for the study including availability of data. Both life and non-life insurance companies are included to address the research gap concerning life insurance sectors. A preliminary search revealed that 30 insurance companies met the criteria and therefore including in the study. Data were obtained from secondary sources including annual financial reports, regulatory fillings, and industry database. The data were analysed using descriptive statistics and panel data regression analysis.

Regression Equation:

$$FS_{it} = \beta_o + \beta_1 RE_{it} + \beta_2 Control\ variables_{it} + \mu_1 - \epsilon_{it}$$

Where:

FS_{it} = Financial Stability indicator (e.g. ROA or NPM) for company i at time t

RE_{it} = Reinsurance utilization ratio for company i at time t

μ_1 = Unobserved company-specific effects.

ϵ_{it} = Error term.

Control Variables: Variables such as company size (log of total assets), underwriting risk (loss ratio), leverage (debt-to-equity ratio), and macroeconomic factors (GDP growth rate, inflation rate) are included to isolate the effect of reinsurance.

Diagnostic Tests: Tests for multicollinearity (Variance Inflation Factor), heteroskedasticity (Breusch-Pagan test), and autocorrelation (Durbin-Watson statistic) are conducted to ensure the robustness of the regression models.

Results and Discussion

Descriptive Analysis

a. Trend of Gross Premium Income Over Years

The trend of gross premium income highlights variability in revenue generation among Nigerian insurers from 2012 to 2023. Peaks, such as in 2015 and 2023, suggest favorable economic conditions or successful market penetration during those years, while troughs, like in 2013 and 2019, may reflect economic downturns or heightened claims payouts. Gross premium income, a critical revenue indicator, often fluctuates with macroeconomic conditions like inflation and GDP growth, as well as insurance market dynamics. These trends resonate with literature emphasizing the susceptibility of emerging market insurers to external shocks and highlight the importance of sustainable premium growth for financial stability (Outreville, 1990; Feyen *et al.,* 2011).

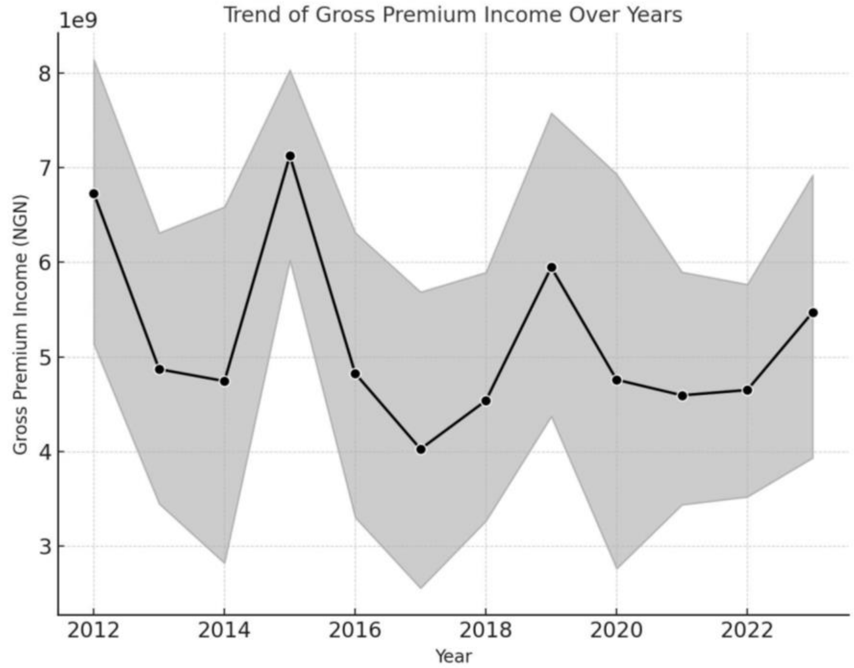


Figure 1: Trends of Gross Premium Income

b. Trend of Return on Assets (ROA) Over Years

The ROA trend reveals fluctuating profitability for Nigerian insurers, with occasional negative returns (e.g., 2012) reflecting challenging periods, while more recent years (e.g., 2023) show recovery and improved asset utilization. Such volatility underscores the sensitivity of insurer profitability to operational efficiency and external factors, including inflation, exchange rate volatility, and reinsurance costs. Literature on emerging markets emphasizes that consistent ROA performance often relies on robust risk management and asset allocation strategies (Arena, 2008; Grace & Timme, 1992). The observed instability reflects the challenges Nigerian insurers face in navigating economic volatility while maintaining profitability.

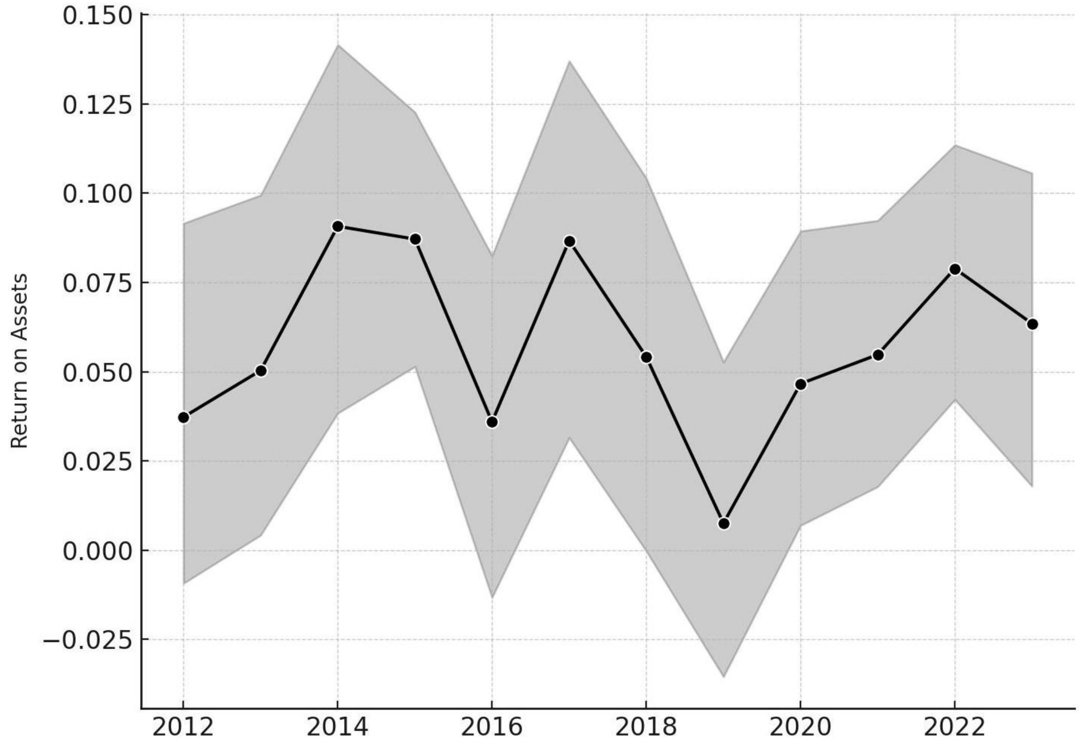


Figure 2: Trends in Return on Assets

c. Trend of Ratio of Ceded Reinsurance (RCR) Over Years

The RCR trend indicates fluctuating reliance on reinsurance, with peaks in 2013 and 2015 suggesting heightened risk aversion during uncertain periods, and subsequent declines reflecting shifts towards higher risk retention. Reinsurance reliance can mitigate catastrophic losses but erode profitability due to ceded premiums, aligning with global findings on the cost-benefit balance of reinsurance practices (Adams *et al.,* 2005; Weiss & Chung, 2004). The declining trend post-2016 suggests evolving strategies among Nigerian insurers to optimize risk retention and reduce reinsurance costs, demonstrating a proactive approach to balancing solvency and profitability.

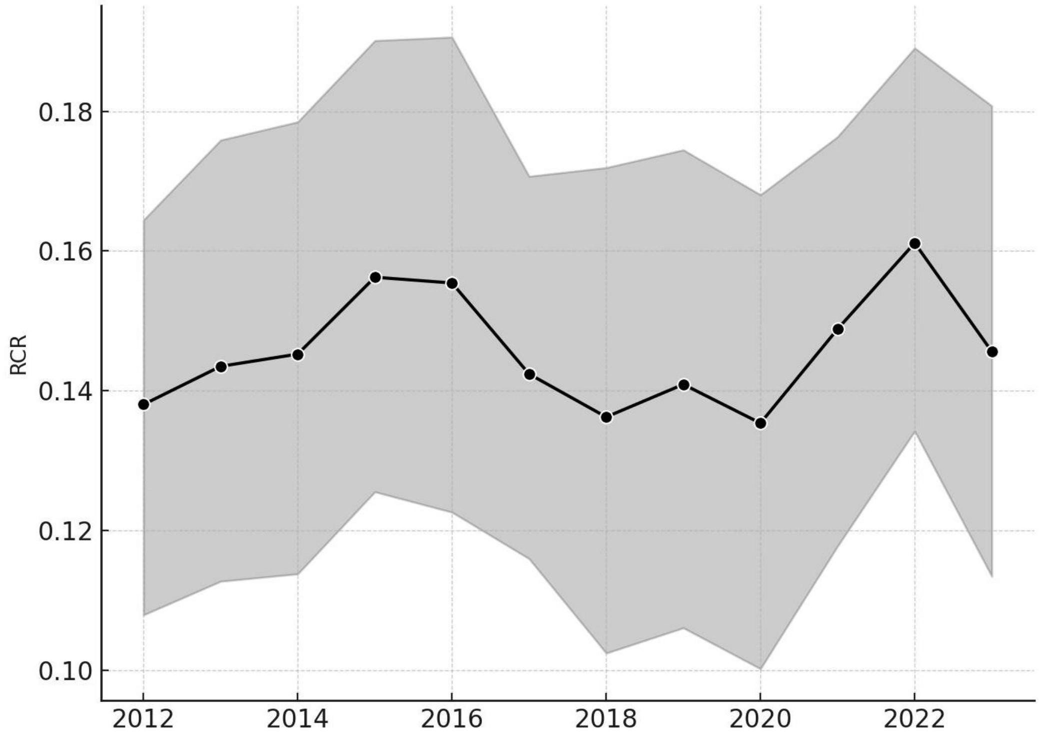


Figure 3: Trend of Ratio of Ceded Reinsurance (RCR)

Impact of Reinsurance on Return on Assets (ROA)

The regression results (Table1) offer significant insights into how reinsurance practices, risk management, and macroeconomic factors shape the financial stability of Nigerian insurers, as measured by ROA. With an $R2$ of 0.478, the model explains a substantial portion of ROA variability, confirming the relevance of these predictors. The overall significance of the model (F =29.67, p< 0.001) underscores its robustness and the strength of the relationships under investigation.

a. Reinsurance Metrics

The Ratio of Ceded Reinsurance (RCR) negatively impacts ROA (β = −0.1204, p<0.001), indicating that excessive reliance on reinsurance reduces profitability. This result is consistent with Weiss and Chung's (2004) findings, which highlight the trade-offs insurers face in balancing risk transfer and earnings retention. Similarly, the negative impact of Reinsurance Price (%) (β = − 0.0753, p = 0.030) reflects the financial strain of costly reinsurance agreements, aligning with Adams *et al.*'s (2005) argument that high costs can erode profitability, especially in competitive or volatile markets. These findings highlight the need for Nigerian insurers to optimize reinsurance utilization, ensuring it provides sufficient risk protection without compromising profitability.

b. Risk Management

The Underwriting Risk Score exhibits a strong negative effect on ROA (β = −0.0918, p< 0.001), reinforcing the importance of effective underwriting in sustaining profitability. Higher risk scores likely reflect underwriting inefficiencies or adverse selection, which increase claims exposure and reduce asset returns. This observation aligns with the work of Grace and Timme (1992), who emphasize the critical role of underwriting quality in the financial performance of insurers. For Nigerian insurers, these results underscore the need to enhance underwriting practices to mitigate risks and sustain asset efficiency.

c. Macroeconomic Factors

Among the macroeconomic variables, Inflation Rate (%) positively influences ROA (β = 0.0043, p = 0.018), suggesting that insurers adjust pricing to maintain profitability during inflationary periods. This supports the findings of Arena (2008), who observed that insurers in emerging markets often exhibit resilience to inflation due to their pricing flexibility. Conversely, the Exchange Rate (NGN/USD) negatively impacts ROA ($\beta = -0.00004$, p = 0.048), reflecting the financial strain posed by currency depreciation, particularly when foreign-denominated reinsurance contracts are involved. GDP Growth Rate (%) has a marginally significant positive effect ($\beta = 0.0028$, $p = 0.063$), emphasizing the broader economic conditions that facilitate asset utilization and profitability, consistent with Feyen *et al.*'s (2011) findings on economic growth and insurance market performance.

Generally, the findings emphasize the dual role of reinsurance as both a tool for risk mitigation and a cost burden. While reinsurance supports solvency and loss protection, excessive reliance or high premiums can undermine profitability, echoing global trends (Doherty & Smetters, 2005). Effective underwriting emerges as a critical driver of financial performance, highlighting the importance of risk management in the Nigerian context. Furthermore, macroeconomic stability is pivotal, as inflation, exchange rates, and GDP growth significantly influence insurer profitability.

Table 1: Regression analysis Results on impact of reinsurance on Return on Assets

Variable	**Coefficient**	**Standard Error**	**t-Statistic**	**p-Value**
Constant	0.0875	0.0123	7.11***	0.000
Ratio of Ceded Reinsurance	-0.1204	0.0287	-4.19***	0.000
Reinsurance Price (%)	-0.0753	0.0342	-2.20**	0.030
Underwriting Risk Score	-0.0918	0.0189	-4.85***	0.000
Inflation Rate (%)	0.0043	0.0018	2.39**	0.018
Exchange Rate (NGN/USD)	-0.00004	0.00002	-2.00**	0.048
GDP Growth Rate (%)	0.0028	0.0015	1.87*	0.063
R-squared	0.478			
Adjusted R-squared	0.462			
F-statistic	29.67***			

*, **, *** = significance at 10%, 5% and 1% levels respectively

Impact of Reinsurance on Net Profit Margin (NPM)

The regression results in Table 2 reveal critical insights into how reinsurance practices, risk management, and macroeconomic factors influence Net Profit Margin (NPM), a key measure of profitability. With $R2 = 0.369$, the model explains 36.9% of the variation in NPM, and the overall significance (F = 17.52, p< 0.001) confirms the relevance of the included predictors.

The Ratio of Ceded Reinsurance (RCR) has a marginally significant negative impact on NPM ($\beta = -0.0872$, $p = 0.083$), indicating that high reliance on reinsurance slightly erodes profitability. This aligns with findings in Table 2, where RCR significantly reduced ROA, and echoes Weiss and Chung's (2004) observation that ceded premiums reduce retained earnings, especially in competitive markets. Interestingly, Reinsurance Price (%) shows no significant effect on NPM ($\beta = -0.0625$, $p = 0.261$), suggesting that while costly reinsurance strains asset returns (Table 2), its direct impact on net margins may be mitigated by pricing adjustments.

The Underwriting Risk Score negatively affects NPM ($\beta = -0.1023$, $p < 0.001$), reflecting the critical role of effective risk management in profitability. Poor underwriting practices likely increase claims and operational inefficiencies, reducing net margins. This finding aligns with Grace and Timme (1992), who emphasize the need for sound underwriting as a driver of insurer profitability.

Macroeconomic influences are less pronounced in this model. Exchange Rate (NGN/USD) has a marginally positive effect on NPM ($\beta = 0.00007$, $p = 0.081$), potentially reflecting cost advantages from favorable currency movements in reinsurance agreements. Similarly, GDP Growth Rate (%) positively impacts NPM ($\beta = 0.0045$, $p = 0.074$), highlighting how economic expansions foster profitability. However, these effects are weaker than those observed in Table 2 for ROA, suggesting that net margins are less sensitive to external economic conditions.

Summarily, the foregoing results underscore the nuanced role of reinsurance in shaping profitability. While reliance on reinsurance (RCR) marginally reduces NPM, effective risk management emerges as a decisive factor in sustaining profitability. This aligns with Adams *et al.* (2005), who emphasize the need for insurers to optimize reinsurance practices to balance cost and risk transfer. Additionally, macroeconomic stability remains an enabler of profitability, albeit with less direct influence on NPM compared to ROA.

Table 2: Regression analysis Results for impact of reinsurance on Net Profit Margin

Variable	Coefficient	Standard Error	t-Statistic	p-Value
Constant	0.1568	0.0214	7.33***	0.000
Ratio of Ceded Reinsurance	-0.0872	0.0498	-1.75*	0.083
Reinsurance Price (%)	-0.0625	0.0553	-1.13	0.261
Underwriting Risk Score	-0.1023	0.0302	-3.39***	0.001
Inflation Rate (%)	0.0029	0.0031	0.94	0.349
Exchange Rate (NGN/USD)	0.00007	0.00004	1.75*	0.081
GDP Growth Rate (%)	0.0045	0.0025	1.80*	0.074
R-squared	0.369			
Adjusted R-squared	0.348			
F-statistic	17.52***			

*, **, *** = significance at 10%, 5% and 1% levels respectively

CONCLUSION

This study concludes that reinsurance is a critical tool for risk mitigation and financial stability in Nigeria's insurance sector but poses challenges when excessively relied upon. High reinsurance dependency, reflected in elevated ceded premiums, negatively impacts profitability metrics such as Return on Assets (ROA) and Net Profit Margin (NPM), underscoring the need for balanced utilization. Effective underwriting emerges as a pivotal factor, with poor practices increasing claims exposure and eroding financial performance. Macroeconomic conditions also influence outcomes, with inflation supporting profitability through pricing adjustments, while exchange rate volatility presents risks, particularly in foreign reinsurance contracts. These findings highlight the dual role of reinsurance as both a stabilizing mechanism and a cost driver, emphasizing the importance of optimizing reinsurance strategies, strengthening underwriting frameworks, and adapting to macroeconomic dynamics to achieve financial sustainability.

RECOMMENDATIONS

Based on the study findings, three critical recommendations are proposed to address the challenges and opportunities identified in the impact of reinsurance on financial performance:

1. Optimize Reinsurance Utilization: Reduce over-reliance on reinsurance by retaining manageable risks to balance solvency protection with profitability.
2. Improve Underwriting Practices: Enhance risk assessment and internal controls to minimize claims exposure and improve overall financial performance.
3. Mitigate Exchange Rate Risks: Adopt currency hedging strategies to counteract the financial strain posed by exchange rate volatility in foreign reinsurance agreements.

LIMITATIONS OF THE STUDY

The study faced the following limitations:

1. Data Availability: Gaps in financial data across companies limited comprehensive longitudinal analysis.
2. Sectoral Focus: The study primarily addressed general insurance, leaving life and health insurance sectors underexplored.
3. Geographical Scope: Results are specific to Nigeria and may not generalize to other emerging markets with distinct regulatory and economic landscapes.
4. Causality Issues: Establishing direct causality between reinsurance practices and financial outcomes was challenging due to potential unobserved variables.

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Nigeria's Insurance Industry's Contribution to the Nation's Economic Growth

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Abstract

Aside from its primary role of being a protection against economic loss, the insurance sector is crucial to the advancement of any nation's economy as it helps to mobilize funds for the nation's long-term economic growth. However, there has been uncertainty regarding the Nigerian insurance industry's contribution to the nation's economic growth. This study examined the Nigeria insurance industry contributions to its economic growth. Using an ex-post facto research approach, data were extracted from the Nigerian Insurance Association and the Central Bank of Nigeria database covering thirty (30) year period (1992–2021) was extracted, multiple regression analysis was performed on the data via the use of SPSS. The regression analysis's results show a p-value of 0.001, 0.289 and 0.412 for insurance penetration, insurance investments and insurance claims paid respectively. The growth of the Nigerian economy was thus found to be significantly impacted by insurance penetration, but not by insurance investments or claims paid. The study recommends that government should make deliberate effort to deepen insurance activities in Nigeria by enforcing the compliance of the statutory insurance policies as well as creating awareness to enhance more uptakes of other non- statutory insurance policies. Government agencies should also collaborate to make sure that the industry's revenue and premium collection are diversify into economic and productive investments, in order to boost economic growth.

Keywords: Economy growth, Insurance claims, Insurance industry, Insurance investment, Insurance penetration.

1. Introduction

According to Elendu (2013), insurance is a systematic approach to preventing financial losses where numerous people agree to regularly pay a small premium to an insurance company in exchange for the guarantee that they will be compensated for any losses they may sustain as a result of potential hazards like fire, accident, or death. According to Kazeem (2015) the importance of insurance companies for both individuals and businesses becomes evident when they provide compensation for business losses and avert the collapse of economic activity in the society. Insurance is essential because it provides financial compensation from the pool of collected contributions or premiums by all scheme participants, mitigating the impact of misfortune for both people and companies (Adetunji, Nwude & Udeh, 2018). Thus, it offers risk adjustment and management services to other economic sectors, such as manufacturing, transportation, agricultural, mining, petroleum, banking etc (Etale, 2019).

Aside from its primary role of being a protection against economic loss, Nassor (2021) opine that the insurance sector is crucial to the state of the national economy and helps to mobilize funds for the nation's long-term economic growth. This assertion was backed up by Ward and Zurbruegg (2000), who assert that insurance facilitates financial intermediation in addition to making economic transactions simpler by shifting risk and offering indemnity.

Government security programme may be supplemented or replaced by insurance, which can also promote financial stability, mobilize savings, ease trade and commerce, and guarantee that risk is more efficiently handled through appropriate capital allocation and loss mitigation(Skipper, 2001). According to Fashagba (2018), insurance contributes significantly to the capital market of the economy and accounts for a sizable portion of the capital market, hence the value of insurance to a country cannot be overstated.

Oshinloye (2009) states that a strong insurance sector is necessary for every country to have real growth, regardless of the GDP or public knowledge of insurance. However, there has been uncertainty about the Nigerian insurance industry's capacity to make a major contribution to the nation's economic progress, in contrast to industrialized nations where insurance plays a big role in enhancing residents' well-being and the overall state of the economy (Adetunji *et al*, 2018). While some stakeholders and industry participants seem to think that the industry's true contributions to economic growth were not fully captured, others seem to be asserting that the industry is encountering certain difficulties in increasing its contributions to the advancement of the Nigerian economy. Numerous studies have sought to investigate the asscociation between insurance and economic growth, including Etale (2019), Ukpong and Acha (2017), and others. While a number of these research have discovered a strong association between the insurance sector and the country's economic growth, other studies have discovered no correlation at all.

Given the foregoing, this study advanced this field of study by investigating the role that insurance plays in Nigeria's economic growth. Specifically, this study examined the effect of insurance penetration, insurance investments and insurance claims on the economic growth in Nigeria.

2. Literature Review

2.1 Conceptual Review

2.1.1 Insurance Penetration

Insurance penetration have been described as the percentage representation of the annual premium underwritten in relation to the GDP (Olayingbo & Akilo,2016). According to Podoaba (2015), insurance penetration is a measure of the extent of the contribution of the insurance industry to the GDP of a country. The insurance industry is better developed the greater the penetration rate (Alhassan & Fiador, 2014). Though insurance penetration rate is the most often used metric to assess how a nation's insurance market is developing, it does not provide specific details on a nation's insurance industry position, even while it acts as a broad, high-level indication of the growth of an insurance market. Okonkwo and Eche (2019) have identified several factors that impact the insurance penetration rate.

These factors include the insurance providers' corporate image, their level of knowledge and awareness, their level of professionalism and attitudes, the insurance policy wordings' clarity, and their accessibility and prompt payment of claims. In addition to these, the macroeconomic foundations of the country, the dynamics of the insurance market and industry, and the regulatory capacity all significantly influence the penetration level of insurance. The study formulate the following hypothesis based on the body of available literature and the connection between insurance penetration and economic growth:

H_{o1}: Insurance penetration have no significant effect on economic growth in Nigeria.

2.1.2 Insurance Investments

Ehiogu, (2017) describes investments as the deployment of insurance funds that are not immediately needed for expenditure, or for the payment of insurance claims and benefits into a productive use. Put differently, it is the act of putting money that are not intended for immediate use to productive use, which might raise their worth or even cause them to multiply, depending on how long they are put to use. According to Yusuf, Ajemunigbohun and Alli (2017), the investments function performs critical part in the entire management of insurance businesses. The researchers suggested that because premiums are paid up front, they may be invested until money is required to cover costs and claims.

Of all the applications of premium, investments is the only one that yields a profit for the business going forward. According to Fadun and Shoyemi (2018), money from insurance firms is invested in the stock market, raising stock prices for the benefit of investors and boosting the national economy. The requirements for the goal of investing in the insurance industry is to increase funds in order to pay claims, which is the insurer's first and most crucial duty in the event that one occurs, and to prevent a financial deficit. Since a specific rate of return on its investments has been anticipated for the purpose of calculating premiums and the economic development of the country, if funds are not invested, the insurer's total revenue will not be sufficient to pay its obligations. The study formulate the following hypothesis based on the body of available literature and the connection between insurance investment and economic growth:

H_{02}:Insurance investments have no significant effect on economic growth in Nigeria

2.1.3 Insurance Claims

According to Krishman (2010), a claims on an insurance policy is a request made by an insured to an insured to carry out the guarantee promised when drafting the contract. Sajid, Arpah and Angappan (2017) posits that the crucial reason and a pivotal part that influence the insured's view of the insurer in general is claims payment. According to Oluwaleye, Shoyemi, and Edewusi (2020), an effective management of claims is critical to an insurance company performance. Therefore, claims management entails evaluating the claims's performance, keeping an eye on the costs associated with it, including settlement and legal fees, negotiating concessions, avoiding delays, and misunderstanding with clients when it comes to claims payment. The study formulate the following hypothesis based on the body of available literature and the connection between insurance claims and economic growth:

H_{03}:Insurance claims have no significant effect on economic growth in Nigeria

2.1.4 Economic Growth

Iyodo, Samuel, and Inyada (2018) describes economic growth as an gradual improvement of a country's productivity over a certain time frame accompanied by an increase the amount of national income. Economic growth indicates a gradual and persistent increase in the capital required to provide a nation's people with a growing variety of economic commodities (Iyodo, Samuel, Adewole & Ola, 2020). According to Yahaya and Bakare (2018), increased productivity is the main factor driving economic growth where productivity is the ability to produce more products and services using the same level of resources such as capital, energy, and labour.

According to Iyodo, et al (2018), one way to gauge the economic growth of a country is by looking at its GDP, which is a representation of its output economic model. GDP is the monetary worth of the products and services generated in an economy over a certain period of time, regardless of the nationality of the individuals who created the goods and services, according to the Central Bank of Nigeria (2009). This study measured economic growth with the real gross domestic product (Real GDP).

2.2 Theoretical Review

2.2.1 Theory of Financial Intermediation

The contemporary theory of financial intermediation was created by Merton (1995) and takes into consideration both the changes in the financial world and traditional theory. The theory is based on the notion that intermediaries alleviate informational asymmetries and transaction costs (Nassor, 2021). The primary focus of the modern theory of financial intermediation is on the roles played by financial intermediation, its impact on the whole economy, and how government regulations affect financial intermediaries (Fadun & Shoyemi, 2018).

Iyodo, Samuel, and Inyada (2018) assert that the theory places greater emphasis on six crucial roles that insurance plays as a financial intermediary. These roles include creating revenue to settle payments and facilitate the trading of commodities, allocating resources, asymmetric information, providing avenue for resources assembling, managing risk, supplying pricing data to facilitate decision-making and creating ways to address the issue of moral and physical hazard.Insurance companies' operations significantly increase economic growth and help individuals and families manage their income risk by carrying out these duties.

However, according to Nassor (2021), advances in information technology, financial market liberalization, and market depth tend to lower transaction costs and informational asymmetries, rendering financial intermediation meaningless. The theory is useful for this research because it clarifies the connection between a nation's economic growth and insurance industry activities.The theory states that the insurance industry's roles in resource accumulation, risk management, resource allocation, and exchange facilitation have allowed it to greatly boost economic growth and help families and individuals effectively manage their income risk (Okparaka, 2018).

2.3 Review of Empirical Literature

Fadun and Silwimba (2023) examined the contribution of insurance on Nigeria's economic growth. utilizing 28 years of time series data (1992-2019) and an ex post facto design. Premiums for both life and non-life insurance were found to have an impact on GDP, according to the long-run co-integration analysis.

Dawd and Benlagha (2023) looked at how the increase of insurance affected economic growth in 16 OECD nations between 2009 and 2020. Using the dynamic panel technique, it was found that factors associated to insurance had a considerable impact on economic growth. Additionally, the analysis verified the inverted U-shaped relationship.

Okonkwo and Eche (2019) conducted a study on penetration rate and economic growth nexus, they employed the OLS technique to analyzed Nigeria-specific data covering the period 1981 to 2017. The result indicated a weak impact of penetration on growth in the country.

Olarewaju and Msomi (2021) examined the short- and long-term dynamics of the factors influencing insurance penetration in 15 West African nations between 1999Q1 and 2019Q4. The collected quarterly data was subjected to the panel auto regressive distributed lag model. Insurance penetration and the independent variables—education, productivity, dependency, inflation, and income—were found to have a cointegrating and short-term significant relationship. The significance and negative sign of the error correction term show that all variables are moving toward long-term equilibrium at a moderate rate of 56.4%, further confirming that income, productivity, dependency, inflation, and education all influence insurance penetration in West Africa over the long term.

Iyodo, Samuel, Adewole, and Ola (2020) investigated how Nigeria's economic growth was affected by the performance of the non-life insurance sector. Purposive (judgmental) sampling and the ex-post facto research procedure were found to be suitable for the study, having been successfully applied by a number of researchers in the past. Regression analysis was used to examine the data. For the purpose of evaluating the hypotheses, ordinary least square regression was used. According to the study's findings, Nigeria's economic growth during that time was significantly boosted by the prevalence of non-life insurance. Savings and government spending have a negative impact on the economy, but profit and investment have a positive but statistically negligible impact.

Lyndon (2019) used data from 2001 to 2017 to examine the connection between Nigeria's economic growth and the expansion of the insurance business. The Nigerian Insurance Digest and the Central Bank of Nigeria (CBN) Statistical Bulletins' yearly reports for the years 2001–2017 provided the time series data for the variables. The study used multiple regression analysis and descriptive statistics, both of which were based on the E-views 9.0 program. The empirical findings demonstrated that in order to safeguard and encourage investors and guarantee long-term economic growth, comprehensive insurance plans should be made compulsory for both individuals and corporate entities.

3. Methodology

The ex-post facto research design, which involves gathering data over a specific time period and enables the establishment of the connection between variables, was chosen for the study. It was adopted for the study because the researcher intends to collect data from the Nigerian insurance industry report from the years 1992 to 2021and also the researcher wishes to establish a cause and effect relationship between the insurance sector growth and the growth of the Nigeria economy. Data were sourced and extracted from the database of Nigerian Insurance association (NIA) and the Nigeria Central Bank. Thirty years data for the periods (1992-2021) was used for this study.

Table 1: Measurement of Variables

Variables	Measurement	Notation
Economic growth	Real gross domestic product (Real GDP)	RGDP
Insurance penetration	Gross premium/ GDP	PEN
Insurance investment growth rate	$\text{Investment}_{\textbf{current year}} - \text{Investment}_{\textbf{previous year}}$ / $\text{Investment}_{\textbf{previous year}}$	INV
Insurance claims growth rate	$\text{Claim}_{\textbf{current year}} - \text{Claim}_{\textbf{previous year}}$ / $\text{Claim}_{\textbf{previous year}}$	CLA

Source: Author Compilation

This research adapted the linear regression model used by Etale (2019). The general form of a linear regression model as well as the adapted model for this study are specified below:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \ldots\ldots + \beta_n X_n + \varepsilon \ \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (1)$$

Where;

Y= Dependent variable

α = Slope of the regression;

β_1,β_2.....,β_n = Regression coefficients;

X_1, X_2.....,X_n= Independent variables

ε = Error Term.

The model for this study:

$$RGDP = \alpha + \beta_1 PEN + \beta_2 INV + \beta_3 CLA + \varepsilon \ \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (2)$$

Data analysis for this study consisted of descriptive analysis, which was to examine the features of the extracted data, diagnostic tests to determine the appropriateness of the data used for the study and inferential analysis with the use of regression analysis to determine the effect of the independent variables on the dependent variable.

4. Results and Discussion

4.1 Descriptive Statistics

Table 2: Summary of Descriptive Statistics

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Real GDP (in billion)	30	875	73383	33926.10	29631.866
Insurance penetration	30	.00137	.00780	.0042593	.00136677
Insurance investments	30	-.60835	.77571	.1758567	.26596152
Insurance claims	30	-.79228	.87707	.1500360	.30479260

Source: SPSS Output (2024)

As presented in Table 2 the average real GDP value for the 30 observations was N33,926.10b with a standard deviation of 29,631.86. The standard deviation of the real GDP shows the presence of less disparity in the real GDP over the 30 years period.
The mean value of insurance penetration for the 30 observations was 0.43 percent with a standard deviation of .001367. The standard deviation of insurance penetration growth rate implies the existence of a insignificant disparity in the insurance penetration growth rate over the 30 years period.
The mean value of insurance investments. The standard deviation of insurance investments growth rate implies the existence of an insignificant disparity in the insurance investments growth rate over the 30 years period.
The mean value of insurance claims growth rate for the 30 observations was 15.00 percent with a standard deviation of .304793. The standard deviation of insurance investments growth rate implies the existence of an insignificant disparity in the insurance investments growth rate over the 30 years period.

4.2 Diagnostic Tests

4.2.1 Normality Test

Table 3: Normality Test

	Shapiro-Wilk		
	Statistic	Df	Sig.
Real GDP	.799	30	.006
Insurance Penetration	.934	30	.061
Insurance investments	.957	30	.255

Insurance claims	.910	30	.015

Source: SPSS Output (2024)

Table 3 indicated that the null hypothesis was accepted. Given that the p value for the variables were higher than 0.05, the data gathered for analysis is normally distributed.

4.2.2 Multicollinearity Test

Table 4: Multicollinearity Test

		Coefficient	
Model		Collinearity Statistics	
		Tolerance	VIF
1	Insurance penetration	.993	1.007
	Insurance investments	.992	1.008
	Insurance claims	.990	1.010
a. Dependent Variable: Real GDP			

Source: SPSS Output (2024)

As indicated in Table 4, every statistic indicated a VIF value of less than 10. This shows that multicollinearity issues does not exist among the independents variables used in this study.

4.2.3 Correlation Analysis

Table 5: Correlation Matrix

Variable	Real GDP	Insurance Penetration	Insurance investments	Insurance claims
Real GDP	1.000	-	-	
Insurance penetration	0.582	1.00	-	
Insurance investments	- 0.205	-0.051	1.00	
Insurance claims	0.182	0.073	-0.075	1.00

Source: SPSS Output (2024)

The correlation between the independents variables; insurance penetration, insurance investments and insurance claims included in this study are presented and analyzed. According to Table 5 the correlation coefficient between insurance penetration and insurance investments is -0.051,insurance penetration and insurance claims is 0.073 and insurance investments and insurance claims is -0.075. Since their coefficients are all less than 0.80 we can concluded there is no series multicolinearity problem as supported with empirical evidence.

4.3 Test of Hypothesis

Economic growth measured by the real GDP was regressed against the three proxies (insurance penetration, insurance investments and insurance claims paid) used in measuring insurance contribution. .

Decision rule:

If (p> 0.05): Accept $\mathbf{H_0}$ (null hypothesis),

If (p <0.05): Reject $\mathbf{H_0}$ (null hypothesis) and adopt $\mathbf{H_1}$ (alternative hypothesis).

Table 6: Regression Result of Insurance Contribution and Economic Growth

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.621[a]	.386	.315	24523.861

a. Predictors: (Constant), Insurance Penetration, Insurance investments, Insurance claims

ANOVA*

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9826463978	3	3275487993	5.446	.005[b]
	Residual	1563913283	26	601419741.7		
	Total	25463377261	29			

a. Dependent Variable: Real GDP
b. Predictors: (Constant), Insurance Penetration Insurance investments, Insurance claims

Coefficients*

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-16759.598	15414.203		-1.0867	.287
Insurance Penetration	12227401.62	3344225.439	.564	3.656	.001
Insurance investments	18612.579	17188.670	-.167	-1.083	.289
Insurance claims	12518.763	15019.399	.129	.834	.412

a. Dependent Variable: Real GDP
Source: SPSS Output (2024)

With a R Square of 0.386, Table 6 demonstrates that the predictors (insurance penetration, insurance investments, and insurance claims) can account for 38.6% of the variation in real GDP, with other factors not included in the model accounting for the remaining percentage.
Additionally, it demonstrates that the significance value is less than p=0.05, at 0.005. This suggests that the model was statistically significant in forecasting the impact of insurance investments, penetration, and claims on Nigeria's real GDP.

H_{01}**:** Insurance penetration have no significant effect on economic growth in Nigeria

According to the results from the regression analysis above, insurance penetration has a p-value of 0.001, which is less than 0.05. Consequently, the null hypothesis of the study —insurance penetration has no significant effect on economic growth in Nigeria—is rejected. Thus, this study found that insurance penetration has significant effect on economic growth in Nigeria.

H_{02}**:** Insurance investments have significant effect on economic growth in Nigeria

According to the results from the regression analysis above, insurance investments has a p-value of 0.289, which is more than 0.05. Consequently, the null hypothesis of the study —insurance investments has no significant effect on economic growth in Nigeria—is accepted Thus, this study found that insurance investments have no significant effect on economic growth in Nigeria.

H_{03}**:** Insurance claims have significant effect on economic growth in Nigeria

According to the results from the regression analysis above, insurance claims has a p-value of 0.412, which is more than 0.05. Consequently, the null hypothesis of the study —insurance claims has no significant effect on economic growth in Nigeria—is accepted Thus, this study found that insurance claims have no significant effect on economic growth in Nigeria

4.4 Discussion of Findings

To achieve the objectives of this study, real GDP was used as proxy for economy growth, while the insurance industry, the independent variables was measured using three proxies (insurance penetration, insurance investments and insurance claims paid).

The study found that insurance penetration has significant effect on economic growth in Nigeria. The finding of this study thus implied that insurance penetration contribute positively to the development of the Nigeria economy i.e an increase in insurance penetration rate translate to economy growth. The result of this study is in tandem with prior studies by Iyodo, Samuel and Inyada (2018)which also found that insurance penetration has significant effect on economic growth. This study finding is however contrary to some other research findings by Anteneh, (2016), Okonkwo and Eche (2019) which found that insurance penetration have no significant effect economic growth.

The study also found that insurance investments have no significant effect on economic growth in Nigeria. The result of this study implies that changes in insurance investments will not significantly affect the growth of the economy. The finding of this study is in line with studies by Ukpong and Acha (2017), Oloyede, Folorunsho and Ogamien, (2023) which also found that Insurance investments have no significant effect on economy growth. This study finding is however in contrary to some other research findings by Wadlamannati (2008), Fadun and Shoyemi (2018), Lyndon's (2019) which found that insurance investments have significant on economy growth.

The study also found that insurance claims have no significant effect on economic growth in Nigeria. The result of this study implies that changes in Insurance claims will not significantly affect the growth of the economy. The finding of this study is in line with studies by Lyndon's (2019), Oloyede, Folorunsho and Ogamien (2023) which also found that Insurance claims have no significant effect on economy growth. This study finding is however in contrary to some other research findings by Wadlamannati (2008), Fadun and Shoyemi (2018), Lyndon's (2019) which found that insurance investments have significant on economy growth.

5. Conclusion and Recommendations

The aim of this study is to examine the contributions of insurance industry to the growth of the Nigerian economy. The study found evidence that insurance penetration have a significant effect on the growth of the Nigerian economy, while insurance investments and insurance claims paid were found not to have significant effect on the growth of the Nigerian economy. The findings of this study further re-emphasize the results of previous studies which have found that though, the primary purpose of insurance is to protect policyholders against financial loss arising from damage or loss of property and such other subject matter of insurance, insurance plays a vital role in any economy by encouraging long-term savings and supporting the accumulation and investments of capital.

The study recommends that government through its agencies should make deliberate effort to deepen insurance activities in Nigeria. In addition, the National Insurance Commission and other government agencies should effectively collaborate to make sure that the industry's revenue and premium collection are diversify into economic and productive investments.

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Analysis of the Impact of Inflation Rates on Commodity Prices in Nigeria

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Abstract

Persistent inflation in Nigeria poses challenges for commodity prices, economic stability, and welfare, necessitating a clear understanding of its impact on commodity prices for effective policy formulation. This study investigated the impact of inflation rates on commodity prices in Nigeria via an annual time series dataset spanning from 1980 to 2023. The analysis was conducted using the Autoregressive Distributed Lag (ARDL) model. The results revealed a significant positive long-run relationship between inflation rates and commodity prices. Conversely, a negative and significant short-run relationship was observed. Additionally, money supply exerts a positive and significant influence on commodity prices in both the long and short run. Crude oil prices demonstrate a positive long-run connection with commodity. However, food imports, food exports, and interest rates exhibit significant negative long-term relationships with commodity prices. In the short run, food exports and insurgencies are positively and significantly associated with commodity price. Furthermore, a negative relationship was identified between crude oil prices, food imports, interest rates, and commodity prices in the short run. Based on these findings, the study recommends that the government and monetary authorities establish a clear inflation-targeting framework aimed at stabilizing prices and managing inflation expectations.

Keywords: Inflation, commodity prices, ARDL, ECM, money supply

1. Introduction

Commodity prices play a pivotal role in economic development, particularly in developing economies like Nigeria where commodities such as food, fuel, and raw materials constitute a significant portion of national output and trade. As essential drivers of economic growth, fluctuations in commodity prices directly affect the welfare of households, profitability of businesses, government revenue, and overall economic stability (Ajakaiye & Adeyeye, 2012; Samuelson & Nordhaus, 2010). The importance of commodity prices extends to their influence on key macroeconomic indicators, including inflation, exchange rates, and interest rates. Sharp increases in commodity prices, especially those of essential goods such as food and fuel, have profound implications for household welfare and poverty levels. Additionally, businesses reliant on commodity inputs face challenges in cost planning and maintaining profitability under volatile pricing conditions (Fowowe, 2017).

Despite the critical role of commodity prices in the economy, they remain highly susceptible to various factors, including inflation, exchange rate fluctuations, government policies, and global market conditions. In Nigeria, the persistent rise in the general price level, commonly referred to as inflation, has been a major concern for policymakers, businesses, and households alike. Inflation affects commodity prices through cost-push and demand-pull mechanisms, currency depreciation, and changes in monetary supply (CBN, 2019). Over the years, Nigeria has experienced varying levels of inflation driven by structural deficiencies, exchange rate volatility, monetary expansion, and fluctuations in global oil prices (Adeniran, 2016; Eze & Ojo, 2019). This has resulted in unpredictable shifts in commodity prices, particularly food and fuel, making basic necessities unaffordable for many Nigerians (NBS, 2020).

Previous studies have explored the impact of inflation on commodity prices in Nigeria. However, much of the literature has either focused on specific commodities or analyzed inflation as a dependent variable rather than an independent determinant of commodity prices (Ajayi & Olayemi, 2013; Fowowe, 2017). Furthermore, government policies aimed at controlling inflation, such as interest rate adjustments, monetary tightening, and subsidies, have yielded mixed results, often proving ineffective due to poor implementation and sustainability challenges (Saka, 2020). The gap in existing studies lies in the limited understanding of how inflation, as a macroeconomic variable, influences commodity prices across various sectors of the Nigerian economy. This study addresses these gaps by employing the Autoregressive Distributed Lag (ARDL) model to analyze the impact of inflation on commodity prices in Nigeria over the period 1980 to 2023. The ARDL approach is particularly suitable for capturing both short-term and long-term dynamics, providing a comprehensive understanding of how inflation affects commodity prices over different time horizons. The findings from this study will contribute to the existing literature by offering empirical evidence on the relationship between inflation and commodity prices, with particular emphasis on how various commodities respond differently to inflationary pressures. Moreover, the study will inform policymakers on designing effective interventions aimed at stabilizing commodity prices and mitigating the adverse effects of inflation on the economy. The paper is structured as follows: Section 2 presents the literature review, Section 3 outlines the methodology, Section 4 discusses the results, and Section 5 concludes with recommendations.

2. Literature Review

2.1 Conceptual Literature

This section presents the **conceptual literature** on the impact of inflation on commodity prices in Nigeria. It is organized into two parts: the first part explores the **concept and dynamics of inflation**, while the second part focuses on the **concept of commodity prices** and their relevance within the Nigerian economic context.

2.1.1 Concept of Inflation

Inflation is the rate at which the general level of prices for goods and services rises, resulting in the decrease of purchasing power of a currency. It is typically measured annually by indices such as the Consumer Price Index (CPI) or the Producer Price Index (PPI). When inflation occurs, each unit of currency buys fewer goods and services than it did before. Inflation can result from various factors, including demand-pull inflation (increased demand for goods and services), cost-push inflation (rising production costs), and built-in inflation (wage-price spirals) (Mankiw, 2018).

2.1.2 Concept of Commodity Price

Commodity Prices refer to the prices of raw materials and primary agricultural products that are typically traded on global markets. Commodities such as oil, gold, wheat, and coffee are essential for the global economy. Commodity prices are influenced by various factors, including supply and demand dynamics, geopolitical events, and seasonal weather conditions. Changes in commodity prices often have broader implications for inflation since rising costs of raw materials can contribute to higher prices for finished goods and services (Krugman & Wells, 2018).

2.2 Theoretical Framework

The theoretical framework of this study is grounded in the Quantity Theory of Money (QTM), which links money supply, price levels, and economic output. QTM posits that the general price level is directly proportional to the money supply, assuming constant velocity of money and stable real output. When the money supply grows faster than real output, inflation is the inevitable outcome. In Nigeria, this theory is especially relevant due to the frequent use of expansionary monetary policies by the Central Bank of Nigeria (CBN), including lowering interest rates and increasing liquidity to stimulate growth or cover budget deficits (CBN, 2019). While such measures may offer short-term benefits, they often result in inflation if not matched by increased production. Inflation erodes the purchasing power of the naira, raising the cost of essential commodities like food and fuel. Nigeria's dependence on imports worsens this effect, as domestic prices become vulnerable to global market changes and exchange rate fluctuations. QTM also explains how inflation disproportionately affects lower-income households, reducing their access to basic goods and deepening poverty and inequality. This framework illustrates that commodity prices in Nigeria are shaped by both domestic monetary actions and external economic factors. It emphasizes the importance of aligning money supply growth with real output to maintain price stability. In essence, QTM offers a solid foundation for understanding how inflation influences commodity prices and economic welfare in Nigeria.

2.3 Review of Empirical Studies on Impact of Inflation Rates on Commodity Prices

Several studies have examined the relationship between inflation and commodity prices in different countries, using various econometric methods: **Sharma et al. (2024)** analyzed food price inflation in India (2011-2022) using the ARDL model. They found that money supply, per capita income, agricultural wages, and food prices positively influenced food inflation in both the short and long run. **Shehu et al. (2023)** investigated food prices in Nigeria (1990-2021) with the ARDL model. They identified a significant short-run relationship between oil prices and food inflation, while money supply affected food prices in both the short and long term. Likewise, **Akinbode et al. (2022)** studied Nigeria (1980-2028) using ARDL methods and found a strong positive relationship between oil prices and food price inflation in the short and long run, with exchange rates and money supply impacting food prices in the long run. **Similarly, Kashif et al. (2022)** explored the asymmetric relationship between oil prices and food inflation in Pakistan using the NARDL model. They noted a long-term positive effect of rising oil prices, significant in the short term for increases. Furthermore, **Mustafa (2021)** employed the SVAR model to analyze Turkey (2011-2021). Domestic factors like exchange rates and money supply significantly influenced high food prices, while international oil prices had a lesser impact. **Ertuğrul and Seven (2021) u**sed DCC-GARCH techniques in Turkey (2003-2019) and found a positive relationship between exchange rates and food prices, with a negative impact from oil prices. Also, **Balcilar and Bekun (2020)** used Diebold and Yilmaz spillover index and established a significant positive relationship between agricultural commodity prices and inflation in Nigeria over the period 2006 - 2016, attributing 75% of inflationary pressures to these commodities. In their study **Ajibade et al. (2020)** investigated food price volatility in Nigeria (1970-2019) using GARCH, identifying crop production, economic growth, insurgency, and trade liberalization as key drivers.

Moreover, Shehu et al. (2019) investigated asymmetrical oil price shocks on food prices, concluding that increases in oil prices significantly raised food prices, while decreases had a lesser effect. Additionally, **Sultana and Qayyum (2018)** examined factors influencing food price inflation in Pakistan (1970-2017) using OLS, finding that food imports, GDP, taxes, and exports positively affected food prices, while money supply had a negative relationship. Furthermore, **Hemmati et al. (2018)** analyzed inflation determinants in Iran (1978-2019) with ARDL techniques, concluding that exchange rates, money supply, import prices, and sanctions positively influenced inflation. **Bhattacharya and Sen Gupta (2017)**: Studied food inflation in India (2006-2013), identifying agricultural wage inflation as a key determinant, with fuel inflation playing a moderate role. These studies highlight the complex dynamics between inflation, commodity prices, and various macroeconomic factors across different countries. The above-reviewed studies reveal mixed findings concerning the relationship between inflation, macroeconomic variables, and commodity prices. While several studies highlight the significant positive influence of money supply and oil prices on commodity prices (Shehu et al., 2023; Akinbode et al., 2022; Kashif et al., 2022), others report conflicting results, especially concerning the role of exchange rates (Mustafa, 2021; Ertuğrul & Seven, 2021). Additionally, most studies tend to focus on food price inflation, with limited attention to the broader spectrum of commodities. The current study seeks to address these gaps by employing a comprehensive dataset from 1980 to 2023, using the ARDL model to examine the impact of inflation rates on commodity prices in Nigeria. This approach provides a more robust understanding of the long-term and short-term dynamics between inflation and commodity prices, particularly in the context of Nigeria's unique economic environment characterized by dependency on imports, exchange rate volatility, and fluctuating oil prices.

3. Methodology

This study employed secondary data spanning the period 2000 to 2023, a timeframe that captures significant global and national events such as the 2008 global financial crisis, the COVID-19 pandemic, and periods of insurgency in Nigeria. These events have profoundly impacted both inflation rates and commodity prices, making this time span suitable for analyzing the dynamic relationship between them. Commodity Prices (Dependent Variable) was sourced from the Central Bank of Nigeria (CBN) and the World Bank Indicators (WBI), and measured using the Producer Price Index (PPI). The PPI reflects the average changes in prices received by domestic producers for their output, offering a reliable measure of commodity price movements from the producers' perspective. Inflation Rate (Independent Variable) was measured by the Consumer Price Index (CPI), which tracks the annual percentage change in the cost of acquiring a fixed basket of goods and services. This approach is consistent with the World Development Indicators (2023) from the World Bank. Inflation Rate (IV) represents the general rise in prices over time. An increase in inflation is expected to exert upward pressure on commodity prices in the long run, as producers pass increased input costs on to consumers. In the short run, however, other factors like supply shocks or geopolitical issues may dominate. Commodity Prices (DV): As measured by the PPI, these reflect the changes in prices producers receive. The relationship with inflation is positive in the long run, as persistent inflation leads to increased production costs and price adjustments. In the short run, commodity prices may deviate due to external shocks, market sentiment, or supply chain disruptions. This study adapts model with modification in line with the work of Sharma, Meena, and Anwer (2024). The functional model is specified as:

CMP = f (INFR CRP, CPR, FDIM, FDEX, INR, MS, INS) ……………………………………………. (3.1)

Where: *"CMP"* is commodity price, "*INFR*" denotes inflation rates, "*CRP*" represents crude oil price, "*CPR*" is crops production, "*FDIM*" signify food import, "*FDEX*" is food export, "*INR*" denote interest rates, "*MS*" symbolizes money supply, "*INS*" denotes insurgence. The functional model can be restated into mathematic model:

$$CMP_t = \beta_0 + \beta_1 INFR_t + \beta_2 CRP_t + \beta_3 CPR_t + \beta_4 FDIM_t + \beta_5 FDEX_t + \beta_6 INR_t + \beta_7 MS_t + \beta_8 INS_t \ldots (3.2)$$

Where: "*t*" is the time series variance, " β_0" represent the constant parameters, and "$\beta_1 - \beta_8$" are the parameters to be estimated. Thus, the mathematical equation can be restated into econometric model to captured the error term. The econometric model is specified as:

$$CMP_t = \beta_0 + \beta_1 INFR_t + \beta_2 CRP_t + \beta_3 CPR_t + \beta_4 FDIM_t + \beta_5 FDEX_t + \beta_6 INR_t + \beta_7 MS_t + \beta_8 INS_t + \mu_t \ldots \ldots \ldots .(3.3)$$

Where: "μ_t" is the error term or disturbance term. However, the equation 3.3 can be restated to capture the natural log of the parameter to be estimated as follows:

$lCMP_t = \beta_0 + \beta_1 lINFR_t + \beta_2 lCRP_t + \beta_3 lCPR_t + \beta_4 lFDIM_t + \beta_5 lFDEX_t + \beta_6 lINR_t + \beta_7 lMS_t + \beta_8 lINS_t + \mu_t$ ..(3.4)

Where: "*lINFR*" denotes logarithms of inflation rates, "*lCRP*" represents logarithms of crude oil price, "*lCPR*" is logarithms of crops production, "*lFDIM*" signify logarithms of food import, "*lFDEX*" is logarithms of food export, "*lINR*" denote logarithms of interest rates, "*lMS*" symbolizes logarithms of money supply, "*INS*" denotes logarithms of insurgence. Although inflation and interest rates are expressed as percentages, logging them reduces heteroscedasticity, manages extreme values during high volatility, and allows coefficients to be interpreted as elasticities, making percentage change interpretations more straightforward (Gujarati, & Porter, 2009; Wooldridge, 2016).

The data analysis employs both descriptive and inferential statistical techniques. Descriptive statistics are used to summarize the characteristics of each variable. These statistics provide insights into the distribution, central tendency, and dispersion of the data, assisting in the identification of patterns and potential outliers. For inferential analysis, the study applies multicollinearity test, unit root test, and ARDL techniques. Multicollinearity is assessed through correlation analysis, which identifies strong linear relationships between independent variables. High correlations (close to +1 or -1) indicate multicollinearity, potentially leading to inflated standard errors and unreliable coefficient estimates (Gujarati, 1995). Additionally, the stationarity of the time series data is examined using unit root tests such as Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests. These tests determine whether the variables are stationary or require differencing to achieve stationarity. Non-stationary variables can result in spurious regressions (Philips, 1988; Granger, 1988). The ADF test is specified as:

$$\Delta Y_t = \beta_1 + \beta_2 t + \delta Y_{t-1} + \sum_{k=1}^{m} Y_i \, \Delta Y_{t-1} + \mu_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3.5)$$

Where: ΔY_t = First difference of Y_t, Y_{t-1} represent the Lagged value of Y_t, δ denotes the Test coefficient, μ_t is the Error term, β_1 is the Constant, and β_2 represent the Coefficient of the time variable. The PP test (1988) equation is specified as.

$$\Delta CMP_t = \partial_t + \beta_t + (\rho - 1)\gamma_{t-1} + \varepsilon_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3.6)$$

Where: CMP_t = Commodity prices is the variable of interest, ∂_t = the intercept, β_t = the linear time trend, Δ = the first difference operator, ε_t = the error term with zero mean and constant variance. The purpose of using ARDL in this study is that; the model is applicable even if the series under investigation are stationary at I (0) or I (1) or a mixture of both. Secondly, it provides a robust and high reliable quality result even if the sample size is large or small. Finally, the approach takes into consideration the error correction model **(Pesaran, Shin, & Smith 2001)**. The ARDL model is specified as:

$$\Delta lCMP_{t-1} = \beta_0 + \sum_{i-1}^{m} \beta_1 lCMP_{t-1} + \sum_{i-1}^{m} \beta_2 lINFR_{t-1} + \sum_{i-1}^{m} \beta_3 lCRP_{t-1} + \sum_{i-1}^{m} \beta_4 lCPR_{t-1}$$
$$+ \sum_{i-1}^{m} \beta_5 lFDIM_{t-1} + \sum_{i-1}^{m} \beta_6 lFDEX_{t-1} + \sum_{i-1}^{M} \beta_7 lINR_{t-1} + \sum_{i-1}^{m} \beta_8 LMS_{t-1}$$
$$+ \sum_{i-1}^{M} \beta_9 lINS_{t-1} + \beta_1 \Delta lCMP_{t-1} + \beta_2 \Delta lINFR_{t-1} + \beta_3 \Delta lCRP_{t-1} + \beta_4 \Delta lCPR_{t-1}$$
$$+ \beta_5 \Delta lFDIM_{t-1} + \beta_6 \Delta lFDEX_{t-1} + \beta_7 \Delta lINR_{t-1} + \beta_8 \Delta lMS_{t-1} + \beta_9 \Delta lINS_{t-1}$$
$$+ \gamma ECM_{t-1} + \mu_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3.7)$$

From the above ARDL model, *LCMP, LINFR, LCRP, LCPR, LFDIM, LFDEX, LINR, LMS,* and *LINS* stands for the lag length of the long run, the short run effect of the impact of inflation rates on commodity price in Nigeria are detected by the sign and significance of Δs, also the sign and significance of $\beta_1$normalized on β_9 showing the long run effects. The ARDL cointegration bound test is specified as:

$$Y_t = \alpha + \sum_{i=1}^{p} \beta_1 Y_{t-i} + \sum_{i=1}^{q} \beta_2 X_{t-i} + \mu_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3.8)$$

Where: Y_t is the dependent variable, X_{t-i} represent the independent variable, p denotes the maximum lag length of the dependent, p is the maximum lag length of the independent variable, α represent the constant term, $\beta_1 - \beta_2$ represent the coefficient of the parameters to be estimated, while μ_t denotes the error term. Causality was employed to test for the causal relationship between the parameters. This is specified as follows:

$$X_t = \alpha_1 + \sum_{k=1}^{m} \beta_1, KX_{t-k} + \sum_{k=1}^{m} \beta_1, K\ Y_{t-k} + \sum_{k=1m}^{m} X_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3.9)$$

$$Y_t = \delta_2 + \sum_{k=1}^{m} \delta_2, K\ Y_{t-k} + \sum_{k=1}^{m} \delta_2, K\ X_{t-k} + \sum_{k=1}^{m} Y_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3.10)$$

The above Granger causality equation describes the Granger causality association inflation and commodity prices in Nigeria.

4. Results and Discussions

Table 4.1: Results of the Descriptive Analysis

Varbs.	Mean	Media	Max	Min	Std.Dev.	Skew.	Kurt.	Obs.
CMP	1.3640	1.6693	2.4408	-0.1419	0.8370	-0.5711	1.8572	44
INFR	18.872	12.941	72.835	5.3888	16.149	1.9032	5.6196	44
CRP	0.9868	1.1997.	2.5006	-0.9763	1.1665	-0.4650	1.8428	44

FDIM	10.230	10.178	10.780	9.5923	0.3860	0.0114	1.5717	44
FDEX	10.415	10.351	11.064	9.7122	0.3832	0.1063	1.7094	44
INR	17.048	16.898	31.650	8.4316	4.9129	0.3458	3.4887	44
MS	1.2500	1.2746	1.9433	0.1423	0.3666	-0.9032	4.2701	44
INS	0.9430	0.9283	1.4248	0.3830	0.2877	-0.1719	1.7004	44

Source: Author's Computation EViews 12

Table 1 presents the descriptive statistics for inflation rates and commodity prices in Nigeria. The average inflation rate is 1.3, while the average commodity price is 18.8. The inflation rate ranges from -0.1 to 72.8, indicating periods of significant economic instability, whereas commodity prices range from 5.3 to 2.4, demonstrating greater stability. The standard deviation for inflation rates is 16.1, reflecting considerable volatility due to economic instability, policy changes, and external shocks. In contrast, commodity prices have a lower standard deviation of 0.8, suggesting relative stability driven by more predictable supply and demand factors. Overall, the results indicate that while commodity prices are relatively stable, inflation rates are prone to extreme variations often influenced by broader economic and geopolitical factors.

Table 4.2: Results of Multicollinearity Test (Correlation Analysis)

Varbls.	LCMP	INFR	LCRP	LFDIM	LFDEX	INR	LMS	LINS
LCMP	1	0.3919	0.2444	0.0152	0.0911	0.1581	0.2535	-0.2018
INFR	0.3919	1	0.3846	0.1097	-0.0519	0.0134	0.0472	-0.0053
LCRP	0.2444	0.3846	1	0.3331	0.6311	0.3048	0.2266	-0.3829
LFDIM	0.0152	0.1097	0.3331	1	0.7654	-0.2370	0.4156	-0.0431
LFDEX	0.0911	-0.0519	0.6311	0.7654	1	0.1462	0.5794	-0.2250
INR	0.1581	0.0134	0.3048	-0.2370	0.1462	1	0.0304	-0.0349

LMS	0.2535	0.0472	0.2266	0.4156	0.5794	0.0304	1	0.0773
INS	-0.2018	-0.0053	-0.3829	-0.0431	-0.2250	-0.0349	0.0773	1

Source: Author's Computation EViews 12

Table 4.2 revealed the results of the multicollinearity via correlation analysis. Evidence from the findings suggested that there is no presence of multicollinearity among the parameters used in this model. As evident by the coefficient correlation of less than 0.70 across all the parameter employ in this model. Multicollinearity arises when two or more independent variables are highly correlated, typically when correlation coefficients exceed ±0.8 or ±0.9 (Gujarati & Porter, 2009). High multicollinearity can distort the estimation of regression coefficients, inflate standard errors, and weaken the statistical significance of predictors. In this study, none of the correlation coefficients exceed the 0.8 threshold, suggesting that multicollinearity is not a serious issue.

Table 4.3: Result of the Augmented Dickey Fuller (ADF) Unit Root Test

	Augmented Dickey Fuller Test (ADF)							
	Level				First Diff.			
Var.	Inter.	P-value	Trend	P-value	Inter.	P-value	Trend	P-value
LCMP	-1.761	0.394	-1.767	0.960	-3.804	0.005***	-4.032	0.015**
INFR	-2.026	0.040**	-3.081	0.123	-12.19	0.000***	-5.269	0.000***
LCRP	-1.204	0.663	-1.452	0.830	-7.131	0.000***	-8.421	0.000***
LFDI	-0.865	0.789	-2.515	0.319	-6.609	0.000***	-6.720	0.000***
LFDE	-0.958	0.759	-2.802	0.204	-6.358	0.000***	-6.256	0.000***
INR	-2.403	0.014	-2.205	0.477	-7.142	0.000***	-7.358	0.000***
LMS	-5.269	0.000***	-5.178	0.000***	-22.60	0.000***	-25.79	0.000***
LINS	-1.530	0.508	-1.869	0.652	-7.206	0.000***	-7.158	0.000***

Source: Author's Computation, Eviews 12, Significant at 1%(***), 5%(***), 10(*),

Table 4.4: Result of the Philip Perron (PP) Unit Root Test

	Philip Perron (PP) Unit Root Test							
	Level				First Diff.			
Var.	Inter.	P-value	Trend	P-value	Inter.	P-value	Trend	P-value
LCMP	-1.761	0.394	-0.767	0.960	-3.804	0.005***	-4.032	0.015**
INFR	-3.026	0.040**	-3.081	0.123	-12.19	0.000***	-12.805	0.000***

LCRP	-1.204	0.663	-1.452	0.830	-7.131	0.000***	-8.421	0.000***
LFDI	-0.865	0.789	-2.515	0.319	-6.609	0.000***	-6.720	0.000***
LFDE	-0.958	0.759	-2.802	0.204	-6.358	0.000***	-6.256	0.000***
INR	-2.403	0.146	-2.2005	0.477*	-7.142	0.000***	-7.358	0.000***
LMS	-5.269	0.000***	-5.178	0.000***	-22.60	0.000***	-25.09	0.000***
LINS	-1.530	0.508	-1.869	0.652	-7.206	0.000***	-7.158	0.000***

Source: Author's Computation, Eviews 12, Significant at 1%(***), 5%(***), 10(*)

Table 4.3 and 4.4 revealed the results of the Augmented Dickey-Fuller and Philips Perron unit root test. The result shows that all variables were all stationary at a level value 1(0) and after first difference and I(1) respectively. This is inconformity with the ARDL model requirement. The coefficient of all the variable employed in this study were negative and statistically significant which are expected for the unit roots test.

Table 4.5: Results of the Lag Length Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-2823.4	NA	2.17e+51	138.07	138.36	138.17
1	-2613.8	337.52	8.88e+47	130.23	132.57*	131.08
2	-2523.4	76.581*	6.31e+47	129.68	134.06	131.27
3	-2484.5	63.853	4.49e+47*	128.70*	135.14	131.05*

Source: Author's computation, Eviews 12

Table 4.5 present the results of the lag length selection criteria, that is the lag length to be included in the model. The results revealed that the optimal lag length for the model is 3. This is based on the fact that lag 3 has the lowest values for the Schwarz Criterion (SC) and Hannan-Quinn Criterion (HQ); smaller values indicate a better model fit. Also, most of these selection criteria suggest using a lag of 3.

Table 4.6: Results of the Co-integration Bound Test

Test Stat.	Value	Sign. Level	Upper Bound 1(1)	Lower Bound 1(0)
F-Statistics	6.7	1%	3.9	2.7
K	7	5%	3.2	3.2
		10%	2.9	1.9
Significant at 1%(***), 5%(***), 10(*)				

Source: Author's Computation, Eviews 12

Table 4.6 present the results of the long run cointegration between inflation rate and commodity prices. The result of the ARDL cointegration bound test revealed existence of co-integration among the time series variable. This is because the F-statistic of 6.7 is larger than the upper bound I(1) of 3.9, 3.2, 2.9 at 1%, 5%, 10% and the lower bound I(0) of 2.7, 3.2, 1.9 at both 1%, 5%, 10% level of significance. This suggest that all the variable have long run equilibrium that kept them together in the long run. That is to say all the variables moves together in the same direction.

Table 4.7: Result of the ARDL Estimation Test (Long run and short run Estimate)

Dependent Variable: EXR				
Ind. Variables	Coefficient	Std. Error	t-Statistic	P-value
INFR	0.0025	0.0010	2.3098	0.0462**
LCRP	0.6394	0.1899	3.3670	0.0083***
LFDIM	-0.4020	0.1455	-2.7613	0.0221**
LFDEX	-0.3898	0.1968	-1.9802	0.0790*
INR	-0.0191	0.0071	-2.7032	0.0243**
LMS	0.3237	0.0786	4.1164	0.0026***
LINS	-0.2474	0.1421	-1.7399	0.1159
ΔINFR	-0.0025	0.0010	-2.3098	0.0462
ΔLCRP	-0.7166	0.2355	-3.0418	0.0140**

ΔLFDIMP	-0.4020	0.1455	-2.7613	0.0221**
ΔLFDEX	0.7454	0.2392	3.1160	0.0124**
ΔINR	-0.0057	0.0036	-1.5746	0.1498
ΔLMS	0.1483	0.0441	3.3593	0.0084***
ΔLINS	0.2047	0.0822	-2.4893	0.0345**
C	6.6360	2.1157	3.1364	0.0120**
ECM	-0. 7165	0.0670	-10.682	0.0000***

R^2 = 0.93, Adjusted R^2 = 0.86, Dubin Watson Statistics = 2.92, F-Statistics = 290.83 (0.0000)

Source: Author's Computation, Eviews 12, Significant at 1%(***), 5%(**), 10%(*)

Table 4.7 shows the result of the long run and short run ARDL estimation on the impact of inflation rate on commodity prices in Nigeria. There is a positive and significant long-run relationship between inflation and commodity prices, meaning that as inflation rises, commodity prices tend to increase. Factors like demand-pull inflation and investor behavior (viewing commodities as a hedge against inflation) contribute to this relationship. The short-run relationship is negative, suggesting in the short run, commodity prices may be influenced more by supply and demand fluctuations, geopolitical events, or cost-push factors (e.g., rising production costs) rather than inflation alone. In the long run, higher crude oil prices have a positive effect on commodity prices, as oil price increases stimulate government spending and contribute to inflation. However, in the short run, rising oil prices may increase production costs, leading to a negative impact on commodity prices. Both food imports and money supply have a positive long-run relationship with commodity prices. An increase in money supply boosts consumer and business spending, increasing demand for commodities. Interest rates negatively impact commodity prices in the long run. Rising interest rates increase borrowing costs, reduce consumer spending, and lower investment in commodity production, leading to reduced demand for commodities. Insurgencies have a non-significant long-term impact on commodity prices, suggesting that the Nigerian commodity market has developed resilience to disruptions. However, in the short run, insurgencies can cause supply disruptions, leading to higher commodity prices.

In the short run, a rise in food exports can drive up prices, especially if there is strong international demand for agricultural commodities. This finding supports the idea that international demand can influence local prices in the short term. There is a non-significant short-run relationship between interest rates and commodity prices. In the short run, immediate factors like supply and demand, seasonal fluctuations, and geopolitical events play a more prominent role than interest rates. In summary, the relationship between inflation and commodity prices in Nigeria is complex, with long-run positive effects and short-run negative effects. Other factors like crude oil prices, food imports, and interest rates also play crucial roles in shaping commodity price trends. Short-run disruptions, such as insurgencies, can impact prices, but overall, the market has shown resilience to these shocks.

Table 4.8: Result of the Pairwise Granger Causality Test

Null Hypothesis	Obser.	F-statistics	P-value
INFR does not granger cause LCMP	42	1.9726	0.1535
LCMP does not granger cause LINFR	42	5.7096	0.0069***

Source: Author's Computation, Eviews 12, Significant at 1%(***), 5%(**), 10%(*)

Table 2 presents the results of the pairwise Granger causality tests examining the causal relationships between inflation rates and commodity prices. The findings reveal that there is no significant Granger causality between inflation rates and commodity prices in either direction. This suggests that past values of inflation do not significantly predict future commodity prices, and vice versa. The absence of causality implies that fluctuations in inflation rates are not a reliable predictor of changes in commodity prices within the period studied. Therefore, the null hypothesis, which states that inflation rates do not Granger-cause commodity prices, is accepted, and the alternative hypothesis is rejected.

Table 4.9: Results of the Diagnostic Test

Test	F-statistics	P-value
Heteroscedasticity	0.4901	0.9264
Normality Test	0.6053	0.5522
Serial Correlation LM Test	3.2707	0.1948

Author's Computation Eviews 12.5

Table 4.9 displays the results of the diagnostic tests conducted, which included tests for heteroskedasticity, the Breusch-Godfrey serial correlation LM test, and a normality test. The results showed no evidence of heteroskedasticity or serial correlation among the variables, as the probability values for all tests were statistically non-significant.

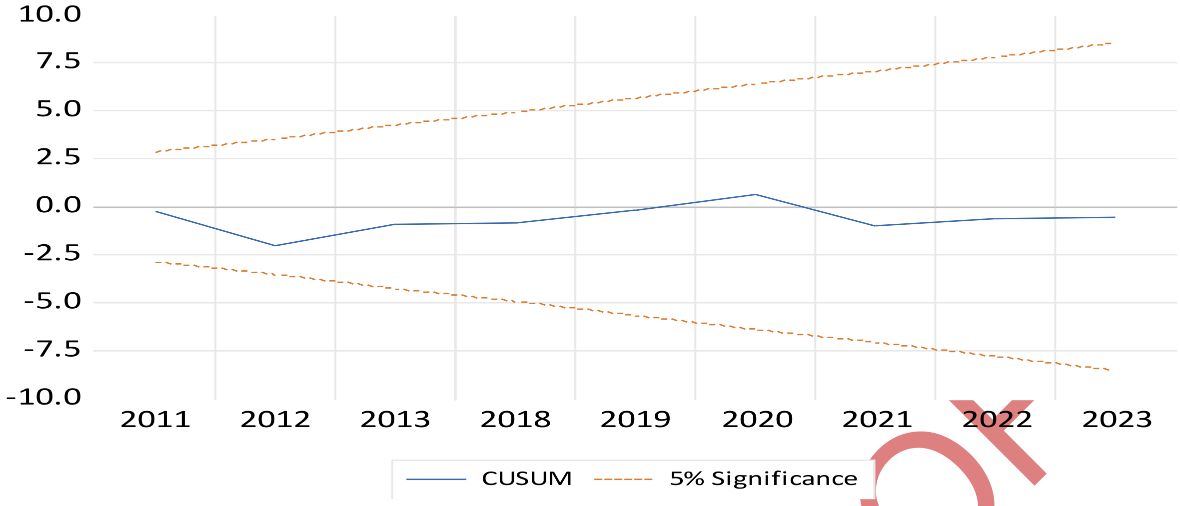

Figure 4.1: QUSUM Test

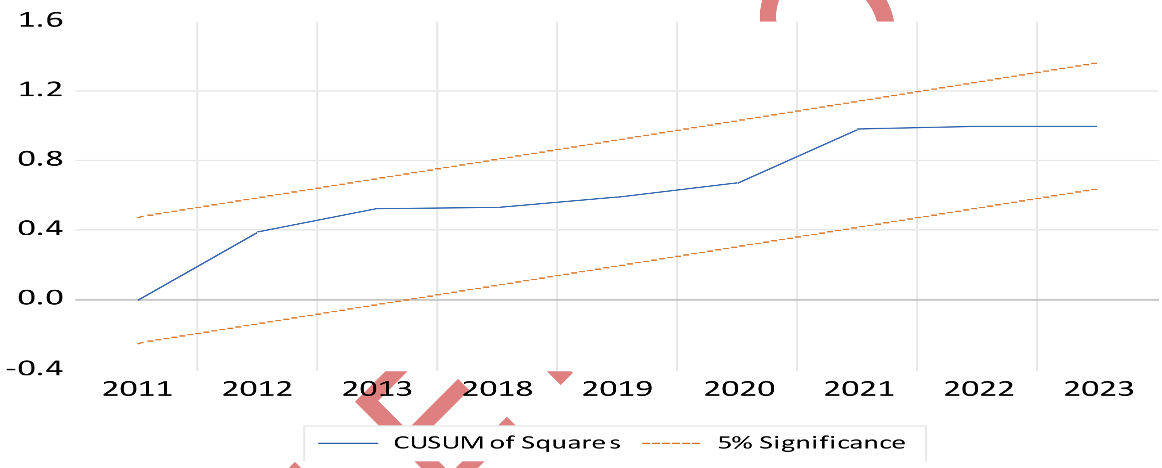

Figure 4.2: CUSUM-Q Test

Fig. 4.1 and 4.2 shows that the result of the stability test using Cusum and Cusum of squares test. The result from the Cusum and Cusum of squares test revealed that the estimated parameters under study were stable; this is because the sums of recursive errors for both the test fall between the two critical lines of the CUSUM and CUSUM of squares test. This implies that there is no structural break over the period of the study among the parameters under investigation.

5. Conclusion and Policy Recommendation

The study investigates the impact of inflation on commodity prices in Nigeria using both short-run and long-run ARDL estimations and Granger causality analysis. The findings indicate a positive and statistically significant long-run relationship between inflation and commodity prices, suggesting that over time, rising inflation contributes to higher commodity prices. This is likely due to mechanisms such as demand-pull inflation and investor behavior that favors commodities as an inflation hedge.

In contrast, the short-run relationship between inflation and commodity prices is negative, implying that short-term price changes are more influenced by supply-demand fluctuations, geopolitical events, and cost-push factors rather than inflation alone. Variables such as crude oil prices, money supply, and food imports show a positive long-run effect, while interest rates have a negative long-run impact. Insurgencies and food exports show short-run significance due to their disruptive effects on supply and market dynamics. Interestingly, the Granger causality test results show no significant causal relationship between inflation and commodity prices in either direction. This suggests that while inflation correlates with commodity prices over the long term, it does not necessarily *cause* those changes, and vice versa. The study recommends the need for policymakers should control inflation through sound economic policies, manage oil revenues efficiently, and invest in local agriculture to reduce import dependence. Ensuring stable interest rates and money supply, while addressing short-term shocks, can help stabilize commodity prices.

While there are numerous macroeconomic variables that influence commodity prices beyond inflation, this study addresses this limitation by focusing on the most **decisive factors** affecting commodity prices in Nigeria. Specifically, the analysis includes key variables such as **crop production, food imports, food exports, interest rates, money supply, and insurgencies**, which are considered highly relevant to the Nigerian context and have significant potential to impact commodity price trends. Nevertheless, future studies should integrate models that account for structural changes in the Nigerian economy, such as economic reforms or global crises (e.g., COVID-19, Russia-Ukraine war). Examine the impact of inflation on sector-specific commodity prices, like agriculture, energy, and metals, for more nuanced insights. Extend the analysis to a cross-country panel study within Sub-Saharan Africa to compare results and explore regional patterns.

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Analysis of Logistic and Infrastructural Constraints of Inland Water Transportation in North Central Nigeria

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Abstract
In spite of the high potentials for Inland Waterway Transport (IWT) development in Nigeria, its service has not been able to meet the required standard. This decline in the utilization of the inland waterways as a viable transport mode in Nigeria can be attributed to, among others, logistic and infrastructural constraints. This study aims at examining logistic and infrastructural challenges of IWT in North Central Nigeria from both the river ports perspective and waterways perspective. It was cross-sectional survey research carried out on river ports of Baro, Lokoja and Makurdi, and their waterways linking different jetties. Data was collected through questionnaires, oral interview and field observations. A total of 473 structured questionnaires were distributed (392 to users, and 81 to the operators) while 465 were retrieved. Perception of respondents on conditions and functionalities of jetty and waterway infrastructure was obtained using the Likert Scale of measurement. Descriptive statistics was used in data analysis using tables, charts, percentages, mean score, skewness and kurtosis. The analysis of infrastructural conditions on the jetties revealed that accessibility to jetties, loading and unloading equipment, and storage facilities were rated highly while availability of boats/jetties, punctuality of boats/ferry, and availability of safety gadgets were rated highly in the analysis of infrastructural conditions for waterways. The study therefore recommends upgrade and maintenance of jetty infrastructure through public private partnership. The paper also recommends regular capital and maintenance dredging in order to give room to all year-round navigation in the waterways.

Keywords: infrastructure, jetties, waterways, logistic constraints, inland waterway transportation.

1.0 Introduction

Transport is made up of different modes through which passengers and freight achieve mobility. Transport modes are designed to carry either passengers or freight, but most modes can carry a combination of both, (Rodrigue, 2014). An efficient transportation system covering rail, waterways, air, and road, is a catalyst for economic growth and development (Olaniyi and Oniru, 2017). Water transport is of two categories: marine (sea) transport and inland water transport. Marine transportation uses cargo ships, passenger ships, boats, etc. in logistics and transport service delivery, while inland waterway transport (IWT) concerns with movement of freight and person by inland water that is not categorized as 'sea', such as on canals, rivers, lakes, and estuaries. IWT takes place either between a deep-sea port and an inland port or between inland ports themselves. It offers safer and cheaper rates in areas where water exist naturally and is also considered more effective, and environmental pollution is lower compared with corresponding volumes of movement by road, rail or air (Ojile, 2006).

In spite of the high potentials for IWT development in Nigeria, the mode has been highly underdeveloped, its service has not been able to meet the required standard, and it has suffered so much neglect over time in terms of investment and drive by both the government and the private sector (Akpudo and Stephens, 2020; Akpudo *et al*., 2022). The decline in the utilization of inland waterways as a viable transport mode in Nigeria can be attributed to factors such as poor water transportation infrastructure, poor safety measures, inadequate and obsolete fleet capacity, lack of navigational charts and river maps, blockage of channels by water hyacinth, among others (Obeta, 2014; Akinbamijo *et al.,* 2016; Obamiro *et al.*, 2018; Akpudo and Stephens, 2020; Osuji and Agbakwuru, 2023).

It can be seen from the above that most of the challenges of inland waterway transportation in Nigeria are logistic and infrastructural related. It is against this backdrop that this study appraises logistic and infrastructural constraints of IWT in the North Central Nigeria.

2.0 Literature Review

2.1 Conceptual framework

2.1.1 The concept of inland water transportation

The inland waterway transportation (IWT) system is playing an increasing role in the trade and commerce of both developed and developing nations, especially with increase in Container on Berge transportation which facilitates intermodal transportation (Caris *et al.*, 2011; Bu and Nachtmann, 2021). The worldwide concerns about global warming and highway traffic congestion are among the incentives to revitalize inland waterway shipping in some developed countries (Wang and Li, 2012). Inland waterways are made up of navigable rivers, lakes, coastal creeks, lagoons and canals (Aderemo and Mogaji, 2010). Inland water transportation (IWT) as a component of water transport deals with the movement within national territories by the use of watercrafts such as pontoons, river ferries, and boats over a body of water, such as a lake, river or canal (Akpudo and Stephens, 2020). IWT processes, involves several actors which usually include inland port and terminal operators, shippers, vessel operators, skippers, truck operators for pre- and end-haulage and logistics service providers. Inland water transportation plays a key role in the socio-economic and political development in Nigeria as a factor of exchange, mixing of population and sub-regional integration (Akali and Idoko, 2010). Inland waterway infrastructure is defined as terminals, rivers, canals, bridges and locks (Wiegmans and van Duin, 2017). The comparative advantages of IWT in transporting large quantities over longer distances include safety, sustainability, and cost-efficiency in terms of overall transport costs, the energy consumption per ton-kilometre, low rate of accidents and low congestion. IWT plays a vital role in urban growth and development as well as serves as a link between urban centres and agricultural rural areas by offering cheap means of conveying passengers and bulk produce (Akpudo and Stephens, 2020).

However, the use of IWT in the inland transport logistics chains is highly dependent on a country's access to a waterway network (UNECE, 2019).

2.1.2 The concept of transportation infrastructure

Transport system is an organized whole of all modes of transport, operating in a particular area, and thus including all fixed and non-fixed assets, the human factor and the intermodal interconnections of the whole entity, as well as the links of the entire transport system with the environment. Adeniran and Yusuf (2016) identified four elements of transport system, of which two of them are infrastructural. They include transportation network (i.e. roads, railways, airways, canals, pipelines) and nodes or terminals (such as airports, railway stations, bus stations, river ports, and seaports). According to Szymonik, (2013), the inland waterway infrastructure includes: land, channels, works for waterways shut off and safety, dams and weirs, navigable locks, mooring equipment and jetties, movable bridges, devices for marking channels, signaling, safety, telecommunications, and lighting, traffic control devices, toll collection devices and buildings used by the infrastructure section. Inland waterway infrastructure is defined as terminals, rivers, canals, bridges and locks (Wiegmans and van Duin, 2017). Wiegmans *et al.* (2015), defined inland ports as transportation infrastructures along waterways with facilities and equipment for loading and unloading ships.

El-Nakib, and Roberts, (2006), identified elements of inland water infrastructure as the following;

- Navigational channels, comprising, water level existence of locks and bridges, connections between different navigational channels, Facilities for night navigation, navigational aids/traffic signs, navigational maps
- River Ports which include accessibility to jetties/inland ports, intermodal/multimodal connectivity, jetty facilities such as warehouses, parking spaces, cargo handling equipment

In their conclusion they stated that investment in inland waterway infrastructure is an important one because they must accommodate current traffic and anticipate future trends and also technological and logistical changes.

2.2 Theoretical Framework

2.2.1 The theory of spatial interaction

A systematic approach to the study of transportation in the context of spatial interaction was developed by Edward Ullman (1954). The fundamental concept also known as Ullman's Principles stated that conditions for spatial interaction are often used to explain the theoretical basis for movement in space. The theory stipulates those three conditions; complementarity, intervening opportunity and transferability are important for movement to take place.

Complementarity: This implies that for two places to interact there must be a demand in one place and supply at another and these demands and supplies must be specifically complementary. Complementarity alone would guarantee interaction if and only if there are no intervening opportunities between the two places.

Intervening opportunity: When there is emergence of alternative areas to satisfy the demand of initial area, there will be reduced movement or the movement can stop completely. According to Abler *et al.*, (1971) intervening opportunity is a spatial sponge soaking up potential interaction between two complementary places. Complementarity among places can generate interaction only in the absence of intervening opportunities.

Transferability: The third condition necessary for interaction to take place is transferability. That is the friction of distance which is measured in terms of time and money costs. Transferability is a very critical condition as it determines the level of allowable interaction between places. Even if the other two conditions are met, the monetary cost of traversing distance is too high or the time is very long, the level of interaction will reduce drastically. Transferability differs from one mode to the other and from one place to another.
The spatial interaction theory of Ullman has offered explanations to the trend and structure of interaction in inland waterways and transportation as well as freight and passenger movements across the water. Improvement in transport infrastructure such as waterways may reduce time and monetary costs to traversing distance, thereby increasing accessibility, in other words, the level of interaction between places.

2.3 Empirical Review of Literature

Several studies have been undertaken on inland waterway transportation in Nigeria and beyond ranging from evaluation of operational performance, growth and development; operational efficiency, sustainability of the system (conditions and functionalities of the infrastructure), through factors affecting its operational efficiency, including policies and institutions that have shaped the growth and operations, and its contributions to the socio-economic development, to prospects, challenges and problems of the transport system.

From the mainland China, He *et al.,* (2017) measured water transport efficiency in the Yangtze River Economic Zone (YREZ) from 2003 to 2011. They conducted spatial analysis to identify the leading factors influencing efficiency; and provided scientific evidence for a macroscopic grasp of water transport development and optimization of YREZ. Data Envelopment Analysis (DEA) and the Malmquist Index were used as a model framework. The research came up with the following results: the water transport technical efficiency (TE) in the YREZ is low and in fluctuating decline; the spatial pattern of TE has gradually changed from complexity and dispersion to clarity and contiguity; and the water transport efficiency has slightly improved through technological change. The authors recommended that decision-makers should consider strengthening intra-port competition and promoting water transport efficiency.

Baodu *et al.,* (2021) addressed numerous constraints which impede smooth operations and industrial development of IWT system in Ghana and other countries. The authors used observation, personal interview and questionnaires to collect data from industry players and other informal IWT operators. Based on the feedback from the respondents, the predominant constraints include: market constraints, logistics and infrastructural constraints, administrative constraints, and technical constraints. The study went further to recommend improvement and infrastructural development, institutionalization and proper regulations of IWT, dredging or periodic maintenance of navigational channels, and promotion of integrated transport planning.

Akpudo and Stephens, (2020) assessed operational characteristics and supply of IWT in the coastal area of Anambra State, Nigeria. The authors used survey design approach, and in their analysis, used descriptive statistics for the assessment of operational characteristics, and multiple regression for determination of the factors that influence the supply of IWT in the area. The operational characteristics revealed a male dominated, low educated, privately owned vessels, and no government presence in the area. Demand had the most significant impact on the supply of IWT in the area. The authors recommended government intervention in form of providing convenient, safe, affordable and regular ferry services to boost economic activities in the area.

Akpudo *et al.,* (2022) assessed the problems and prospects of IWT in South Eastern Nigeria, using Omo - Mbala River in Anambra State as a case study. The authors used on the spot survey and administration of questionnaires to water transport users and all registered operators within the three selected routes in the study area. Descriptive statistics was used in the analysis of data. The study revealed that insecurity and poor state of the terminals are the major challenges of IWT operations in the area. The study further revealed that the prospect of IWT in the study area would be mostly for trade and commerce. The authors recommended collaboration between the government and stakeholders in funding, upgrading and managing the available infrastructure in the study area.

Ahmad *et al.*, (2022) examined the users and operators' challenges facing IWT in Borgu Local Government Area of Niger State. This study led to measuring of performance management of the operators, and to tracking IWT performance against the targeted objectives in terms of productivity, job satisfaction, turnover and quality of service. The scholars adopted questionnaire survey (395 respondents), designed on a 5-point Likert scale. In assessing the users' challenges, the researchers revealed there is difficulty in access to the boat, boats are old, too long waiting time, boats are not safe, no security, etc. For operators' challenges, the study found out that there is lack of operational control and regulations, poor infrastructures, extortion of money from the operators by the marine police, obstruction of waterways, and seasonality in water level/volume. The authors recommended provision of life jackets and other safety gadgets, adequate maintenance of vessels, and construction of motorable roads to improve intermodal connectivity.

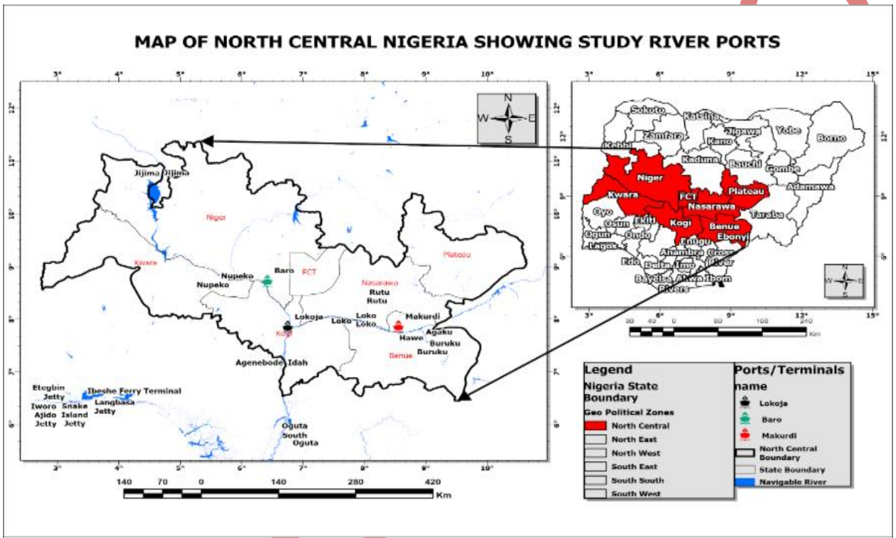
It can be seen from the reviewed studies above, that most of them were done outside North Central Nigeria, and the one carried out in North Central Nigeria, did not focus on infrastructural and logistic constraints. It is in this light that this study examined the logistic and infrastructural constraints of IWT system in North Central Nigeria.

3.0 Methodology

3.1 Study Area

The study area is North Central Nigeria, which lies between Latitude 6˚32' and 11˚21' N, and Longitude 2˚45' and 10˚38' E, altogether enclosing a total landmass of 242,425 square kilometers. Case study river ports include Baro River Port (Niger State), Lokoja River Port, (Kogi State), and Makurdi River Port (Benue State) and their waterways (Figure 1.1).

Figure 1.1: Map of North Central Nigeria, showing Rivers Niger and Benue and study river ports.



Source: Author's fieldwork, 2024.

Nigeria is blessed with a large resource base of waterways spanning 10,000 kilometres; about 3,800 kilometres is navigable seasonally, plus an extensive coastline of more than 852 kilometers (Figure 1.2). Twenty-eight of the nation's 36 States can be accessed

through water. Nigeria can also link five of its neighbouring countries–Benin Republic, Equatorial Guinea, Cameroon, Chad, and Niger Republic by water, (NIWA 2006; Badejo 2009; Ndikom, 2013; Obeta, 2014; Obamiro *et al*., 2018; Osuji and Agbakwuru 2023).

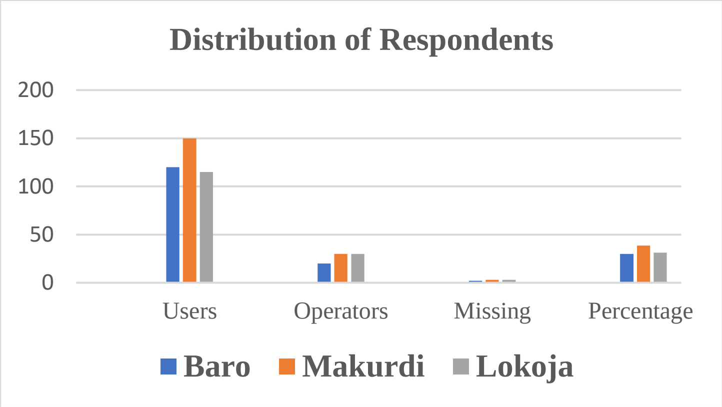
3.2 Methods

This study focuses on three river ports, Baro River Port, Lokoja River Port, and Makurdi River Port, and their waterways. They were selected due to their strategic locations in Nigeria, and because they are navigable throughout the year by means of dredging. The study employed survey research design and data used was collected mainly from IWT users and operators. The users (passengers and shippers) and operators were the primary focus because they commonly use and work the inland water transport system respectively. A total of 473 questionnaires were distributed while 465(385 for users, and 80 for operators) were returned. Samples were randomly collected from each case study river port which served as a cluster. The questionnaires were structured to obtain the ratings on conditions and functionalities of jetty and waterway infrastructure using Likert Scale of measurement ranging from 5 (Very Good), 4 (Good), 3 (Poor), 2 (Very Poor) to 1 (Not Available). Descriptive statistics was used in data analysis using tables, charts, percentages, mean score, skewness and kurtosis. The analysis was performed in SPSS Version 23.

4.0 Results and Discussion

The distribution of the respondents selected across the three jetties, namely, Baro, Makurdi, and Lokoja is illustrated in Figure 4.1.

Figure 4.1: Distribution of Respondents.



Source: Authors Computation, 2024

A summary of data used to determine the conditions and functionalities of jetty infrastructure and waterway infrastructure in the study area are presented in Table 4.1 and Table 4.3 respectively, while Table 4.2 and Table 4.4 presented responses on the regularity of maintenance of jetty infrastructure and waterway infrastructure respectively.

Table 4.1: Conditions and Functionalities of Jetty Infrastructure

Infrastructure/Facility	Very Good (5)	Good (4)	Poor (3)	Very Poor (2)	Not Available (1)	Mean
Accessibility of jetty	95	125	85	65	95	3.13
Availability of car parks	80	110	100	95	80	3.03
Intermodal connectivity	60	115	95	120	75	2.92

Loading and unloading equipment	75	140	100	85	65	3.16
Storage facilities	85	125	85	110	60	3.14
Cleanliness and maintenance of jetty	90	135	70	85	85	3.22
Comfort on jetty (toilets, shelter, seats)	55	100	120	105	85	2.89
Traffic control devices/Navigation Aids	70	115	90	90	100	3.04
Boat calls (Frequency of boats/ferries)	65	120	85	110	85	3.00
Communication	60	110	95	85	115	2.89
						3.04

Source: Field Survey, 2024

The findings from the Table 4.1 indicate that factors such as accessibility to jetty, loading and unloading infrastructure, and cleanliness of jetties were rated highly, well above the criterion mean score of 3.04. On the other hand, respondents have a low perception of factors such as intermodal connectivity, comfort on jetty, and communication whose rating were below the mean score.

Table 4.2: Frequency of Jetty Facilities Maintenance

Maintenance Frequency	Frequency
Regularly	110
Occasionally	150
Rarely	100
No comment	60
Never	45

Source: Field Survey, 2024

The frequency at which jetty facilities were subjected to maintenance, as indicated in Table 4.2, was a question posed to the respondents. A majority, 150, claimed that maintenance occurred from time to time, while 110 respondents observed that maintenance was conducted regularly. However, an overwhelming number, 100 of the respondents reported that maintenance was undertaken on rare occasions and 45 others indicated that no maintenance was ever done. The findings show unevenness in maintenance experience and signal irregularity in the frequency of upkeep carried out between one location and another.

Table 4.3: Conditions and Functionalities of Waterway Infrastructure

Infrastructure/Facility	Very Good (5)	Good (4)	Poor (3)	Very Poor (2)	Not Available (1)	Mean
Accessibility of boats/ferry	90	140	75	85	75	3.18
Punctuality of boats/ferry	80	130	95	85	75	3.12
Onboard facilities (seats, toilets)	55	120	105	95	90	2.90
Onboard information	60	115	90	100	100	2.86
Availability of dams and locks	85	135	70	90	85	3.10
Cleanliness and maintenance of boats	75	130	80	100	80	3.07
Traffic control devices/Navigation Aids	60	125	95	85	100	3.00
Onboard communication	65	115	90	85	110	2.94
Availability of safety gadgets	100	140	85	70	70	3.34
						3.06

Source: Field Survey, 2024

The analysis from Table 4.3 indicates that waterways infrastructural facilities such as accessibility to boats/ferry, punctuality of boat/ferry, and availability of safety gadgets were rated to be in good condition and functioning, with their respective means above the criterion mean score of 3.06. Conversely, the conditions and functionalities of waterways facilities such as onboard facilities (seats, toilets), onboard information and onboard communication were rated below the criterion mean of 3.06 indicating that their conditions and functionality require much to be desired.

Table 4.4: Frequency of Waterways Maintenance

Maintenance Frequency	Frequency
Regularly	125
Occasionally	155
Rarely	95
No comment	50
Never	40

Source: Field Survey, 2024

Table 4.4 shows the frequency of maintenance of boat and waterway facilities. Based on the response of the surveyed population, as indicated in Table 4.16, the majority of the respondents—155—stated that maintenance happens only from time to time, while 125 have reported that it happens regularly. Similar to jetty infrastructure though, a quite disturbing number of 95 respondents reported that maintenance of boats and supposedly of waterways themselves is rarely conducted, while 40 respondents stated that this was never done. These results indicate that the facilities along the waterways are not uniformly maintained, since most areas receive irregular upkeep that may affect the overall performance and safety of the water transport services.

The findings of this study is line with some past research findings. For instance, Owoputi (2017), in assessing the opportunities and challenges of inland waterway transport in the South Western Nigeria scored IWT high on accessibility to boats, low on jetty facilities, high on radar coverage and navigation equipment, and reported a dire need in the area of channelization and dredging. Other studies which earlier revealed poor and inadequate infrastructure, insufficient number of vessels, and poor river dredging are Ahmad *et al*. (2022), and Ogboeli (2024).

5.0 Conclusion and Recommendations

The study focused on the logistic and infrastructural challenges of inland waterway transportation in North Central Nigeria by examining the conditions, functionalities, and regularity of maintenance of jetty and waterways infrastructure. The study adopted cross sectional survey research in which three river ports of Baro, Lokoja and Makurdi were used as case study ports. Descriptive method of data analysis was used in the investigation. The outcome of the study shows that intermodal connectivity, jetty facilities and communication pose logistic constraints in the IWT in the area. The study also concluded that the greatest infrastructural challenges on the waterway is lack of onboard facilities, lack of onboard communication and information. Surprisingly though, loading and unloading equipment, traffic control devices, and availability of safety gadgets are found to be available and functioning.
It is therefore recommended that:

1. Intermodal connectivity with other means of transportation should be pursued. This will bring about logistic efficiency and increased demand for inland transport.
2. Regular maintenance of infrastructure both on the jetties and on the waterways to avoid decay. Maintenance and Capital dredging are required to make some sections of the waterways navigable all the year round
3. Adequate and timely communication is key in logistics industry, and as such, communication should be improved.

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Ethical Issues in Claims Management: An Empirical Verification of Fire Insurance in Nigeria

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Abstract

This study examined the ethical issues in claims management, specifically, focused on fire insurance in Nigeria. It scrutinized the significant impact of some ethical issues like conflict of interest during claims and information asymmetry on fire insurance business in Nigeria. The study involved a survey research design. Its population is Enugu urban, Enugu state, Nigeria. A convenient sampling technique was used to select 62 participants from 3 local government areas that make up Enugu urban. Data for the study were collected with the aid of well-structured questionnaire, and Linear Regression Analysis was employed to validate the research hypothesis at 0.05 significant level. The statistical results found that conflict of interest and information asymmetry have 1.049 and 1.149 significant impact on fire insurance business respectively. Among the recommendations were that parties to insurance contract (insurer and insured) should promote transparency throughout the period of the insurance contract, insurers should embrace the use of technology (Insurtech) in insurance business in other to track disclosures, approvals and policy compliance by the insured. It was also recommended that parties to insurance contract should increase their sources of information to obtain unbiased, timely and accurate insight on the contract nature, terms and conditions. The study, however, contributes to knowledge by unravelling the impact of ethical issues in claims management on fire insurance business in Nigeria.

Keywords: Ethical Issues, Claims Management, Conflict of Interest, Information Asymmetry, Fire Insurance.

1.0 Introduction

On several occasions, when there are fire outbreaks, properties and/or lives are lost, individuals or organisations suffer financial losses due to a break in production, resulting to a fall in supply, and little or no contribution to the government revenue within that period (Ugwuoke and Fadun, 2024). The essence of fire insurance, therefore, is to pay for the loss which results from fire at any given time. This is why the main point in the definition of insurance contract is the part in which the insurer undertakes to pay claims at the happening of the insured peril (Kayode, 2021). The insurance against fire is one of the most important forms of insurance contracts for the business world. Fadun, Isimoya and Ugwuoke, (2024) described a contract for fire insurance as where an insurer undertakes to pay a stated sum of money to an insured for losses resulting from fire as a consideration for the premium paid by the insured to the insurer. An insurer will entertain fire insurance claims from the insured who has suffered financial loss resulting from the insured peril of fire, and where the fire was accidental but not intentional.

Fire insurance claims involve a formal request to an insurer by the insured/policyholder for payment following the occurrence of a loss resulting from fire, which is the peril covered by the policy. The Compensation Act, (2006); Eze, (2023) described claims management as a range of activities consisting of advice on claims for compensation, payment or other remedies for loss or damages. The management of insurance claims is a very technical aspect of insurance business and determines the loyalty and opinion of an insured about the insurer (Yusuf and Ajemunigbohun, 2016). Therefore, prompt claims settlement boosts the insureds' confidence and stands as the mirror through which the public sees the insurance industry (Capgemini, 2011; Oluwaleye, Shoyemi and Edewusi, 2020). Hence, the way insurers handle claims has a lot of impact on insurance image and business generally. The issues of integrity and fairness of insurers are often weighed and judged by the claimants according to their satisfaction with the claims handling process (Duncan, 2024).

Onosede, (2013); Unachukwu, Afolabi, and Alabi, (2015) noted that public opinion about insurance business is greatly shaped by insurance company's ability to promptly pay claims to the claimants for losses sustained according to the policy specifications. This is why an effective claims management is essential to the general performance and sustainability of fire insurance companies and Nigeria insurance sector in general (Yusuf and Ajemunigbohun, 2015). Examining the relationship amongst claims management and the success of fire insurance business in Nigeria is of utmost importance, given the fact that claims management is a vital aspect of insurance operations (Banmore, Adefulu and Makinde, 2023). Claims management processes that are transparent, efficiently and effectively managed have positive impacts on customer relationships, legal compliance, fraud deterrence, as well as the general performance of the insurance sector (Kazungu and Barasa, 2017). Therefore, an established claims management practices in the Nigeria insurance sector ought to be reviewed in other to accommodate some critical aspects that will bear the interest of both parties and ensure effective and efficient claims experience in the Nigeria insurance industry.

Previous studies in this area (Yusuf, Ajemunigbohun and Alli, 2017; Sunder, Hai and Lynne, 2024; Fadekemi, 2024) mainly focused on the challenges faced by claims managers and insurers during claims payment. Eze and Victor, (2013) also noted that the Nigerian insurance sector has been experiencing a setback in growth and penetration due to public perception of insurance business as an organized fraud. This setback according to Adebisi, (2014) was because of the insurance companies' poor standards in the assessment, analysis and management of claims, as these have become a great concern to the regulatory authorities, stakeholders and researchers. The inability to promptly pay claims to the extent of policyholder's expectation have often wrongly projected the image of Nigerian insurance industry to the insuring public, even though some ethical considerations and fundamental issues are responsible for delay or nonpayment of claims by an insurer. However, this act of nonpayment or delay may eventually affect the confidence level of the public on the insurance sector (Adebisi, 2014).

Disagreements leading to delay in claims payment are often experienced during claims, but no study has been able to fully outline the solutions to the cause(s) of the disagreement. Tan, Anumba and Soon, (2018) noted also that the insurance industry and independent bodies are not doing enough to find appropriate solutions for possible conflicts during claims before they arise. This conflicts significantly impact insurance business, specifically, fire insurance business in Nigeria. However, little or no pragmatic actions have been taken by the concerned bodies to finding lasting solutions to conflict in insurance contract. The questions now begging for answers are "what leads to conflict during claims in insurance contract, and how can they be managed to strengthen the business relationship between insurers and the insureds?" To answer this question, this study examines the ethical issues in claims management that have impacts on fire insurance business in Nigeria. The specific objectives were to:

I. Examine the significant impact of conflict of interest during claims on fire insurance business in Nigeria.
II. Determine the significant impact of **i**nformation asymmetry (knowledge gap) in insurance practice on fire insurance business in Nigeria.

2.0. Literature Review

2.1. Fire Insurance in Nigeria

The term 'fire' is used to describe a fortuitous or accidental ignition of a thing that was not meant to be on fire (CII,2004; Nyce, 2007; Ukpong, Aduloju and Fadun, 2024). Wahab, (2015) also asserted that fire represents a speedy combustion of a substance in a heated reactive procedure. Hence, fire insurance is the type of insurance coverage where the insurer undertakes to pay claims to the insured when fire damages or destroys a property which is the subject matter of the insurance contact (Ugwuoke and Fadun, 2024). Among the perils cover in fire policy are fire itself, lightning, explosions, fires resulting from riot, malicious damage, strike and so on (Oakes, 2019; Ukpong, Aduloju and Fadun, 2024). The insurers are only on risk after the insured or policyholder has paid the first premium. Umoren and Joseph (2016) noted that the premium paid on insurance contract by the owner of the policy represents the cost of insurance coverage. Hence, the receipt of premium by an insured is an indication of interest to cover the peril insured against. In addition, insurance premium is equally relevant to the Nigerian economy as they contribute to the inflow of capital from the insurance sector (Haiss and Sumegi, 2008; Nwosa and Mustapha, 2018).

Different states and parts of Nigeria have recorded various degrees of fire losses emanating from natural and man-made disasters. In recent times, public buildings have become complex and bigger. These modern buildings have increased significantly in size and can accommodate more people, properties and goods compared to the buildings of old. The great problem associated with fires in public buildings is the possibility of fire gases spread to corridors, stairwells and other open spaces (Adekunle, Umanah, Ibe, and Imonikosaye, 2018). This makes evacuation more difficult and allows the fire to spread to other parts of the building. The material and financial effects of fire disasters, as well as the nature and magnitude of burn injuries have increasingly changed over many centuries, particularly in the 21st century. Of course, this can be traced to the industrial, technological, and military development, as well as the increasing number of armed conflicts the world over (Cavallini, Papagni, and Baruffaldi, 2018).

Claims Management

Insurance as a concept was established on the premises that it would restore an individual who has suffered a loss back to his/her position just before the loss (Igbinovia and Kekere, 2022). The rudimentary principle and idea underlying the whole essence of insurance contract is the payment of claims made by a policyholder when the loss covered under the policy occurs (Dorfman, 2015). Hence, a policyholder is attracted by the promise made by an insurer to indemnify him/her when a loss insured under the policy occurs provider the former is up to date with premium payments. When a loss occurs, the policyholder approaches the insurer for compensation (claims). The implication of this process is that the policyholder tries to enforce his/her rights under the contract. This also seeks to ensure that the insurer fulfils his obligations under the contract (Olusegun, 2018). The rights and obligations of both parties would essentially hinge on the terms of the contract and the rules under the general law (Ojukwu-Ogba, 2016).

Thus, claims management is a prerequisite for an insurer. It is one of the basic activities of an insurance company. Butler and Francis, 2015) noted that claims management is an avenue for an insurance company to demonstrate that years spent paying premiums were worth the expense. The underlying relationship between a policyholder and an insurer strengthened by prompt claims payment. Hence, proper and efficient claims management would serve as a good marketing strategy for the insurance companies efficient claims management provides a competitive advantage for an insurance firm ahead of its competitors. Proper claims management significantly affect every area of the institution, thus, there is a need for a competent claims administration practices and ethics (Noah, 2018).

Claims management involves every form of administrative procedures and controls relating to the indemnification of an insured who has suffered a loss in accordance with the provisions of an insurance contract (Rejda and McNamara, 2014). Prompt claim payment is relevant as a fulfillment of promise made to an insured, and as a promoter of goodwill.

Ethical Issues in Claims Management

The insurance industry is currently reforming how insurance business is conducted in Nigeria in other to repair insurance image and boost public interest in insurance business in Nigeria. Therefore, the seemingly established operation patterns of insurance companies will have to be questioned and some critical thinking brought to bear in other to ensure that insurance practices in Nigeria is at par with what is obtainable in developed country. To achieve this, attention must be drawn to the ethical issues fundamentally affecting insurance practices the world over. Duncan, (2024) identified the issues of fundamental importance which affect insurance business, especially during claims payment to include the following:

Conflict of Interest: conflict of interest may arise when an insurer wants to run a profitable business and he is careful not to spend so much paying claims, but the insured on the other hand, wants to get full and fair settlement of their claims. In between these interests is the policy wording, which its details are better understood by one of the parties in the contract. Conflict can result to an atmosphere of unwanted tension, where the insured is seen as using his knowledge and power to reduce the amount claimed by the claimant in order to increase profits, whereas the claimant on the other side may be viewed as constantly seeking to benefit from his own loss through overstatement or deception. It is almost impossible to completely avoid conflict during claims payment. The ethical issue to address however, is not how to stop conflicts from arising but how to deal with them when they eventually surface. Duncan, (2024) also noted that the ability to recognise and respond to conflicts of interest properly has been a serious issue in the insurance sector. The implications of conflict of interests ranges from fines for systemic failures, to a general erosion of trust with the insuring public. Just to mention, it is important not to view conflicts of interest as accusations –it is just situation that need to be treated appropriately.

Information Asymmetry: information asymmetry or knowledge gap arises when two parties are in a contract, but one party knows more about the contract than the other. Duncan, (2024) also stated that policyholders occasionally accuse insurers of taking advantage of lack of proper awareness about insurance business and in some cases, the policyholders do have a point. However, most time, they just feel exploited, rather actually being exploited. Their feelings of being exploited are therefore, the indications of the imbalance of knowledge existing between the parties in insurance contract. Therefore, the ability to positively and proactively handle the information asymmetry in insurance business will help insurers earn public trust in insurance business. Regarding the claims as often being a complex mix of money, emotions and uncertainties, insurance agents, stakeholders and claims departments of insurance companies should take pragmatic steps to balance the information gap existing in the insurance market.

2.4. Theoretical Review

This study is based on the Utilitarian Theory of Ethics (UTE) which was propounded by Bentham, (1789). This theory attempts to provide an answer to the question “what should one do?” the answer to which is that one must behave in a way that increase happiness in other people and reduce their pains and agony. Utilitarian ethics and modern business practices are frequently conflicting, with businesses prioritizing self-interest against the collective well-being advocated by utilitarian scholars (Mohammad and Mohammad, 2024). For this reason, there is a need to seek thorough examination of this conflict by applying utilitarianism theory to shed more light on the conflict existing between ethical issues and business models, and at the same time, suggest lessening adverse consequences.

The theory is relevant to this study because it focuses on the core tenets of utilitarianism, including the greatest happiness principle, consequentialism, and long-term thinking, investigating their application within the insurance practice, and based on analysis of how utilitarian principles align with conflict of interest and information asymmetry, and the point of disagreement. The aim is to explain the severity of the problem arising from this disagreement. A few theories were the backbone of this study, supported by data obtained from other sources, such as academic literatures, books, articles, and online resources, and via the incorporation of utilitarian ethics into business practices, more especially, fire insurance business, it claims that businesses can maintain long-term competitiveness by prioritizing the interest of the majority (policyholders) over temporary gains for a select few (the insurers).

2.4. Empirical Framework

A few researchers have carried out studies on the issues relating to claims management and their impacts on insurance business in Nigeria. Sunder, Hai and Lynne, (2024) examined the challenges facing fire insurance claims management in the construction industry. The study made use of primary data and discovered that there are five major challenge confronting proper claims management, including stakeholders' interests; inadequate resources assigned for claims management; absence of established procedure for claims management; lack of or poor documentation, improper management of information, as well as absence of general and expert contractual knowledge.

Fadun, Isimoya and Ugwuoke, (2024) employed a survey research design to examine the socio-economic determinants of life assurance purchase in Nigeria. The study which involved a convenient sampling technique was centered on all the civil servants in Enugu state. However, the study revealed that apart from education, price (premium), and level of income, the insufficient or misinformation about insurance and its practice are among the banes to insurance purchase in Nigeria.

Fadekemi, (2024) also examined the relationship between claims management and the performance insurance in Nigerian manufacturing sector using a multiple linear regression, correlation analysis, and descriptive statistics. The study involved a sample of eighteen manufacturing companies in Nigeria and revealed that conflict of interest among parties to insurance contract- a situation where both parties (insurer and manufacturer) put their interest ahead of the stated rules and patterns of the insurance contract is among the factors causing disagreement during claims payment.

In the same way, Adhikari, (2021) studied the impact of claim settlement on customer satisfaction, concentrating on clearness of claims payment advice, claims procedures, and actual payment. Likewise, Ntwali et al., (2020); Olarinre et al., (2020); Ajemunigbohun, Isimoya and Ipigansi, 2019; Ajemunigbohun, Sogunro and Oluwaleye, 2022; Agarwal, 2023; Settipalli, and Gangadharan, 2023; Kajwang, 2022) have all examined the impact of conflict or fraud on claims management in Nigeria. The studies have found that conflicting interest among the parties to insurance contract, knowledge gap and improper orientation are among the factor issues causing dispute during claims payment.

Pattnaik, Misra, and Ghadai, (2019) employed a primary data to study the impact of prompt benefit payment in health insurance. The study discovered that a client-centric benefit settlement system relieves the client of anxiety and guarantees that the aim of life insurance companies to pay medical expenses in case of hospitalization or pay benefits in the event of death is not defeated. However, the inability to promptly honor the promise to pay can lead to high out of pocket expenses and financial hardship: this may eventually result in low customer satisfaction, decline in insurance demand and slow economic growth.

There has not been any published study examining the impacts of conflict of interest and information asymmetry (knowledge gap) as ethical issues affecting fire insurance claims management in Nigeria. This is the gap covered by this study. Therefore, this study is a pragmatic shift from the previous studies, as it suggests policy changes, programs and strategies to enhance transparency and trust in fire insurance business.

3.0 Research Methodology

The study made use of survey research design. This was deemed suitable for the study for the fact that it aids a better understanding of a concept, people, and helps to expand thought or view about a specific idea or an issue being studied (Ugwuoke and Fadun, 2024). The survey research design makes use of quantitative data to convey appropriate and reliable information. It is often applied in a quantitative study that involves several survey questions with the aim to gather accurate data from several respondents. Population of the study comprises of the residents of Enugu state, located in the southeastern Nigeria with a population of 4,690,100 (Ugwuoke, Fadun and Aduloju, 2024). The targeted population was individuals aged 20 to 50, with a education level ranging from SSCE to Ph.D. The reason was to ensure that the participants are of age and educated enough to furnish the researchers with unbiased information. The selection of this population aligns with the study's goal to examine the impacts of conflict of interest and information asymmetry on fire insurance business in Nigeria

The sample size for this study was determined to be sixty-two (62) participants, drawn from employees of top seven insurance companies in Enugu state including Anchor, Leadway, Linkage, Staco, Unic, Unity Kapital, and Niger Insurance Plc . This sample size was deemed sufficient to ensure statistical reliability, given the study's objectives. Twenty-five questionnaires were distributed across the seven insurance companies by the researcher and two trained assistants. The direct delivery and retrieval of research instrument method was employed to ensure speedy and high return rate of the instrument. The questionnaires were structured in a three Likert Scaling format of 'Agree', 'Disagree, and "Undecided". A pilot study was conducted on twenty civil servants in Enugu State to ensure that the instrument was reliable. Hence, the Cronbach Alpha Reliability Test was used test the reliability of the instrument. 75% reliability index obtained from the pilot study indicated that the research instrument was suitable for the study. Descriptive statistics were used to describe data characteristics in tables, while Simple Linear Regression was used to test the hypotheses at a 0.05 significance level.

Formulation of Hypothesis

HO1: Conflict of interest during claims has no significant impact on fire insurance business in Nigeria.
HO2: Information asymmetry (knowledge gap) in insurance practice has no significant impact on fire insurance business in Nigeria.

3.1 Model Formulation and Specification

The Model is on ethical issues and fire insurance claims payment in Nigeria. Specifically, the emphasis is on the effect of conflict of interest, knowledge gap (information asymmetry), as they affect fire insurance claims payment. The data which were collected for the study were coded and analysed with the help of the Statistical Package for the Social Sciences (SPSS). To ascertain the effects of the explanatory variables on the dependent variables, the model was specified and the functions capturing them were stated follows:

$y = \beta_0 + \beta_1 x + \varepsilon$

Where;
y= the dependent variable
beta_ 0 = y-intercept
beta_ 1 = slope of the regression line
x = independent variable
ε = error margin

Model 1

FIB = β0 + β1CI + εi

Where;
FIB= Fire Insurance Business
WC= Conflict of Interest

Model 2

FIB= fβ0 + β1IA + εi

Where;
FIB= Fire Insurance Business
IA= Information Asymmetry

4.0. Data Analysis and Interpretation

The data was analysed and presented in agreement with the specific objectives of the study. A total of sixty-two persons took part in the study. The results were therefore, presented as shown below:

Table 4.1: Descriptive Statistics indicating the frequences and percentages of the respondents' demographic characteristics.

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Male	39	62.9	62.9	62.9
Female	23	37.1	37.1	100.0
Total	62	100.0	100.0	

Age Bracket	**Frequency**	**Percentage**	**Valid Percentage**	**Cumulative Percent**
20 to 29	22	35.5	35.5	35.5
30 to 39	19	30.6	30.6	66.1
40 to 49	10	16.1	16.1	82.3
50 and above	11	17.7	17.7	100
Total	62	100	100	
Level of Education	**Frequency**	**Percentage**	**Valid Percentage**	**Cumulative Percent**
SSCE	14	22.6	22.6	22.6
HND/bachelor's degree	23	37.1	37.1	59.7
M.Sc. or Ph.D.	14	22.6	22.6	82.3
Others	11	17.7	17.7	100
Total	62	100	100	

Source: researcher's computation using SPSS Statistics, 2024

Table 4.1 shows the frequences and percentages of the respondents' demographic characteristics. A total of 62 persons took part in the study. Out of this number, table 4.1 indicates that 39 (62.9%) of them are male while 23 (37.1%) are female. This implies that there were more male residents of Enugu state who took part in the study than females. The table also shows that the respondents who were between the ages of 20 to 29 are 22 (35.5%), those between the ages of 30 to 39 are 19 (30.6%), the respondents between the ages of 40 to 49 are 10 (16.1%), while those at 50years and above are 11 (17.7%). This reveals that majority of the respondents were between the ages of 20 to 39, suggesting that there were more youths who took part in the study. Lastly, the table shows that the respondents with SSCE are 14 (22.6%), those with HND or B.Sc. are 23 (37.1%), those having M.Sc. or Ph.D. are 14 (22.6%), while the respondents with other certificates which were not mentioned are 11 (17.7%). This implies that there were more graduates who took part in the study and were better positioned to furnish the researchers with adequate and unbiased information regarding the subject matter.

4.2 Test of Hypotheses

The Hypotheses were tested as follows with the aid of simple linear regression:

Ho1: Conflict of interest during claims has no significant impact on fire insurance business in Nigeria.

Table 4.2: Result of regression analysis showing the significant impact of conflict of interest during claims on fire insurance business in Nigeria.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.989[a]	.977	.977	.15803

Explanatory Variable	Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t-value	p-value.
Constant	.150	.052		-2.895	.0.05
conflict of interest	1.049	.021	.989	50.998	.000

Source: Researchers' Computation using SPSS Statistics 2024

Table 4.2 shows that conflict of interest ($\beta = 1.049$, $t = 50.998$, $p < 0.01$) has a significant impact on fire insurance business in Nigeria. Therefore, the null hypothesis which stated that conflict of interest during claims has no significant impact on fire insurance business in Nigeria was rejected. This significant impact indicates that any form of conflict between the parties to insurance contract regarding indemnification or the amount claimed by the claimant may negatively impact on fire insurance business. This is further revealed by the analysis that conflict of interest has a 98% decisive influence on fire insurance business in Nigeria.

Ho2: Information asymmetry (Knowledge gap) in insurance practice has no significant impact on fire insurance business in Nigeria.

Table 4.3: Result of regression analysis showing the significant impact of breach of fundamental terms/fraud on fire disaster claims payment.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.959[a]	.920	.918	.29855

Explanatory Variable	Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t-value	p-value.
Constant	.010	.096		.104	.917
Information asymmetry	1.149	.044	.959	26.183	.000

Source: Researchers' Computation using SPSS Statistics 2024

Table 4.3 shows that information asymmetry (knowledge gap) ($\beta = 1.149$, $t = 26.183$, $p < 0.01$) significantly impact fire insurance business in Nigeria. Consequently, the null hypothesis stating that information asymmetry (Knowledge gap) in insurance practice has no significant impact on fire insurance business in Nigeria was rejected. This shows that the fundamental terms of a fire insurance contract and other essential terms must be disclosed to an insurance buyer. The need to uphold honesty and integrity throughout the period of the contract are essential to ensure that the parties (insurer and insured) have good business relationship. In this regard, the data analysis indicated that information asymmetry has a 92% effect on fire insurance business in Nigeria.

4.5. Discussion of Findings

The results showed that conflict of interest between the parties to insurance contract has a 1.049 significantly influences on fire insurance business in Nigeria (Table 4.2). This is in agreement with the studies of Ntwali et al. (2020); Olarinre et al, (2020); Ajemunigbohun, Isimoya and Ipigansi, 2019; Ajemunigbohun, Sogunro and Oluwaleye, 2022; Agarwal, 2023; Settipalli, and Gangadharan, 2023; Kajwang, 2022) as well as Sunder, Hai and Lynne, (2024) who noted that stakeholders' interest is among the five major challenges often encountered in fire insurance claims within the construction sector. This interest may be associated with the investors or insurers' desire to gain or remain profitable to satisfy their own interest or be competitive in fire insurance business at all cost Fadekemi, (2024). Why stakeholders and insurers are in fire insurance to make gain, the people buy fire insurance covers to recover financially from any loss resulting from fire.

Conflict of interest may lead to erosion of trust on the insurer and the entire insurance system. If not properly handled, conflict of interest between parties to insurance contract can also cause financial stress for the insured, or legal and regulatory challenges, ultimately, having negative impact on insurance patronage. Therefore, this study supports previous literatures that insurers or individual investors' financial or other business interests significantly impact insurance business Nigeria.

The results also indicated that information asymmetry has a 1.149 significant influence on fire insurance business in Nigeria. Again, this is in consonant with Agarwal, 2023; Settipalli, and Gangadharan, 2023; Kajwang, 2022) who noted that the insureds' lack of proper knowledge about how insurance works is among the leading causes of dispute during claims. According to section 70 of the Insurance Act (2003), insurers are mandated to settle claims within 90 days from the time a loss was first reported. However, section 55(2) of the same act gives an insurer the liberty to repudiate claims if they were made from false or fraud. Hence, the inadequate awareness of insurance practice and processes according to Fadun, Isimoya and Ugwuoke, (2024) are among the factors affecting insurance business in Nigeria. For instance, a claimant whose claims were denied due to his own inability to abide by the details of his/her insurance contract will brand insurance as a 'fraud'.

Lack of adequate information about the insurance system may create various implications which may affect insurance patronage in Nigeria. while information asymmetry is often inherent in the insurance dynamics, transparency, fairness, and open communication can mitigate their impacts. Accordingly, this study affirms that information asymmetry significantly impacts on fire insurance business in Nigeria.

5.0 Conclusion

The purpose of this study was to investigate the ethical issues in claims management of fire insurance in Nigeria. Hence, the objectives were to examine the impacts of conflict of interest during claims, and information asymmetry (knowledge gap) on fire insurance business in Nigeria. The study involved a survey research design, while structured questionnaires were used to collect data from 62 selected individuals in the three local government that makes up Enugu capital city, namely Enugu East, Enugu Noth and Enugu South. The Statistical Package for the Social Science (SPSS) was used to test the study hypothesis at 0.05 significant level, in linear regression. The statistical analysis showed that conflict of interest between the parties to insurance during claims is a factor which significantly affect fire insurance business in Nigeria. Given the significant impact of 1.049 as determined by the statistical analysis, this study concludes that conflict of interest during claims is a serious ethical issue with the capability of negatively influencing insurance business in Nigeria.

In the same manner, the statistical analysis also indicated that information asymmetry (knowledge gap) has 1.149 significant impact on the fire insurance business in Nigeria. Therefore, this study concludes that conflict of interest and information asymmetry are ethical issues which significantly impact on fire insurance business in Nigeria.

5.1 Recommendations

Resolving conflict of interest and closing the information gap between insurer and the insured ia crucial for maintain good business relationship in the insurance market. On this note, this study recommends that insurer and insured must promote transparency throughout the period of the insurance contract. Insurers should establish straightforward claims processes that are well-documented and accessible. Implement consumer feedback mechanisms that allow insureds to voice concerns about the contracts. To properly manage information asymmetry, this study also recommends that the insurance industry should embrace technology (Insurtech) in insurance business for access to information, tracking of disclosures, other changes during the contract, and compliance by the insured. Insurers should also customise communications based on individual policyholder's needs and concerns, ensuring that the information provided is relevant and useful. Parties should increase their sources of information to obtain unbiased, timely and accurate insight on the contract nature, terms and conditions.

5.2 Contribution to Knowledge

This study has successfully unraveled the ethical issues in insurance contract and how they affect claims payment in fire insurance business. As such, the study has contributed to knowledge in this area. Therefore, the study will be a reference material to other researcher in studies relating to ethical issues in fire insurance business as it relates to claims management in Nigeria.

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E-commerce Models and Supply Chain Management Optimization of Firms in Kwara State

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Abstract

The widespread adoption of the internet and information technology globally has played a significant role in catalyzing the rise and evolution of e-commerce. In Kwara State, Nigeria, while e-commerce adoption has lagged behind more developed nations, efforts have been made to bridge this gap. This study examines the impact of e-commerce models (Business-to-Business (B2B), Business-to-Consumer (B2C), and Online-to-Offline (O2O)) on optimizing supply chain management of Small and Medium Enterprises (SMEs) in Kwara State. Employing a descriptive research design and utilizing a self-administered questionnaire with a sample of 400 SMEs, the study found significant positive impacts from B2B, B2C, and O2O models. Specifically, B2B models showed a coefficient of 0.420 ($t = 21.871$, $p < 0.001$), B2C models exhibited a coefficient of 1.080 ($t = 66.494$, $p < 0.001$), and O2O models demonstrated a coefficient of 0.097 ($t = 3.210$, $p < 0.001$). The overall model demonstrated a strong fit, with an R-squared of 0.997 and an F-statistic of 46171.032 ($p < 0.001$). Based on the study's findings, the study recommend that SMEs should be provided with access to digital marketing training and tools, including workshops on social media marketing, SEO, and CRM systems, to improve B2C effectiveness.

Keywords: *E-commerce models, Supply chain management, SMEs*

1.0 Introduction

The global adoption of the internet and information technology has significantly revolutionized supply chain management through e-commerce. E-commerce enables the transparent, rapid, and accurate transmission of information and funds within supply chain networks, enhancing the management of information and capital flow (Min, 2021). This transformation redefines traditional procurement, production, sales, and service processes, creating complex supply networks that include manufacturers, suppliers, distributors, logistics providers, and financial institutions (Trong and Kim, 2020)

E-commerce models—Business-to-Business (B2B), Business-to-Consumer (B2C), and Online-to-Offline (O2O)—integrate businesses with supply chains to increase efficiency. The B2B model facilitates inter-business transactions, dominating markets like China (Iankova Davies & Archer, 2019). The B2C model connects businesses directly with consumers, often with intermediaries (Iankova *et al.*, 2019), while the O2O model merges online and offline services to optimize customer experiences (Yang and Wang, 2016).

Effective supply chain management requires seamless information, capital, and logistics management. Retailers adopting e-commerce often leverage drop-shipping to eliminate supply chain overhead, ensuring speed and reliability. However, optimizing supply chains demands intelligent logistics networks and real-time data for decision-making (Min, 2021).

Despite global advancements, Nigeria faces challenges in adopting e-commerce-based supply chain practices. These include inadequate IT investment, poor communication, ineffective training, and limited stakeholder engagement. Issues such as poor logistics arrangements and insufficient quality control further impede efficiency.

This study addresses the lack of empirical evidence on the impact of e-commerce models in Nigeria by exploring how B2B, B2C, and O2O models optimize supply chain management, overcoming local challenges and enabling effective project delivery.

1.1 Research Hypotheses

In line with the specific objectives stated earlier, the following research hypotheses were stated in null form in order to answer the research questions and tested empirically to achieve the research objectives of the study:

i. Ho_1: There is no significant effect between Business to business (B2B) and optimizing supply chain management of firms in Kwara State.

ii. Ho_2: Business to consumer (B2C) does not have significant impact on optimizing supply chain management of firms in Kwara State.

Ho_3: There is no significant influence between Online to Offline (O2O) and supply chain management of firms in Kwara State.

2.0 Literature Review

E-commerce is the practice of conducting market transactions between two or more parties using information and communication technologies, frequently between consumers and enterprises. E-commerce model is the use of Internet technology to network scheduling product resources. For this reason, in addition to relying on information technology to realize the construction of e-commerce platform, it also needs the support of a suitable supply chain network system to adapt to the background of "Internet +" under the development needs of e-commerce platforms (Min, 2021)

E-commerce is any form of business relationship where the interaction between actors occurs through the use of internet technology (Lummus, *et al* 2013) The benefits of electronic commerce are: facilitating 24/7 shopping, convenience, time saving, no geographical limitation, in- creased efficiency, precise target marketing, and ease of initiating and administrating a company (Taher, 2021).

The B2B model mentioned in e-commerce supply chain management is the communication and cooperation between enterprises, that is, the Internet serves as a platform on which enterprises exchange products, information and services. Usually, there are two ports of supply chain and demand chain in the B2B model. Suppliers belong to the upstream, and the downstream is the customer. Therefore, the two are from different perspectives, and there are differences in the content and operation mode For those enterprises who are in the mode of the intermediate links, the size and strength of the supply chain gap is the decisive factor, between the two parties to develop B2B strategy model strategy at the same time due to the economic environment changes and the influence of market demand, the market environment has dominated by-products from into markets dominated by consumers (Li, 2012).

Compared with the previous, purchasing for inventory is changed to purchasing for order, internal purchasing management is changed to external resource management, and the general buying and selling relationship is changed to strategic cooperative partnership (Liao, *et al*. 2018). These changes are in line with the integrity principle, high-efficiency principle and information principle (Lummus *et al.*, 2013). First, such a transformation makes all the participating enterprises in the whole supply chain unify and coordinate with each other, thus effectively simplifying the smooth capital flow, information flow and logistics, promoting the joint efforts of all enterprises and improving the overall competitive advantage Secondly, the big data analysis of the Internet trading platform can make logistics more efficient and save costs at the same time. In addition, enterprises can share and obtain information through the Internet trading platform, which makes the communication between enterprises more convenient and faster without barriers Therefore, by following the three principles to improve the market response speed and sensitivity of the whole supply chain, with the lowest cost to obtain the maximum economic benefits

The B2C supply chain model is the business chain from enterprises to consumers. Driven by Internet technology, this kind of supply chain also has the mode of inserting distributor links in the middle and finally reaching the consumer port, namely B2B2C (Iankova, *et al*, 2019)

Service to consumers is the starting point of supply chain management, through the establishment of a lean management system, to improve customer service quality and customer satisfaction. The core of lean management lies in consumer experience and fast response (Yao, 2015). On the one hand, facing the current market environment dominated by consumers, consumer satisfaction and consumer experience are the key, which is not only reflected in product price, delivery time and service attitude but more importantly, whether the products and services provided to consumers can truly meet consumer needs. On the other hand, the fierce competition environment requires the whole supply chain to have the ability to respond quickly, to flexibly allocate resources (Yao, 2015)

O2O is a kind of online and offline connection e-commerce model that emerged in the development of the Internet, and the O2O supply chain management model is a new cooperative supply chain system under the O2O e-commerce model. The essence of this supply chain management mode lies in "joint service". Enterprises under the cooperative system aim at efficiency and cost reduction and effectively integrate the service supply chain to provide comprehensive online and offline services to customers (Yang, & Wang 2016). In other words, in the whole process of consumers' consumption, online platforms are equipped with information integration functions such as consumption guide, product information, payment method and sharing platform, while offline stores are dedicated to providing services for consumers. In addition, compared with B2C, the O2O supply chain management model is more suitable for traditional industries, such as furniture, real estate, cars and other commodities without certain standards and with high prices, or fresh products. The consumption demand of such customers requires extreme consumption experience (Govindan and Malomfalean, 2019).

2.1 Supply Chain Management

Supply chain management was proposed by Michael E. Porter in 1985. Supply chain management is an effective combination of suppliers, manufacturers, sellers, and logistics to produce goods. It aims to meet the service level while at the same time. A set of management methods that minimizes the cost of the supply chain, getting the right amount of product to the right place at the right time, and minimizing the total cost of production and distribution)e characteristics of supply chain management can be summarized in three aspects (Trong & Kim, 2020)

First, optimize the logistics chain within the enterprise and extend it to external partners. then, obtain the flexibility of product supply and service provision when demand fluctuates. Finally, improve the transparency of the value chain stage. When a company adopts supply chain management, it ultimately wants to achieve the following three goals: first, improving the maximum satisfaction of customers by improving the flexibility and reliability of delivery; second, using supply chain management to reduce inventory and reduce production and distribution costs to achieve the goal of reducing company costs; third, eliminating error costs and abnormal events, which optimizes the overall process quality of the enterprise

Flöthmann et al (2018) defined SCM as “all the series of processes that involves planning and managing procurement sources, materials conversion, and all logistics management actions, including alliance with suppliers, middlemen, third-party service providers, and customers”. SCM is the design, planning, execution, control, and monitoring of supply chain activities with the goal of creating net value, constructing a competitive infrastructure, utilizing worldwide logistics, coordinating supply with demand, and assessing global performance

SCM practices are an organization's initiatives to promote supply chain management (Li, *et al*, 2016). Best supply chain procedures affect the full chain, its parts, or critical processes (Cuthbertson and Piotrowicz, 2018)

Latest evolution of SCM practices includes supplier partnership, outsourcing, continuous process flow, information technology sharing and purchasing, quality, and customer relations. SCM practises focus on core competencies, use inter-organizational systems such as electronic data interchange (EDI), and elimination of excess inventory by postponing customization to the end of the supply chain (Zhao and Lee, 2019)

2.2 Theoretical Review

Resource-Based View (RBV) theory

This study conceptually explores the intricate relationship between e-commerce models—specifically B2B, B2C, and O2O—and the optimization of supply chain management and performance. Theoretically, the research is primarily grounded in the Resource-Based View (RBV) theory. This theory underscores the critical importance of examining a company's internal environment to identify sources of competitive advantage. It posits that a firm's ability to achieve superior organizational performance and effectively compete hinges on possessing resources and capabilities that surpass those of its rivals.

However, RBV is not the sole theoretical lens through which this study is viewed. Complementary theories, such as Transaction Cost Economics (TCE), Network Theory, and the Diffusion of Innovation Theory, also offer valuable insights. TCE helps explain the rationale behind firms' choices of e-commerce models and supply chain relationships by focusing on minimizing transaction costs. Network Theory elucidates the significance of network relationships and collaborations, particularly relevant for B2B and O2O models. The Diffusion of Innovation Theory sheds light on the adoption rates of e-commerce models by SMEs in Kwara State.

Despite its strengths, the RBV theory is not without limitations. Critics point to its static nature, the difficulty in accurately measuring VRIO (valuable, rare, inimitable, and organized) resources, and its potential neglect of external factors. The theory assumes resource heterogeneity and immobility, and it emphasizes that resources must be VRIO to confer a sustainable competitive advantage.

RBV provides a framework for understanding how SMEs in Kwara State can leverage their internal resources to effectively implement e-commerce models and optimize their supply chain management. It highlights the importance of identifying and developing unique resources and capabilities that can provide a competitive edge in the e-commerce landscape. By applying RBV, the study aims to determine which internal resources within SMEs are facilitating or hindering the adoption and optimization of these e-commerce models, ultimately contributing to a sustainable competitive advantage.

2.3 Empirical Review

Iguang, *et al* (2023) investigated the impacts of e-commerce supply chain finance (SCF) on small and medium enterprises' (SMEs) financing performance in China. Using the 423 observations panel dataset of Chinese technology-based SMEs for the period from 2011 to 2020, the descriptive, correlation statistics and regression analysis are conducted. The findings indicate that e-commerce SCF platforms facilitate SME financing by increasing the coverage breadth and usage depth. Particularly, The study found that comparing to e-commerce SCF usage depth; the coverage breadth has more positive impacts on SMEs' financing performance. In addition, this research also reveals the positive moderating effects of green innovation on this relation

Sakas, *et al* (2023) investigated leading logistics firms' re-engineering through the optimization of the customer's social media and website activity in Malaysia; Collecting behavioral big data from the logistics companies' social media and websites was the first step. Next, regression and correlation analyses were conducted, together with the creation of a fuzzy cognitive map simulation in order to produce optimization scenarios. The results revealed that re-engineering marketing strategies and customer behavioral big

data can successfully affect important digital marketing performance metrics. Additionally, social media big data can affect change management and re-engineering processes by reducing operational costs and investing more in social media visibility and less in social media interactivity

Min (2021) examined Optimization of E-Commerce Supply Chain Management Process in Japan. Based on Internet of Things Technology) rough the application of the Internet of wings technology, small- and medium-sized enterprises can optimize the workflow and circulation links of the e-commerce supply chain management, enhance the matching level of product value and information transmission, improve the supply chain operation mechanism, and increase economic benefits.

From the empirical literature reviewed, it was observed that few studies have been done on the impact of E-commerce models on optimizing supply chain management of firms of countries in developed and developing countries (Iguang *et al*, 2023; Sakas, *et al* 202; Lee, 2021; Kilay, *et al,* 2022; Josephine and Samuel, 2019). Given this gaps identified in from the extant studies, this study differs in some way from existing ones by examining B2B models, B2C models, O2O models, Also this study focuses specifically focused on small scale business in Kwara State.

3.0 Methodology

The study utilized a descriptive research design. Descriptive research design purposes to establish a relationship between the variables. This design was suitable for the study since it is flexible in establishing the relationship existing between the study variables. The population of this study consists of all SME's in Kwara State. According to National Bureau of Statistics (2020) the total number of SME's categorized by small scale enterprise in Kwara state is 717,909. The sample size for the study was determined using the Yamane (1967) formula for sample determination. Based on the result, the sample size used for this study is 400 which was distributed to SME's staff in small and medium scale enterprise

The study employed the use of primary data through self-administered questionnaire to receive elicit response from the targeted respondents.

The study utilized primary data to achieve research objectives. Data was collected via well-structured questionnaires to be issued to owners of SMEs. The data that was collected was sorted and coded using the Social Sciences Statistical System (SPSS). Upon the completion of cleaning and sorting of data that comprised of sorting of errors which had occurred amid the process of data entry every quantitative factor as well as the table layouts, descriptive statistics like standard deviation, percentages, mean scores, frequencies were approximated. The inferential statistics that will be used include the multiple linear regressions. This was done to describe the relationships between the independent variables of the study with the dependent variable of the study.

4.0 Data Presentation and Analysis of Results

Table 1: Demographic Features of Respondents

Characteristics	Category	Frequency	Percent
Legal Status	Enterprise	15	75
	Limited	5	25
	Total	20	100.00
Number of employees	1 – 5	5	25
	6 – 10	10	50
	>10	5	25
	Total	20	100.00
Date of Commencement	Before 2000	2	10
	2000 – 2005	1	5
	2006 – 2010	5	25
	2011 – 2015	6	30
	2016 – 2020	3	15
	2021 till date	3	15
	Total	20	100

Source: Researcher's Output (2024) Using SPSS

There are three demographics in the data analysis in Table 1 namely: number of employees, legal status, and date of commencement of the business. With regards to legal status, majority 75% of the small businesses are enterprise and 25% are limited businesses. With regards number of employees in the business, a total of 25% has between 1 – 5 employees, 50 % has 6 – 10 number of employees in the small business and 25% businesses have number of employees >10. With regards to date of commencement of the business, 15% of the small businesses commenced in 2021 till date. Followed by 30% that commenced between 2011 – 2015. 15% of the small businesses commenced operations between year 2016- 2020. 13% small business commenced operations between 2006-2010 whereas 5% small businesses commenced operations between 2000 to 2005 and 10% begin before year 2000.

4.1 Presentation of Estimated Models

A regression analysis was conducted to analysis the impact of E-commerce models on SME development in Kwara State.

Table 2: Impact of E-commerce models on SME Development

Variables	Coefficients	S.E.	T	Sig.
B2B	0.420	0.019	21.871	0.000
B2C	1.080	0.018	66.494	0.000
O20	0.097	0.030	3.210	0.001
Constant	-2.534	0.096	-26.502	0.000
Model Diagnostic				
F-stat:	46171.032			
F-prob	0.000			
R-square:	0.997			

Dependent Variable: Supply Chain Management Efficiency (Delivery time and service quality)

Source: Researcher's Output (2024) Using SPSS

Table 2 show model summary. It shows the coefficient of determination (R^2) is 0.997 which implies that Business to business (B2B), Business to consumer (B2C) and Online to offline (O2O)explains about 99.7% of the variability in Supply chain management efficiency in Kwara state while the remaining % is explain by other variables not captured in the model. In addition, the F-value was 46171.032 with p-value of .000 which show that the independent variables were jointly significant. On the other hand, it implies that there is a statistically significant relationship between E-commerce models and Supply chain management efficiency in Kwara state with significant value of 0.000 which is less than 0.005 or 5% significant level.

The above result reveals that B2C has a coefficient of approximately 0.42 which implies that a one unit increase in Business to consumer (B2C) will increase the level of Supply chain management efficiency by about 0.42unit and its probability value of 0.000 is less than 1 percent significance level, hence the relation is statistically significant.

Similarly, O2O has a positive relationship with Supply chain management efficiency given its coefficient of 1.080 signifying that a one unit increase in Online to Offline (O2O) will the level of Supply chain management efficiency by approximately 1.08unit in Kwara state. Its probability value of 0.000 implies that its impact is statistically significantly at 1 percent level of significance; hence it has a significant impact on Supply chain management efficiency

Lastly, O2O coefficient value of about 0.097 implies that a one unit increase in Business to business (B2B) will increase the level of Supply chain management efficiency by about 0.097 and its probability value of 0.001 is less than 5 percent significance level, hence Business to business (B2B) has significant impact on Supply chain management efficiency in Kwara state.

4.2 Discussion and Economic Implication of the Results

The regression analysis results in Table 2 highlight the significant impact of E-commerce models on optimizing supply chain management (SCM) in Kwara State. The high R-squared value of 0.997 indicates that B2B, B2C, and O2O models collectively explain about 99.7% of the variability in SCM efficiency.

Among the models, B2C had the highest impact with a coefficient of 1.080 (p-value = 0.000), suggesting that increased B2C adoption significantly improves SCM efficiency. This aligns with Iguang et al. (2023), who emphasized how E-commerce SCF platforms enhance SMEs' operational performance by improving access and efficiency.

The O2O model also had a positive and significant impact (coefficient = 0.420, p-value = 0.000), supporting Sakas et al. (2023), who highlighted the role of digital platforms in enhancing marketing performance and operational efficiency.

The B2B model had a positive impact (coefficient = 0.097, p-value = 0.001), in line with Min (2021), who demonstrated that IoT-driven supply chain optimization enhances workflow and product value matching.

5.0 Conclusion and Recommendations

5.1 Conclusion

This study examined the impact of e-commerce models (B2B, B2C, and O2O) on the supply chain management of firms in Kwara State. The findings reveal a strong positive relationship between e-commerce adoption and supply chain optimization, as evidenced by the high R-squared value (0.997). Specifically, B2B, B2C, and O2O models significantly contribute to improved supply chain efficiency. B2C models, in particular, demonstrate a substantial positive impact, indicating that enhancing B2C strategies is crucial for SME growth.

5.2 Recommendations

Based on the study's findings, the following recommendations are made:

Establish and support e-commerce platforms that facilitate partnerships, bulk purchasing, and resource sharing among SMEs.

Provide SMEs with access to digital marketing training and tools, including workshops on social media marketing, SEO, and CRM systems, to improve B2C effectiveness.

Develop and implement integrated O2O e-commerce platforms that seamlessly connect online and offline sales channels, supporting features like online ordering with in-store pickup, real-time inventory tracking, and unified customer data management.

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Ownership Structure and Earnings Management in Listed Consumer Goods Companies in Nigeria

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Abstract

This study examined the effect of ownership structure on earnings management of listed consumer goods firms in Nigeria. In recent decades, businesses and investors have been looking into investment opportunities, partly as a result of increased international trade, international cooperation among nations, and the globalization of capital markets. *The objective of the study was to investigate whether foreign ownership (FOR), family ownership (FAM), institutional ownership (INS) and government ownership (GOV) have significant effect on earnings management (EAM) of listed consumer goods firms in Nigeria. The secondary source of data collection was adopted in the study where the purposive sampling technique was used to select a sample size of ten (10) listed firms for the study. Ordinary Least Square regression analysis was used in this study and the findings revealed that foreign ownership, family ownership, institutional ownership and government ownership has no significant effect on earnings management of listed consumer goods firms in Nigeria. It was concluded that the ownership structures of companies are rapidly changing to match global challenges and demands and a firm's ability to make acceptable returns in the competitive environment determine its ability to survive in the future as the world's economies are becoming more and more globally integrated.*

Keywords: Ownership Structure, Earnings Management, Foreign Ownership, Family Ownership, Institutional Ownership, Government Ownership.

1.0 Introduction

One of the requirements of corporation is the provision of timely annual report to help internal and external users make informed financial decisions. Corporate financial statements are essentially prepared to provide information about the financial performance, position, and changes in financial position of the corporations in a timely and reliable manner. Companies are required to submit financial reports, and some operate in a highly competitive business climate where success is predicated on meeting predetermined goals and maintaining financial stability (Siraj & Nazar, 2021). Anytime a company is unable to maintain profitability and financial stability, it may lead to total collapse and business failure. Profits are regarded as the primary information sources and have the power to influence users' financial decisions. This made it clear that owing to the possibilities of misinformation and poor reporting system, certain regulations were made to guarantee the transparency of financial information, improve the quality of financial reporting, and direct and regulate performance (Sandra, 2023).

Accounting earnings data is significant when it aids in the formation of future organizational forecasts and the confirmation or correction of previous judgments, thereby influencing users' decisions. A few factors affect the value of accounting earnings; the majority stem from the need for this data to be used in contracts and from management's incentives and opportunities to control reported earnings (Zgarni *et al.*, 2016).

By taking advantage of the current regulations and ignoring some or all of them, earnings management refers to the process of changing accounting figures from what they actually are to what preparers desire. The term earnings management refers to the practice of management manipulating reported earnings by increasing or decreasing revenue or expenses through precise accounting systems, among other strategies intended to affect short-term profits. The phrase is typically understood to refer to a systematic fabrication of the actual earnings and assets of the company. A manager's use of discretion in reporting to structure items as to adjust annual reports, to mislead some stakeholders about the entity's underlying economic performance, or to influence contractual outcomes that depend on reported income is known as earnings management (Isenmila & Elijah, 2021).

Organizations vary in their ownership structures for a variety of reasons, including variations in regulations, economies of scale, and the stability of the legal and environmental systems. Osemene *et al.* (2018) asserted that varying ownership structures will have distinct effects on earnings management. In Nigeria, ownership structures can be block, free float, institutional, private (family), managerial, or foreign.

The majority of previous research on ownership structure and earnings management was conducted in Asia, primarily in Malaysia and India. In contrast, only a small number of studies were conducted in Africa, primarily in Tunisia, Ghana, and Nigeria. The majority of studies conducted in Africa, and particularly in Nigeria, primarily focused on accrual-based earnings management and used observations spanning less than ten years (Hassan & Ahmed, 2023; Godwin *et al.*, 2020). Therefore, by evaluating the effect of ownership structure on earnings management among Nigerian consumer goods firms, this study addressed these research gaps.

2.0 Literature Review

2.1 Earnings Management

A deliberate intervention in accounting reports with the goal of pursuing different self-serving interests is known as earnings management (Olotu *et al.*, 2019). Earnings management is defined by Apollos *et al.* (2019) as accounting practices used by management with the intent to manipulate or falsify reported earnings through the use of accounting techniques, as well as accelerating or under-accruing expenses, delaying the recognition of revenue transactions (based on the target objective), or utilizing other strategies designed to influence earnings. According to Potharla (2021), earnings management refers to the creative ways in which corporations and other organizations characterize their income, assets, and liabilities, or to the systematic misrepresentation of those factors. The practice of deviating from a company's actual financial performance is known as earnings management. This is the result of managers compiling transactions into financial statements with the intention of influencing transactions that depend on reported accounting values or misleading stakeholders about the true financial performance of the companies (Diem *et al*., 2021).

According to Olotu *et al.* (2019), earnings management is the deliberate manipulation of accounting reports in order to further a variety of self-serving goals. Apollos *et al.* (2019) defined earnings management as accounting practices used by management with the intent to manipulate or falsify reported earnings. These practices may include the use of accounting techniques, the acceleration or under accruing of expenses, the untimely recognition or deferment of revenue transactions (based on the target objective), or other strategies designed to influence earnings.

2.1.1 Ownership Structure

Capital commitments, involving both external (debt and equity holders) and internal investors (directors or managers), are what constitute an ownership structure. Ownership structure was defined by Al-Said and Al-Shammari (2018) as the percentage of shares held by government (state ownership), foreign investors (foreign ownership), families (family ownership), managers (managerial ownership), and institutions (institutional ownership). Although Berglunf (2017) has added a more recent definition, it still states that the committee of investors and shareholders, or proprietors, is made up of individuals, organizations, and groups with varying objectives, passions, investment horizons, and capacities.

2.1.2 Foreign Ownership

Foreign ownership, whether or not it is a legal entity, is a source of investment capital that is moved into a foreign market under the management of a foreign person or organization. They profit from this investment and hold a specific percentage of the company's shares. According to Diem *et al.* (2021), foreign ownership is possible if foreign people or organizations invest capital. These actors' involvement has a significant impact on the recipient nations, particularly the developing nations. Because foreign ownership fosters development through the provision of capital, the transfer of managerial and technological knowledge, and competition that raises market efficiency. From there, they support improved corporate accountability, transparent information, and financial activity control. Foreign ownership includes company shares held by foreign governments, foreign individuals, and foreign legal entities (Mercilina & Gina, 2020).

2.1.3 Family Ownership

Family owners are members of the business's shareholder base and perform a variety of operational duties. According to Darmadi (2016), the ratio of the total number of outstanding shares to the sum of the shares owned by family members determines the degree of family ownership. A company is considered family-owned if its members are able to direct its strategic direction and have an ownership stake in it. Given that family members have invested the majority of their money and resources in the business, family businesses typically have strong incentives to oversee managerial behaviour. Family shareholders also benefit from monitoring since their long-term involvement in the company gives them access to pertinent market and firm-specific knowledge. Additionally, in these organizations, family matters come first, followed by a conflict of interest between minority and family ownership. Additionally, different countries have different principles that distinguish family businesses from non-family businesses, which has resulted in a variety of surveys with frequently contradictory results (Chung, 2019).

2.1.4 Institutional Ownership

Institutional ownership refers to the ownership of shares in a company by businesses and financial institutions. In line with Sandra (2023), the study only takes into account institutions when their ownership constitutes five percent or more of the capital of the company's shares. Sandra (2023) states that institutional ownership is calculated by dividing the total number of shares held by the institution by the total number of shares that are outstanding.

The institution that trades securities on a large scale is known as institutional ownership. Banks, insurance companies, investment firms, and pension funds are a few examples of institutional investors. Institutional ownership is also a necessary and effective exogenous control mechanism. This group of investors has the power to influence the policies that businesses adopt, and their very presence may cause those policies to alter.

2.1.5 Government Ownership

When the government owns shares in a company, this is known as government ownership. According to Attia (2019), the government's shareholding is calculated by dividing its total shareholding by the total number of outstanding shares. The ownership of an industry, asset, or enterprise by the state or a public body representing a community, as opposed to an individual or private party, is known as state ownership, also known as public ownership or government ownership. Public ownership is distinct from government services and public goods that are paid for out of a government's general budget. It specifically refers to industries that sell goods and services to consumers. Public ownership can relate to non-governmental public ownership held in independent public enterprises, or it can occur at the national, regional, local, or municipal levels of government. In contrast to private, collective/cooperative, and common ownership, public ownership is one of the three main types of property ownership (Ismail & Ali, 2020).

2.2 Empirical Review

2.2.1 Foreign Ownership and Earnings Management

Thu *et al.* (2023) looked at how the corporate governance index and foreign ownership affected the management of earnings in 169 Vietnamese listed companies between 2016 and 2020. The relationship is tested using the fuzzy-set qualitative comparative analysis method. The analysis's findings indicate that corporate governance and foreign ownership have a negative impact on earning management. Earning management is particularly negatively impacted by the relationship between foreign ownership and the corporate governance index. The study recommended that ownership concentration should be balanced to enhance efficiency.

Potharla (2021) examined foreign ownership restrictions and earning management practices of enterprises of particular non-financial firms in India between 2011 and 2018. OLS regression analysis results indicate that profit management is negatively impacted by both domestic and foreign institutions. The study recommended that strict guidelines should be set for information transparency, minimizing information asymmetry between the parties and guaranteeing that the financial situation is disclosed in the annual financial statements in an honest and equitable manner. As a result, their influence helps to restrict earning management practices.

Nguyen (2021) examined the impact of foreign ownership and ownership concentration on earnings management by utilizing data from 489 non-financial companies that were listed in Vietnam between 2009 and 2018. The results of the OLS regression analysis showed that managerial ownership and foreign ownership had a negative impact on earning management, whereas ownership concentration and foreign ownership had a positive impact. The study concluded that foreign ownership frequently modifies their earnings management strategies to pique investor interest in the market because they must demonstrate their performance in comparison to that of their rivals.

2.2.2 Family Ownership and Earnings Management

Humairoh and Jonnius (2023) examined the relationship between earning management and corporate governance mechanisms, as well as the impact of family ownership on this relationship. The study employs Generalized Least Squares (GLS) testing to evaluate companies that were included in the Company 100 index between 2015 and 2019. The result revealed that family ownership reinforces the board of commissioners' ability to stifle earnings management. Also, the board of commissioners has an impact on earnings management. The study suggested reorganizing the internal audit function to be more impartial and objective, particularly in relation to its role in management and governance.

Safia and Lian (2023) examines if family ownership concentration has a moderating effect on the relationship between two types of earnings management – real earnings management and accruals earnings management and CEO demographic characteristics. The study sample consists of 137 companies listed between 2017 and 2021 on the Amman Stock Exchange (ASE). Feasible generalized least squares estimation (FGLS) regressions were used to achieve the objectives of the study. The results showed that a concentration of family ownership influences financial reporting qualifications and gives older CEOs more leverage to manage accrual earnings.

Kumala and Siregar (2021) investigated the relationship between family ownership, earnings management, and corporate social responsibility (CSR). Annual financial statements, sustainability reports, and reports are the sources of research data. Panel data regression is used for data analysis. Research points to a negative correlation between earnings management and corporate social responsibility disclosures (CSRDs). The study discovered a positive correlation between earnings management and family ownership. Furthermore, family ownership reinforces the negative correlation between earnings management and CSR.

2.2.3 Institutional Ownership and Earnings Management

Saheed *et al.* (2022) investigated how ownership structure affected non-financial listed companies in Nigeria's Real Earnings Management. A total of seventy-six (76) non-financial listed companies were chosen over an eleven-year period (2010–2020) spanning ten (10) sectors. Data collected from the annual reports of firms was analyzed using the Generalized Method of Moments (GMM) estimator. The results demonstrated that real earnings management is significantly and negatively impacted by ownership concentration and institutional ownership. The study recommended that companies should be urged to retain a high percentage of institutional and concentrated ownership, as this is the most effective and dependable ownership structure for thwarting the opportunistic behaviour of the management.

Jacob *et al.* (2020) investigated how ownership structure affects the reported earnings quality of Nigerian consumer goods companies that were publicly traded. The study's nine-year timeframe ran from 2011 to 2019. Secondary data were taken from accounts and annual reports. Multiple regression analysis was used as a method. The study demonstrated that reported earnings quality is positively significantly impacted by institutional ownership and ownership concentration. The study suggested that institutions that monitor ownership should support ownership concentration because it can act as a deterrent to managers acting in the best interests of the company.

Godwin *et al.* (2020) looked at the impact of ownership structure on the market value of quoted consumer goods manufacturing companies in Nigeria between 2010 and 2018. The panel regression technique was used in the study as an analytical tool. The outcome demonstrated that institutional ownership have a positive impact on the firm value of Nigerian consumer goods companies. Thus, in order to raise the firm value of the Nigerian listed consumer goods companies, the study suggests that the number of shares held by management be decreased.

2.2.4 Government Ownership and Earnings Management

Eman *et al.* (2023) examined the relationship between accrual-based earnings management in the Egyptian context and corporate ownership structure was examined by. The dynamic panel threshold analysis approach was applied to 78 listed non-financial firms, spanning the years 2008–2017. They discovered a nonlinear connection between earnings manipulation and government ownership structure. There are significant policy implications from these findings. The study suggested determining the ideal ownership structure threshold to govern the company's managers. This should prevent earnings manipulation.

Erna and Olivia (2021) investigated ownership structure affects earnings management. Non-financial companies listed on the Indonesia Stock Exchange between 2016 and 2019 are the research objects used in this study. The Modified Jones Model, or discretionary accruals, is used to measure earnings management. The percentage of each share owned by the company is used to calculate the ownership structure. The study's findings revealed that government ownership has no appreciable impact on Indonesian earnings management. Leverage, company growth, and company size are the only factors that significantly improve earnings management.

Gaio and Pinto (2018) ascertained the relationship between state ownership and earnings management in European private and public companies. Their findings highlight the significance of capital markets in assessing how state ownership affects the quality of earnings. They contend that because private ownership is less incentivized to practice earnings management because of government protection, it engages in less earnings management than private NSOE. Nonetheless, state ownership of public companies engages in earnings management to a greater extent than NSOE. This finding suggests that managers of state ownership are under pressure from capital market forces to present a more positive picture of a company's performance.

3.0 Methodology

3.1 Research Design

This study adopts the correlational research design due to the fact that the variables cannot be manipulated by the researcher. This research design makes it impossible to select, control and manipulate the factors necessary to study cause-and-effect relationships directly.

3.2 Population of the Study

The population of this study consists of Nigerian listed companies on Nigerian Exchange Group (NGX) as at 31st December, 2023. The population comprises of one hundred and fifty six (156) firms listed on Nigerian Exchange Group.

3.3 Sample and Sampling Technique

Since the entire listed firms cannot be used for the study, the study is limited to ten (10) listed consumer goods firms in Nigeria. The basic criteria of selecting these firms are the capitalization prowess and their specialization. In selecting the sample, purposive sample technique was used to derive the sample size.

3.4 Method of Data Collection

The secondary source of data collection was used for this study where data was gathered from audited annual reports of selected listed deposit money banks in Nigeria. However, for the purpose of this study, eight (8) years annual reports of ten (10) selected consumer goods firms were adopted.

3.5 Method of Data Analysis

The study employed multiple regression technique of analysis using Least Squares regression estimation. This method was adopted because it enhances easy presentation and interpretation of data.

3.6 Variable Measurement

S/N	Variables	Measurement
1.	Earnings Management (EAM)	Proxied by calculating accrual basis net income which is measured by subtracting expenses incurred from revenue recognized
2.	Foreign Ownership (FOR)	Percentage of total shares held by foreign investors
3.	Family Ownership (FAM)	Percentage of total shares held by family investors
4.	Institutional Ownership (INS)	Percentage of total shares held by institutional investors
5.	Government Ownership (INS)	Percentage of total shares held by government investors

3.7 Model Specification

The empirical model of the study is mathematically expressed as follows;

$EAM_{it} = \quad \alpha + \beta_1 FOR_{it} + \beta_2 FAM_{it} + \beta_3 INS_{it} + \beta_4 GOV_{it} + \mathcal{E}_{it}$

Where;

EAM_{it} = Earnings Management
FOR_{it} = Foreign Ownership
FAM_{it} = Family Ownership
INS_{it} = Institutional Ownership
GOV_{it} = Government Ownership
$\mathcal{E}_{it}$ = Error term
α = intercept
$\beta_1 - \beta_3$ = Coefficients of parameters estimated

4.0 Result and Discussion

Table 1: Summary of Descriptive Statistics

Descriptive Statistics									
	N	Minimum	Maximum	Mean	Std. Dev	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
EAM	80	-7.03	4.70	-.7361	.96709	-2.279	.202	28.850	.401
FOR	80	.00	.60	.6250	.48581	-.522	.202	-1.752	.401
FAM	80	.00	.40	2.8958	7.92775	2.919	.202	7.465	.401
INS	80	.00	.25	62.9792	17.91529	-1.463	.202	1.496	.401
GOV	80	.00	.10	.7569	2.50662	3.209	.202	8.823	.401
N	80								

Source: Output of data analysis by author using SPSS (2025)

From the above table, the dependent variable, earnings management (EAM) has a mean value of -0.7361, standard deviation of 0.96709, minimum value of -7.03 and maximum of 4.70. The independent variables; Foreign Ownership (FOR) has a mean value of 0.6250 and a standard deviation of 0.48581, a minimum and maximum value of 0.00 and

0.60 respectively. Family Ownership (FAM) has a mean value of 2.8958, standard deviation of 7.92775, minimum value of 0.00 and maximum value of 0.40. Institutional Ownership (INS) has a mean value of 62.9792, standard deviation 17.91529, minimum value of 0.00 and maximum of 0.25. Government Ownership (GOV) has a mean value, standard deviation, minimum and maximum values of 0.7569, 2.50662, 0.00 and 0.10 respectively.

Table 2: Summary of Regression result

Model Summary	
Multiple R	.110
R Square	.12
Adjusted R Square	-.16
Std. Error of the Estimate	.975

Coefficients

	Unstandardized Coefficients				
	B	Std. Error	Beta	t	Sig.
(Constant)	-.139	.522		-.266	.791
FOR	-.152	.191	-.076	-.795	.428
FAM	-.020	.017	-.167	-1.177	.241
INS	-.007	.007	-.131	-.958	.339
GOV	.002	.034	.005	.058	.954

Source: Output of data analysis by author using SPSS (2025)

The B column discusses the coefficient of the model. This indicates that a 13.9% decrease in the earnings management is a function of 15.2% decrease in foreign ownership, 2.0% decrease in family ownership, 0.7% decrease in institutional ownership and 0.2% increase in government ownership.

The cumulative adjusted R^2 (0.16) which is the multiple coefficient of determination gives the proportion or percentage of the total variation in the dependent variable as explained by the independent variables jointly. Hence, it signifies that 16% of the total variation in earnings management of the sampled firms is caused by the proxies of ownership structure. This is quite fair so predictions from the regression equation are fairly reliable. It also means that 84% of the variation is still unexplained so adding other independent variables could improve the fit of the model.

4.1 Discussions

Considering the significant effect of foreign ownership on earnings management of listed consumer goods firms in Nigeria, the regression result in table 4 indicate that foreign ownership has a negative and insignificance influence on earnings management. This was proved by the beta coefficient value of 0.076 and a t-value of -0.795 which has a p-value of 0.428 which is insignificance at 5% significance level. This leads to the acceptance of null hypothesis and rejection of alternative hypothesis. Hence, it is concluded that foreign ownership has no significant effect on earnings management of listed consumer goods firms in Nigeria.

Considering the significant effect of family ownership on earnings management of listed consumer goods firms in Nigeria, the regression result in table 4 indicate that family ownership has a negative and insignificance influence on earnings management. This was proved by the beta coefficient value of .167 and a t-value of -1.177 which has a p-value of 0.241 which is insignificance at 5% significance level. This leads to the acceptance of null hypothesis and rejection of alternative hypothesis. Hence, it is concluded that family ownership has no significant effect on earnings management of listed consumer goods firms in Nigeria.

Considering the significant effect of institutional ownership on earnings management of listed consumer goods firms in Nigeria, the regression result in table 4 indicate that institutional ownership has a negative and insignificance influence on earnings management. This was proved by the beta coefficient value of 0.131 and a t-value of -0.958 which has a p-value of 0.339 which is insignificance at 5% significance level. This leads to the acceptance of null hypothesis and rejection of alternative hypothesis. Hence, it is concluded that institutional ownership has no significant effect on earnings management of listed consumer goods firms in Nigeria.

Considering the significant effect of government ownership on earnings management of listed consumer goods firms in Nigeria, the regression result in table 4 indicate that government ownership has a positive and insignificance influence on earnings management. This was proved by the beta coefficient value of 0.005 and a t-value of 0.058 which has a p-value of 0.954 which is insignificance at 5% significance level. This leads to the acceptance of null hypothesis and rejection of alternative hypothesis. Hence, it is concluded that government ownership has no significant effect on earnings management of listed consumer goods firms in Nigeria.

The findings from the first hypothesis revealed that foreign ownership has no significant effect on earnings management of listed consumer goods firms in Nigeria. This findings is in agreement with the findings of Thu *et al.*, (2023) and Potharla (2021) but in disagreement with the results of Nguyen (2021) and Ismail and Ali (2020).

The findings from the second hypothesis revealed that family ownership has no significant effect on earnings management of listed consumer goods firms in Nigeria. This result agrees with the findings of Humairoh and Jonnius (2023) and Safia and Lian (2023) while it negates the findings of Kumala and Siregar (2021) and Tim (2018).

The findings from the third hypothesis revealed that institutional ownership has no significant effect on earnings management of listed consumer goods firms in Nigeria. This findings correlates with the findings of Saheed *et al.* (2022), Jacob *et al.* (2020) and Godwin *et al.*, (2020) while it negates the findings of Ajao and Ejokehuma (2020).

The findings from the forth hypothesis revealed that government ownership has no significant effect on earnings management of listed consumer goods firms in Nigeria. This is further strengthened by the position of Eman *et al.* (2023) and Erna and Olivia (2021) while it disagrees with the results of Gaio and Pinto (2018).

5.0 Conclusion and Recommendations

5.1 Conclusion

Companies' ownership structures are evolving quickly to meet the demands and challenges of a globalized world. The capacity of a company to generate satisfactory profits within this competitive landscape dictates its prospects for survival, given the increasing global integration of the world's economies. Given the potential conflict of interest resulting from the separation of ownership and control, the view contends that while shareholders are concerned with maximizing returns at reasonable risk, managers may prefer growth to profits, may be dishonest or lazy, and may maintain expensive labour or product standards above the necessary competitive minimum. The investigation concludes that there is no discernible impact of foreign ownership, family ownership, institutional ownership, or government ownership on the management of earnings in listed companies.

5.2 Recommendations

The following recommendations are hereby made:

i. Consumer goods companies should maintain the level of foreign ownership since it does not have a significant effect on the earnings management of the companies.
ii. Management of consumer goods companies should put in more measures to reduce the family ownership in order to have a fair and reliable financial statement.
iii. Institutional ownership should be encouraged by monitoring authorities such as Security and Exchange Commission (SEC) because of the role the plays in restraining managers to act in a manner that favours the corporation.
iv. The government ownership shows a negative relationship which depicts the influence they have on earnings. Their stake in the companies should be increased in order to reduce earnings manipulations.

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Mentorship and SMEs Growth in Bida Local Government Area, Niger State, Nigeria

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Abstract

Small and Medium Enterprises (SMEs) in Nigeria face several challenges, including limited access to finance, inadequate infrastructure, and insufficient entrepreneurial skills. Mentorship has been recognized as a key factor in promoting SME growth. This study examines the effect of mentorship on SME growth in Bida Local Government Area, Niger State. A survey approach was adopted, using a sample of 363 SME owners from a population of 5,678 registered enterprises, selected via the Taro Yamane formula. Data were collected using a Likert-type structured questionnaire (rated 1 = Strongly Disagree to 5 = Strongly Agree) and analyzed with Simple Linear Regression and Pearson's Product Moment Correlation Coefficient in SPSS. Findings revealed a mixed influence of mentorship on SME growth. Psychosocial mentoring support had a significant negative effect ($\beta = -0.134$, $t = 9.066$, $p < 0.05$), explaining 11.40% of SME growth variation ($R^2 = 0.114$) with an F-statistic of 82.196. Conversely, career mentoring support significantly enhanced SME growth ($\beta = 0.590$, $t = 9.672$, $p < 0.05$), while role modeling mentoring support showed a strong positive correlation ($r = 0.775$, $p < 0.05$), underscoring the importance of mentorship from successful entrepreneurs. The study recommends that mentors and business coaches refine their psychosocial mentoring strategies for better SME performance.

Keywords: Mentorship, SMEs growth, Career Mentoring Support, Role Modelling Mentoring Support.

Introduction

Small and Medium Enterprises (SMEs) are the backbone of Nigeria's economy, driving growth, innovation, and employment opportunities (Akinbamide, 2022). They are vital to Nigeria's economic growth, accounting for over 90% of businesses and 80% of employment (CBN, 2022). However, these small-scale enterprises often face significant challenges, including limited access to resources, infrastructure, and formal credit channels (Scandura, 2022 & World Bank, 2022). But effective mentorship and guidance can play a pivotal role in bridging this gap, enabling SMEs growth enterprises to overcome obstacles, scale up their operations, and realize their full potential for mentorship to catalyze business growth and success. Faizan et al., (2020) is of the view that mentorship has emerged as a crucial factor in enhancing SME growth. Iqbal et al., (2020), specifically pointed that mentorship provides psychosocial, career, and role modeling support essential for SME success. A closer look at the submission by Iqbal et al., (2020), different scholars (Ragins and Kram, 2020; Ghosh and Reio, 2013) believed that psychosocial mentoring support enhances entrepreneurs' self-efficacy, motivation, and resilience. It also focuses on emotional support, empathy, and social interaction, enhancing protégé self-efficacy, well-being, and job satisfaction (Kammeyer-Mueller et al., 2020; Noe et al., 2020). According to Grosso, (2020), it is critical in fostering a supportive mentorship environment, encouraging open communication and trust. On the aspect of career mentoring support, Kram (2019) shared similar view with Wanberg et al. (2019) both of whom contended that career mentoring support helps entrepreneurs develop business skills, set goals, and navigate industry networks. Furthermore, Chandler et al., (2020), submits that career mentoring support emphasizes on career guidance, networking, and skill development, influencing protégé career advancement, promotion, and organizational commitment. Ragins and Kram, (2020) argued that career mentoring support is essential for protégés to face the challenges of organizational politics and develop strategic relationships. Different from the foregoing two concepts of mentoring, is role modeling mentoring support. To many scholars (Bandura, 2019; Kram, 2019; Mihail & Klimecki, 2019), role modeling mentoring support provides entrepreneurs with positive role models, demonstrating effective leadership and management practices. Recent studies (Faizan et al., 2020; Iqbal et al., 2020) have shown that mentorship practices like psychosocial mentoring, career mentoring and role modelling mentoring positively impacts SME growth, including increased revenue, employment, and innovation. In particular Haggard et al., (2020) and Kammeyer-Mueller et al., (2020), separately reported that role modelling mentoring involves demonstrating positive behaviors, values, and attitudes, influencing protégé professional identity, leadership development, and ethical decision-making. Grosso (2020), suggested that it is critical in shaping protégé values and norms, fostering a culture of excellence and accountability.

Generally, while psychosocial mentoring support has been linked to improved entrepreneurial intentions and behaviors (Piperopoulos & Dimov, 2015; Ghosh & Reio, 2013), other scholars (Scandura, 2022; Ragins & Kram, 2020; Wanberg et al., 2019) reported that career mentoring support is associated with enhanced business planning and strategy development and role modeling mentoring support has been found to influence entrepreneurs' leadership styles and decision-making processes (Mihail & Klimecki, 2019). Measuring the influence of these key determinants have become herculean task, especially when measuring the growth of business enterprises. Business growth according to scholars (Mihail and Klimecki, 2019 & Noe and Greenberger, 2020) is the expansion and development of small enterprises, characterized by increased revenue, employment, and market share. But Baum et al., (2020) sees SMEs growth as being influenced by factors such as entrepreneurial orientation, innovation, and access to resources. Nevertheless, it is sad to note that despite the importance of mentorship, few studies have examined its impact on SME growth in Nigeria, particularly in Bida, Niger State and hence the motivation behind this study and the belief that it will address existing knowledge gap in this area.

Statement of the Problem

Ideally, Small and Medium Enterprises (SMEs) in Nigeria should be thriving, given their vital role in the country's economic growth, accounting for over 90% of businesses and 80% of employment (Central Bank of Nigeria, 2022), but unfortunately, they face significant challenges, including limited access to finance (Gibb, 2020), inadequate infrastructure (Chandler et al., 2020), and lack of entrepreneurial skills (Wiklund et al., 2020), which mentorship, a crucial factor in enhancing SME growth, providing psychosocial, career, and role modeling support essential for SME success, could help address, yet despite the importance of mentorship, few studies have examined its effect on SME growth in Nigeria, particularly in Bida, Niger State, creating a knowledge gap that this study aims to address by exploring the effect of mentorship on SMEs growth in Bida Local Government Area of Niger State.

Purpose of the Study

The general purpose of the study is to explore effect of mentorship on SMEs growth. The specific objectives are to:

1. Investigate the relationship between psychosocial mentoring support and SMEs growth.
2. Evaluate the extent at which career mentoring support influence SMEs growth
3. Determine the relationship between role modelling mentoring support and SMEs growth

Statement of Hypotheses

The fundamentals on which this study is built upon are hypothetically stated below and tested at 5% level of significance.

$H0_1$: There is no meaningful connection between psychosocial mentoring support and SMEs growth.

$H0_2$: Career mentorship support has no discernible effect on SMEs growth**.**

$H0_3$: Role modelling mentoring support and SMEs growth do not significantly correlate.

Methodology

This study employs survey research. However, the Yamane (1967) formula was used with a 5% level of significance to get a statistically acceptable population sample size from the total population of 5,678 (Niger State Government, 2021) registered businesses in the category of small-Scale Business Enterprises within Bida Local Government Area of Niger State. This is given below:

$$n = \frac{N}{1+Ne^2}$$

Where n = Population sample size

N = Total Population

e = Level of significance (5%)

That is:

$$n = \frac{5,678}{1+5678(0,05)^2} = \frac{5,678}{1+5,678(0.0025)} = \frac{5,678}{1+14.195} = \frac{5,678}{15.195} = 373.6$$

The number was rounded to 374, otherwise we would have to find a fraction of a human being. A simple random sampling technique was applied. A five-point Likert scale questionnaire ranging from Strongly Disagree (1) to Strongly Agree (5) was administered through research assistants. The questionnaire was validated through expert review. While Cronbach's Alpha test was run to assess reliability and coefficient values of 0.787, 0.868, 0.798 and 0.812 were obtained for psychosocial mentoring, career mentoring, role modelling mentoring and SMEs growth respectively. These values were interpreted to mean that the study instrument is very good and acceptable (Bolarinwa, 2015). Nevertheless, descriptive and inferential statistics were used to analyze and test the data. All analyses and test were run on Statistical Package for Social Sciences (SPSS).

Data Presentation

The following sections present summary of the data for this study.

Table1 Respondents Response Rate

Response	Respondents	Percentage (%)
Returned	363	97.1
Not Returned	11	2.9
Total	374	100%

Source: Field Survey, 2024

Table1 above show a total number of three hundred and seventy-four (374) Questionnaires administered and responses received from the respondents. Thus, during data collation, we found that three hundred and sixty-three (363) copies of the were filled and returned, and thereby giving a response rate of 97.1%. However, this high response rate was attributable to the fact respondents were not required to disclose their locations. However, eleven (11), representing 2.9% of the questionnaire were not returned.

Demographic Information of Respondents

Five demographic variables are included in this study. They are: gender, age, marital status, educational qualification and working experience. The data is presented in table2 below:

Table2 Distribution of the Respondents Demographic and Personal Information

Variables	**Information**	**Frequency (N)**	**Percentage (%)**
Gender	Male	187	51.5%
	Female	176	48.5%
Age	Below 35 years	93	25.6%
	35, below 45years	128	35.3%
	45 below 55years	121	33.3%
	55 years and above	21	5.8%

Marital Status	Single	101	27.8%
	Married	219	60.3%
	Divorce	16	4.4%
	Widow	27	7.4%
Educational Qualification	SSCE	198	54.5%
	ND	99	27.3%
	HND/BSc	59	16.3%
	Masters	7	1.9%
	PhD	0	0.0%
Working Experience	1-5 years	72	19.8%
	6-10 years	119	32.8%
	11-15 years	97	26.7%
	16 years and above	75	20.7%

Source: Field Survey, 2024

Table2 above present the demographic information of the respondents starting with the analysis of gender, age, marital status, educational qualification and working experience in the following sections. Of the total 363 respondents, 187, representing 51.5%, are male, while 176, representing 48.5%, are female. The slight majority of males (51.5%) in the sample suggests that the findings may be more representative of the male perspective. However, the relatively balanced distribution of males and females ensures that the views of both genders are represented, providing a more comprehensive understanding of mentorship and SMEs growth.

Age distribution of the respondents reveals a diverse range of age groups. Majority of respondents, 128 (35.3%), fall within the 35-44 years age bracket, followed closely by those in the 45-54 years age bracket, who constitute 121 (33.3%) of the total respondents. At the lower end of the age spectrum, 93 (25.6%) of the respondents are below 35 years, indicating a significant presence of younger individuals in the sample. On the other hand, only 21 (5.8%) of the respondents are 55 years and above, suggesting a relatively small proportion of older individuals.

Thus, the majority of respondents (68.6%) fall within the productive age range of 35-54 years, indicating that the sample is comprised of working-age individuals with potential for economic contribution. The relatively small proportion of respondents below 35 years

(25.6%) and above 55 years (5.8%) suggests that programs or policies targeting younger or older populations may require additional consideration to effectively address mentoring needs.

Marital status distribution of the respondents shows a clear majority of married individuals, with 219 (60.3%) of the respondents indicating that they are married. This suggests that the sample is comprised of a significant number of individuals who are likely to have family responsibilities and commitments. At the other end of the spectrum, 101 (27.8%) of the respondents are single, indicating a substantial presence of unmarried individuals in the sample. A relatively small proportion of respondents are divorced (16, 4.4%) or widowed (27, 7.4%), suggesting that these groups are less represented in the sample. The majority of married respondents (60.3%) may indicate that family-related factors could influence their decisions, behaviors, or outcomes. Programs or policies targeting this population may need to consider the potential impact of family responsibilities on their effectiveness. Conversely, the significant proportion of single respondents (27.8%) may suggest that programs or policies targeting unmarried individuals could be tailored to address their unique mentoring needs.

The educational status of the respondents reveals a predominantly secondary school-educated population, with 198 (54.5%) of the respondents holding an SSCE certificate. This is followed by a significant proportion of respondents with OND qualifications, totaling 99 (27.3%). At the higher education level, 59 (16.3%) of the respondents possess HND/BSc qualifications, while only 7 (1.9%) hold Master's degrees. Notably, no respondents reported holding a PhD. Nevertheless, the majority of respondents with secondary school education (54.5%) may indicate a need for vocational training or continuing education programs to enhance their skills and employability. Conversely, the presence of respondents with higher education qualifications (16.3% with HND/BSc and 1.9% with Master's degrees) suggests that there may be opportunities for knowledge-sharing and capacity-building initiatives targeting this subgroup.

The working experience of the respondents reveals a relatively evenly distributed range of experience levels. The largest proportion of respondents, 119 (32.8%), have between 6-10 years of work experience, indicating a significant presence of mid-career professionals. Thus, at the lower end of the experience spectrum, 72 (19.8%) of the respondents have 1-5 years of work experience, suggesting a notable presence of early-career professionals. Conversely, 97 (26.7%) and 75 (20.7%) of the respondents have 11-15 years and 16 years or more of work experience, respectively, indicating a substantial presence of experienced professionals. However, the diverse range of working experiences among respondents suggests that mentoring programs targeting this population may need to be tailored to address the unique needs and challenges of different business owners. For instance, those with few years of experience may benefit from early mentoring programs, while experienced business owners may require more advanced leadership development and mentoring initiatives.

Results and Discussion

Reiterating Hypothesis One ($H0_1$): There is no meaningful connection between psychosocial mentoring support and SMEs growth

To test research hypothesis one($H0_1$), a simple linear regression analysis test was run with SMEs growth as dependent variable and psychosocial mentoring support as predicting variable.

Table3: Summary of Simple Regression Analysis for the relationship between psychosocial mentoring support and ***SMEs growth*** (N= 363)

ModelSummary				
Model	R	R^2	Adjusted R^2	Std. Error of the Estimate
1	- 0.338[a]	0.1140	0.1130	4.2692
a. Predictors: (Constant), psychosocial mentoring support				

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	**T**	**Sig.**
		B	Std. Error	Beta		
1	(Constant)	22.054	0.431		51.168	0.000
	psychosocial mentoring support	-0.134	0.015	-0.338	9.066	0.000
$F(1,640) = 82.196$, $p<0.05$						

a**. Dependent Variable: SMEs growth**

Source: SPSS Output, 2024

The first objective of this study is to investigate the relationship between psychosocial mentoring support and SMEs growth. Thus, the summary of results of the test of hypothesis that is consistent with objective one is presented in Table3 above. The findings show that psychosocial mentoring support has a significant negative effect on SMEs growth (βeta = - 0.134, t = 9.066, p-value (Sig) <0.05). The result shows that psychosocial mentoring support and SMEs growth moves in the opposite direction (that is, has inverse relationship). This finding is supported by F-statistic of 82.196 and p-value of 0.000 which is less than the adopted level of significance 0.05. The model R Square (that is, R^2) between psychosocial mentoring support and SMEs growth was 0.114, which indicates that 11.40% of the variations in SMEs growth are explained by psychosocial mentoring support. 88.60% variations of SMEs growth are unexplainable by psychosocial mentoring support in this study. The p-value which stood at 0.0000^b signify that psychosocial mentoring support significantly relates to SMEs growth in Bida Local Government Area of Niger State. The line of best fit for the variations in this model is given below:

$$Y_1 = 22.054 - 0.134PMS \ldots\ldots \text{Eq 3.1}$$

Such that:

Y_1 = ***SMEs growth***

PMS = Psychosocial Mentoring Support

The regression equation showed that the growth of SMEs growths in Bida Local Government Area was 22.054 when all other parameters were set to zero. -0.134 was the regression coefficient. This suggests that as the amount of psychological mentoring support increases, SMEs growth declines. In other words, SMEs growth decreases by 0.134 for every unit increase in the incidence of psychosocial mentoring support. Consequently, the first null hypothesis (H01), according to which there is no meaningful connection between psychosocial mentoring support and SMEs growth, is now rejected.

The results of the first hypothesis demonstrated that there was a negative and significant impact on SMEs growth in the association between psychological mentoring support and SMEs growth. The results of this study are consistent with those of other research (Wiklund & Shepherd 2020; Wanberg & Kammeyer-Mueller, 2019), which suggests a connection between SMEs growth success and psychosocial mentoring support. According to the current study, SMEs growth in Bida Local Government Area is significantly and negatively impacted by psychological mentoring support as a mentorship technique. The investigation thus confirms the rejection of the null hypothesis (**$H0_1$**) with a p-value of 0.000^b, which is less than the chosen threshold of significance 0.05, based on the results and the literature that supports them.

Reiterating Hypothesis two (**$H0_2$*****): Career mentorship support has no discernible impact on SMEs growth.***

Simple regression analysis was also used to evaluate hypothesis two ($H0_2$). The responses to all items for each variable were added up to create the data for career mentorship support and small company growth. Table 4 displays the regression's findings.

Table 4: Synopsis of the Simple Regression Analysis on the Impact of career mentoring support on SMEs growth (N=363)

ModelSummary				
Model	**R**	**R^2**	**Adjusted R^2**	**Std. Error of the Estimate**
1	0.723[a]	0.5220	0.5080	4.789
a. Predictors: (Constant), career mentoring support				

Coefficients[a]						
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**T**	**Sig.**
		B	**Std. Error**	**Beta**		
1	(Constant)	30.782	1.490		20.664	.0001[b]
	career mentoring support	0.590	0.061	0.723	9.672	.0002
$F(1,639) = 9.754$, $p<0.05$						

a. Dependent Variable: SMEs growth

Source: SPSS Output, 2024

Assessing the degree to which career mentoring support affects SMEs growth is the study's second objective. However, the results of the linear regression study on the influence of career mentoring support on SMEs growth are shown in Table 4 above. The findings demonstrate that SMEs growth in the Bida Local Government Area of Niger State is significantly positively affected by career mentoring support (βeta = 0.590, t = 9.672, p-value (Sig)<0.05). Thus, the model parameter's coefficient is statistically significant at p-value (Sig)<0.05, as indicated by the t value of 9.672 and p-value of 0.0001[b]. This indicates that the growth of SMEs growth is statistically and significantly predicted by career mentoring support. Additionally, the table shows that 52.20% of the variation in SMEs growth can be attributed to career mentoring support while 47.80% are unaccounted for. Therefore, equation 4.2 summarises the fitted model that was used to explain how career mentoring support affects SMEs growth.

$$Y_2 = 30.782 + .590CMS \;\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \; Eq\ 4.2$$

Such that:

Y_2 = SMEs growth

CMS= Career Mentoring Support

According to the regression equation, the growth rate of SMEs growth in Bida Local Government Area was 30.782 when all other parameters were held constant at zero. According to the statistics, a unit increase in career mentoring support will result in a 0.590 rise in SMEs growth in Bida, Niger State, when independent variable is set to zero. The findings showed that career mentoring support has a favourable effect on the expansion of SMEs growth in Bida, Niger State. Consequently, the second null hypothesis (H02), according to which career mentorship support has no discernible effect on SMEs growth, is now rejected.

The study's analysis revealed that career mentoring assistance had a major impact on the expansion of SMEs growth in Bida, Niger State. This outcome is in line with Faizan, Haque, and Faizan's (2020) findings. They found that stronger organisational performance and more consistent business growth were associated with higher levels of career mentoring support. Additionally, their research showed that career mentoring support directly improves organisational performance. Thus, the influence of career mentoring support, which has been extensively studied in the literature, makes this easy to understand. The outcome, however, contradicts Scandura's (2022) findings, which indicated a negative correlation between organisational success and career mentoring support. However, the study supports the rejection of null hypothesis two ($H0_2$) based on its findings and their relevance to similar findings in existing literature.

Reiterating Hypothesis 3 (H0$_3$): Role modelling mentoring support and SMEs growth do not significantly correlate.

The third hypothesis ($H0_3$) sought to determine how mentorship support and role modelling relate to the expansion of SMEs growth. The Pearson's product-moment correlation coefficient analysis was used to test the hypothesis. The responses to all items for each variable were added up to create the statistics for small company growth and role modelling mentoring support. The results are shown in Table 5.

Table 5: Pearson Product-Moment Correlation Summary Coefficient Analysis of the relationship between SMEs growth and mentorship and role modelling

		Role Modelling Mentoring Support	SMEs growth
Role Modelling Mentoring Support	PPM Correlation	1	0.775*
	Sig. (2-tailed)		0.0001
	N	363	363
SMEs growth	PPM Correlation	0.775*	1
	Sig. (2-tailed)	0.0001	

	N	363	363

Source: SPSS Output, 2024

The findings of the Pearson product-moment correlation coefficient study on the connection between SMEs growth and mentoring help for role modelling are shown in Table 5. The findings indicate a substantial and positive correlation ($r = 0.775$, $p<.05$) between SMEs growth success and mentoring help from role models. At $p = 0.0001^b$, which is below the study's chosen significance level of 0.05, this link was significant. The importance of SMEs growth rises in tandem with the value of mentorship and role modelling. The null hypothesis three ($H0_3$), which claims that role modelling mentoring support and SMEs growth do not significantly correlate, is thus rejected in light of this finding.

The third goal was to determine how mentorship support and role modelling relate to the growth of SMEs growth. The results showed that SMEs growth in Bida, Niger State, was positively and statistically significantly correlated with role modelling mentoring support. The result is similar to the findings of Kammeyer-Mueller and Church (2020), who discovered that mentorship and role modelling can remove obstacles to business expansion and enhance organisational performance. Because the p-value of 0.0001^b is less than the significance level of 0.05 chosen for this investigation, the analysis confirms the rejection of the third null hypothesis ($H0_3$).

Conclusion

In order to bridge the gap between theory and practice and help SMEs growth enterprises overcome challenges, expand, and reach their full potential, effective mentoring and support are essential. This study looked into the effect of mentorship on SMEs growth. The study has clarified the ways in which different types of mentorships support effect SMEs growth in Bida, Niger State, highlighting the importance of psychological, career, and role-modeling mentoring support in promoting SMEs growth in Bida Local Government Area of Niger State.

Recommendation

Based on the findings and conclusion of this study, the following recommendations were made.

1. Given the significant negative effect of psychosocial mentoring support on SMEs growth, it is recommended that mentors and business coaches reassess their psychosocial mentoring support strategies to identify areas for improvement.
2. Considering the positive influence of career mentoring support on SMEs growth, it is recommended that entrepreneurs and SMEs growth owners prioritize career mentoring support as a key strategy for enhancing SMEs growth.
3. With the positive relationship that was established between role modeling mentoring support and SMEs growth, it is recommended that entrepreneurs and SMEs growth owners seek out role models who can provide guidance and support to their businesses.

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Monetary Policy and Food Security: The Nigeria's Experience

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Abstract

The Nigerian food crisis has gained national attention, and there are differing views on whether the Central Bank of Nigeria can successfully address rising food prices through monetary policy interventions. As a result, the study examines the effect of monetary policy on food security problems in Nigeria from 1986 to 2024. Pertinent secondary data were obtained from the World Development Indicator (WDI), the National Bureau of Statistics (NBS), and CBN Statistical Bullion. The data's stationary qualities were established using the Kwaitkowski-Philips-Schmidt-Shin (KPSS) unit root test, and the effects of the variables were estimated using the Autoregressive Distributed Lag (ARDL)/Bound cointegration test methods of analysis. The F-statistic value of 7.89 was found to be higher than the critical upper bound value of 3.21 at the 5 % level of significance, thus indicating a long-term effect of monetary policy indices on food security. Federal government recurrent expenditure on agriculture and broad money supply had statistically significant effect on food security, while exchange rate, Interest rate and monetary policy rate, treasury bill rate and agricultural credit guarantee scheme fund had insignificant effect on food security in Nigeria. The study among others, recommends a deliberate policy of strengthening the exchange rate of the naira against other currencies as well proper management of funds under the agricultural credit guarantee scheme towards its intended purpose.

Keywords: Food Security, Monetary Policy, Central Bank, Food Production.

1.0 INTRODUCTION

Food security concerns occupy the main thrust in global economic discourse. The food crisis in Nigeria is increasingly becoming a time bomb. This is part of the global food crisis be-devilling the world as evidenced in the increasing food prices that are being experienced in different part of the world. In 2008, an estimated 902 million individuals in poor nations suffered from malnutrition, while between 2014 and 2016, an estimated 795 million people worldwide suffered from under nutrition (Makombe, 2023). According to a 2018 survey, approximately 1 billion people worldwide are thought to be chronically hungry (McCarthy, Uysal, Badia-Melis, Mercier, O'Donnell, & Ktenioudaki, 2018).

The worst food crisis in 40 years is currently plaguing nations including South Sudan, Somalia, Ethiopia, Nigeria, and Kenya, according to Akin (2024). According to the data available, 20% of children in underdeveloped nations suffer from malnutrition, and poor nutrition is linked to half of all child fatalities globally (Ashley 2016; McCarthy et al. 2018). Around 26.5 million people in Nigeria are likely to face severe food insecurity, according to the FAO (2023) report.

The worsening food crisis in Nigeria is the resultant skyrocketing food prices in different part of the country which has put food beyond the reach of many Nigerians. Food inflation is part of the general inflationary trend in the country and has pushed a large proportion of households into grave situations of hunger and malnutrition. As at January 2024, Nigeria's food inflation surged to 35.41% from 33.9% in December 2023. The figure rose to 39.53% in July 2024 which has put significant pressure on especially low- and middle-income households who spend a large proportion of their income on food (Trading Economics, 2024). Available statistics revealed that 71% of household in Nigeria are affected by food insecurity. Worst still, the national average of the cost of a Healthy Diet (CoHD), used as a measure of physical and economic access to healthy diets was reported at ₦1,346 (NBS, 2024), which has impaired accessibility and affordability of food, thus forcing many to consume whatever food they have access to regardless of its quality or safety, thus exacerbating food insecurity.

Besides the challenges brought about by conflict between farmers and herders and other forms of insecurity which has hindered food production, climate variability and extremes, particularly the erratic and unpredictable rainfall are key drivers of the recent rise in global hunger. In addition, farmers' poor access to agricultural inputs; coupled with the consequence of fuel subsidy removal have all heightened the food security dilemma in Nigeria. In particular, the fuel subsidy removal has significantly raised the cost of transporting food, making it more expensive and less accessible to consumers (Olorunmola, Eggon, Ajidani, Ibbih & Odonye, 2024).

Over the years the government has formulated different agricultural programmes and projects ranging from National Accelerated Food Production Programme (NAFPP) launched in 1973; the Agricultural Development Projects (ADPS) established in 1974; the Operation Feed the Nation (OFN) which was initiated 1976; the Green Revolution of 1980; the Nigerian Agricultural Insurance Scheme-NAIS (1987); the National Fadama Development Project-NFDP (1992); National Special Program on Food Security-NSPFS (2002); Root and Tuber Expansion Programme (2003); National Economic Empowerment and Development Strategy-NEEDS (2004); and more recently, the Anchor Borrower's Programme (ABP) launched in 2015 were targeted at ensuring food security of the nation through improved seedlings, subsidizing of agricultural inputs as well as supporting farmers with funds for agricultural purpose (Amakom, Madukwe & Dimelu, 2020). These programmes recorded varying degree of success; notwithstanding, food security still remains a daunting challenge to the Nigeria state.

Monetary policy instruments have over the years proven to be an important mechanism through which economic ills such as food security can be handled. As a tool for managing money supply and interest rates, monetary policy have the potential to impact various sectors of the economy, including agriculture (Ameji, Elisha, Adofu, & Gimba, 2023). For instance, using the Agricultural Credit Guarantee Scheme Fund (ACGSF) where direct credit is made available to the agricultural sector through loans, notes, bill of exchange and bankers' acceptances, monetary policy is a potential instrument for growth

in most agriculture-based countries (Yusufu & Ogboru, 2018). In the same vein, Adepoju and Obayelu, (2013) opined that monetary policy is strategic in shaping macroeconomic conditions that influence food security outcomes. Interest rate adjustments, money supply management, and exchange rate policies can impact agriculture through various channels. Lower interest rates may boost investment in agriculture by increasing access to credit for inputs and machinery (Jayne, Mather & Mghenyi 2010). In specific term, short and intermediate term credits can be used for obtaining farm inputs such as fertilizer, improved seeds, breeding livestock and farm machinery to enhance better yields of farm produce. Similarly, lower interest rate for farmers can encourage borrowing for agricultural purposes, all tailored towards increased output.

In Nigeria, the main goal of monetary policy is price stability (Ogwuche, 2021). However, food crises, which show up as a high rate of food inflation, continue to pose a serious threat to Nigeria's economic growth despite the Central Bank of Nigeria's adoption of several monetary regimes over the years. This study investigates the degree to which Nigeria's food security issue has been addressed by monetary policy reform.

2.0 LITERATURE REVIEW

2.1 Conceptual Review

The notion of food security has drawn the interest of various groups, each of which has a different conceptualisation of the topic. There are numerous definitions of food security as a result of its multifaceted character. From a food-first to a livelihood viewpoint; from objective indicators to subjective perception; and from the global and national to the household and individual, these definitions represent three paradigm shifts in the thought surrounding food security. Economists typically view food security as a supply and demand relationship that is closely linked to transfers and income growth (Makombe, 2024). However, the widely acceptable definition of food security states that: "Food security, is achieved when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life" (Makombe, 2024:56).

The Food and Agriculture Organisation (FAO) formally adopted and reaffirmed this definition in the 2009 Declaration of the World Summit on Food Security, which conceptualised food security at the macro (community, national, regional, and global) and meso (household and community) levels (Clapp, Moseley, Burlingame, & Termine, 2022); Makombe, 2024). Notably, four interconnected pillars of food security have been highlighted by researchers including McCarthy et al. (2018), Bertelli 2020, Clapp et al. 2022, and Makombe 2024: availability, access, utilisation, and stability. Food access is concerned with the resources needed to obtain the right foods for a healthy diet, whereas the availability component deals with the amount and quality of food provided through imports, food assistance, or domestic production. In order to achieve a state of nutritional wellbeing and satisfy all physiological needs, utilisation entails having sufficient diet, clean water, sanitary conditions, and medical treatment. Stability requires that a population, home, or individual must always have adequate availability to food without running the risk of losing it due to unforeseen shocks.

In general, monetary policy refers to the precise actions taken by the central bank to control the cost, supply, and value of money in an economy with the ultimate goal of accomplishing the macroeconomic goals of the government. These goals include maintaining price stability, achieving balance of payments equilibrium, creating jobs and promoting economic growth (Iriabije, Ekong & Orebiyi, 2024).

The majority of monetary authorities begin by focusing on overall inflation, but measures of "core" inflation—which do not include the impact of food prices—often influence their policy choices since they provide a more accurate picture of underlying price trends. Iddrisu and Alagidede (2020) have brought up the crucial question of whether rising food costs influence central bankers' stances. According to this reasoning, central bankers have little control over the effects of food prices since they are short-lived, subject to supply-side shocks, and exhibit extreme volatility (Alper, Hobdari, & Uppal, 2017; Anand, Prasad, & Zhang, 2015). The empirical literature also raises the counterargument that demand-side variables like income can potentially affect rising food prices; thus aggregate demand moderation (within central bank jurisdiction) can be an effective remedy (Nadani, Usman, Yaro, & Asooso, 2023).

The effect of monetary policy on food security is shown in Figure 1. The actions of the CBN through the monetary policy indicators such as the exchange rate, money supply, monetary policy rate, interest rate, agricultural credit guarantee scheme funds as well as the federal government recurrent expenditure on agricultural are directly related to food security issues in the country. The monetary policy indicators are targeted at controlling the price of food by creating a framework for increased food production. It is expected that increase in food production will manifest in lower prices of food thus ensuring accessibility, availability, affordability and stability which are the core of food security.

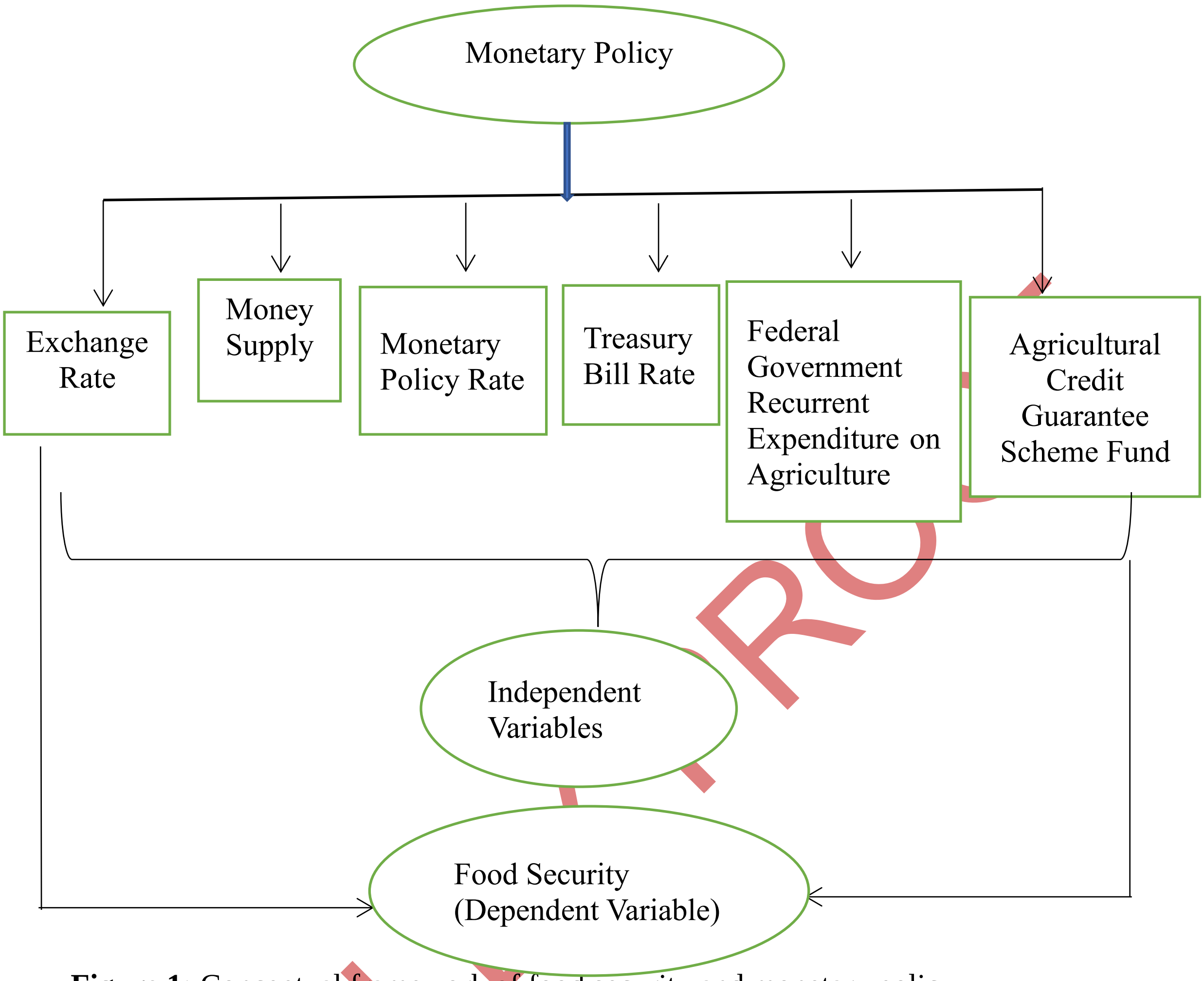

Figure 1: Conceptual framework of food security and monetary policy
Source: Author's conception (2025)

In Figure 1, food security which is the dependent variable is the primary variable of interest in this study. It is a reflection of the physical and economic access to sufficient, safe and nutritious food to meet their dietary needs of the populace. Food security is measured in this study as food inflation. This establishes a channel of the effect of monetary policy food security.

2.2 Theoretical Review

From a theoretical perspective, monetary theory investigates how money and economic activity are related. It looks for and explains how the supply and demand of money affects output, income, employment, interest rates, and prices (Ajudua, Ojima, & Osmond, 2015). Irving Fisher's quantity theory of money provides a fundamental theoretical justification for the connection between money and the overall level of prices. The hypothesis proposed that, with other factors staying the same, when the amount of money in circulation rises, the price level likewise rises in direct proportion to the decline in the value of money. According to Ajudua, Ojima, and Osmond (2015), doubling the amount of money will likewise double the price level and cut the value of money in half. According to Ezeanyeji, Obi, Imoagwu, and Ejefobihi (2021), the quantity theory of money equation changed to the classical quantity theory of money with the idea that the money stock and the price level are proportionate. As a result, it can be thought of as a theory of price determination that holds that the amount of money is strictly proportional to the equilibrium price level.

2.3 Theoretical Framework

The Fisher's (1911) quantity theory of money, asserts that any alterations in money supply will result in a corresponding change in general price level. The theory posits that price of goods and services will be directly proportional to the quantity of money in circulation. This implies that when the federal government and financial institutions give out grants and loans to farmers, it will boost food production in the country thereby forcing the prices of food stuffs to fall vice-versa; hence ensuring food security. Summarily, the theory postulated that the quantity of money supply to farmers determines the cost of food stuff in the market. This theory of money finds its roots in the well-known identity that serves as its starting point.

$$MV=PY \quad (1)$$

Where: M = money supply, V = velocity of money in circulation, Y = real national output, and P = aggregate price level. From equation (1), another equation can be as follows:

$$P=MV/Y \text{ or } V=PY/M \quad (2)$$

Equation 2 illustrates the existence of a direct proportional relationship between the general price level of goods and services, and money supply, assuming velocity and output remain constant. This proportionality relationship implies that any permanent increase in money supply will inevitably result in an equal increase in the prices of goods and services, thus affecting the general price level. The Fisher's effect justifies the long-term relationship between monetary policy and price stability.

2.4 Empirical Review

Chileya, Kawimbe, Saidi, and Muya (2024) used the ARDL and ECM regression approaches to empirically evaluate the relationship between Zambia's food inflation and monetary policy from 2016 to 2023. The results showed a strong correlation between food inflation and monetary policy measures. In particular, there was a destabilising correlation between food inflation and the monetary policy rate and the expansion of the broad money. Additionally, food inflation increased as a result of exchange rate depreciation. The need for a stern policy action to reduce the inflationary pressure from depreciating exchange rates was recommended.

Ukpe, Djomo, Olayiwola, and Osayi (2020) used the food production index, a measure of food security in Nigeria from 1985 to 2016, to examine how fiscal and monetary policies affected food security. The results of the Vector Error Correction Model (VECM) analysis showed that only government spending had a significant positive impact on the food production index in the short term. In the long term, however, the exchange rate had a positive impact on the food production index while government spending on agriculture, inflation, and interest rates had a negative impact. The study advocated increased budgetary allocation to agriculture in line with the Maputo agreement.

Using commercial banks' loans to the agricultural sector (CBLA), federal government recurrent expenditure on agriculture (FGRE), and the agricultural credit guarantee scheme fund (ACGSF) as explanatory variables and the agricultural contribution to GDP as the dependent variable, Yusufu and Ogboru (2018) conducted a comparative study of the effects of credit and government spending on agricultural output in Nigeria from 1981 to 2016. ACGSF significantly impacted agricultural output and, consequently, food security in Nigeria, whereas CBLA and FGRE had no discernible effect on agricultural output, according to the results of the two-stage least squares regression approaches used. Reducing the bureaucracy involved in accessing the ACGSF so as to enhance and sustain access to the funds was recommended.

Ajudua, Ojima, and Osmond (2015) investigated the relationship between monetary policy variables and agricultural sector output from 1986 to 2013 in order to determine how monetary policy affected food security in Nigeria. Nigerian agriculture sector performance indicators and monetary policy indicators were revealed to have a substantial long-term association using the ordinary least square (OLS) regression technique. More specifically, when the money supply increased, agricultural output increased, but when interest rates and monetary policy rates increased, agricultural output decreased. The study recommended effective utilization of funds allocated to the agricultural sector.

3.0 METHODOLOGY

This paper utilized secondary data sourced from the CBN Statistical Bullentin, the National Bureau of Statistics (NBS) and the World Development Indicator (WDI). Data were obtained on food inflation, Monetary Policy Rate (MPR), Interest Rate (INTR), Broad Money Supply (M2), agricultural loan under the Agricultural Credit Guarantee

Scheme (AGCGS), Treasury Bill Rate (TBR) and Exchange Rate (EXR) spanning from 1986 to 2023. 1986 as the base year is deliberately chosen to explore how monetary policy has fared from the era of the structural adjustment programme (SAP) while the terminal year (2024) is to ensure that the work addresses current realities regarding food security. The causal research design was adopted to analyzed how monetary policy indicators impact on food security indicator.

3.1 Model Specification

Following the theoretical framework in section 2, and adapting the empirical work of Ameji, Elisha, Adofu and Gimba, (2023); variables namely; Food Inflation (FINF) as proxy for food security (dependent variable); Broad Money (M2) as proxy for money supply, prime lending rate of banks (INTR), Exchange Rate (EXCR), Monetary Policy Rate (MPR), Treasury Bill Rate (TBR), Federal Government Recurrent Expenditure on Agriculture (FGREA) and agricultural financing through the Agricultural Credit

Guarantee Scheme Fund (ACGSF) as independent variables were employed. The model is functionally specified as:

FINF= f(M2, INTR, EXCR, MPR, TBR, FGREA, ACGSF)

Econometrically, the model is stated as:

$$FINF = \delta_0 + \delta_1 InM2 + \delta_2 INTRt + \delta_3 InEXCR + \delta_4 MPR + \delta_5 TBR + \delta_6 FGREA + \delta_7 ACGSF + \varepsilon t \quad (10)$$

Where δ_0 is the intercept or autonomous parameter estimates for monetary policy; and, δ_1 to δ_7 are the coefficients of the independent variables, εt represents the error term and *In* is the natural logarithm notation.

On a priori expectation, the coefficients are symbolized as: INTR, MPR, FGREA, ACGSF >0; M2, EXCR, TBR<0

3.2 RESULTS AND DISCUSSION

Descriptive Statistics

To get a precise idea of the data employed in the study, a descriptive statistics was used to provide an informative summary of the data in terms of the mean, standard deviation as well as the minimum and maximum values. This is presented in Table 1.

Table 1: Descriptive Statistics

Variables	Mean	Maximum	Minimum	Std. Dev.
FINF	20.04130	76.75887	0.223606	17.31936
EXR	188.5598	1657.110	3.316600	282.4234
INTR	17.99803	29.80000	10.50000	3.969486
M2	14427.20	107200.5	27.38980	23037.09
MPR	14.23077	26.75000	6.000000	4.240463
TBR	14.29094	26.90000	4.500000	4.510569
FGREA	28.92899	110.2500	0.020000	30.46167
ACGSF	7081693.01	129000000	68417.40	20431230

Source: Authors Computation using E-views 12 (2024)

The descriptive statistics in Table 1 indicated that Food Inflation (FINF) from 1986–2024 had maximum and minimum values of 76.67% and 0.22% respectively. With a standard deviation of 17.32% and an average rate of 20.04% for the period, the data indicated a 2.72% divergence from both sides of the mean which implies consistency and absence of outliers in the data set. This suggests that the food inflation rate in Nigeria was fairly evenly distributed during the study period, resulting in a marginal variation in FINF rate that might be linked to Nigeria's current food security challenge. Exchange Rate (EXR) had minimum and maximum values of 3.32 and 1657.110 respectively, for the period which indicates the continuous depreciation the Naira over the years. The EXR average was 188.56, with a standard deviation of 282.42 meaning that there was a 93.86 point departure from both sides of the mean. Given that the standard deviation was found to be higher than the mean value, this implies a substantial fluctuation in the data set over the sample period which further confirms the continuous depreciation of the exchange rate, thus, a scenario of increased uncertainty in prediction of the exchange rate. With a magnitude of 14.03%, Prime Lending Rate (INTR) is widely spread from the mean, as indicated by its minimum and maximum values of 10.5% and 29.8%, respectively, and its mean value and standard deviation of 17.99% and 3.97%, in that order indicating a measure of consistency in the data set. Also, Broad Money Supply (M2) had maximum and minimum values of 107200.0 and 27.39 respectively. With a standard deviation of 23037.09 and an average value of 14427.20 for the period, the data indicated a significant 8609.89 divergence from both sides of the mean which implies that M2 is not normally spread over the years. Monetary Policy Rate (MPR) is relatively spread from the mean, as indicated by its maximum and minimum values of 26.75% and 6.00% respectively, and its mean value and standard deviation of 14.23% and 4.24% respectively. Treasury Bill Rate (TBR) ranged from 4.50% at the minimum to 26.90% at the maximum. Throughout the period, the average TBR was 14.29%, with a standard deviation of 4.51%, meaning that the data varied by 9.78% from the mean value. The fact that the standard deviation was less than the mean value suggests consistency in TBR during the study period. In addition, FGREA had maximum and minimum values of 110.2500 and 0.02 respectively. With a standard deviation of 30.46 and an average rate of 28.93 for the period, the data indicated a 1.53 divergence from both sides of the mean which implies consistency and absence of outliers in the data set. Finally, ACGSF is widely spread from the mean, as indicated by its maximum and minimum values of 129000000 and 68417.40 respectively, and its mean value and standard deviation of 7081693.01 and 20431230 respectively.

3.3 Unit Root Test Results

The Kwaitkowski-Philips-Schmidt-Shin (KPSS) was employed to test both the unit root and stationarity hypotheses of the data set, as it gave a better result than both the Augmented Dicky-Fuller (ADF) and Philips-Perron tests. The test was conducted at the 5% level of significance and the result is presented in Table 2.

Table 2: Kwaitkowski-Philips-Schmidt-Shin (KPSS) Test Results

Variables	At Levels	At 1st Difference	5% Critical Value	Order of Integration
FINF	0.284798	0.300495	0.463000	I(0)
EXR	0.710487	0.443337	0.463000	I(1)
INTR	0.474968	0.146073	0.463000	I(1)
M2	0.455028	0.381799	0.463000	I(0)
MPR	0.150696	0.117365	0.463000	I(0)
TBR	0.134960	0.086480	0.463000	I(0)
FGREA	0.713339	0.313281	0.463000	I(1)
ACGSF	0.589733	0.327737	0.463000	I(1)

Source: Authors Computation using E-views 12 (2024)

The KPSS test results in Table 2 indicated that when the variables were tested at levels, FINF, M2, MPR, and TBR were stationary (I(0)). After first differencing, EXR, INTR, FGREA and ACGSF were found to be stationary (I(1)). Hence the null hypothesis of no unit root (stationarity) was accepted at the 5% level of significance. With this scenario, the Johansen cointegration test is not applicable. Thus, the adoption of the Autoregresssive Distributed Lag (ARDL)/ Bounds test is justified since there are mixed order of integration (I(0); I(1)) (Ogwuche, 2021). The ARDL/Bound test was utilized to ascertain the existence of a long run relationship among the variables. The result of the ARDL/Bound test is presented in Table 3.

Table 3: ARDL Bound Test Result

Test Statistics	Value	K
F-statistic	7.890130	7
Critical Value Bounds		
Significance	I(0) Bound	I(1) Bound
10%	1.92	2.89
5%	2.17	3.21
2.5%	2.43	3.51
1%	2.73	3.9

Source: Author's computation using E-views 12 (2024).

Table 3 revealed that the calculated F-statistic (7.89) is greater than the critical upper bound I(1) value (3.21) at the 5% level of significance, hence the conclusion that there is co-integration. Thus, the null hypothesis of no long-run relationship is rejected at the 5% level of significance. This implies that, there is long-run effect of monetary policy on food security in Nigeria within the study period. To further estimate the effect of monetary policy indicators in Nigeria, the results of the estimation of the independent variables on the dependent variables of both the short and long run dynamics are presented in Table 4.

Table 4: Long-run and Short-run Estimates of the ARDL Model

Cointegrating Form				
Variable	Coefficient	Standard Error	t-Statistics	Probability
C	35.79995	36.61349	0.977780	0.3388
FINF(-1)	-0.927326	0.143514	-6.461574	0.0000
INACGSF(-1)	-6.286774	3.481838	-1.805591	0.0847
INEXCR	0.137978	8.011290	0.017223	0.9864
INFGREA(-1)	-12.27870	4.046028	-3.034754	0.0061
INM2(-1)	12.05472	5.661203	2.129356	0.0447
INTR	-0.510033	0.695121	-0.733733	0.4709
MPR	-1.532832	0.926808	-1.653884	0.1124
TBR(-1)	1.551586	0.754826	2.055554	0.0519
D(FINF(-1))	0.563273	0.139647	4.033531	0.0006
D(INACGSF)	6.571292	5.132033	1.280446	0.2137
D(INFGREA)	-6.459500	2.999680	-2.153397	0.0425
D(INM2)	36.15975	16.66193	2.170202	0.0411
D(INM2(-1))	21.08861	18.82794	1.120070	0.2748
D(TBR)	0.024946	0.727822	0.034274	0.9730
ECM_{t-1}	-0.927326	0.094237	-9.840397	0.0000

EC = FINF - (-6.7795*INACGSF + 0.1488*INEXCR -13.2410*INFGREA + 12.9994*INM2 -0.5500*INTR -1.6530*MRP + 1.6732*TBR + 38.6055)				
Variable	Coefficient	Std. Error	t-Statistics	Probability
INACGSF	-6.779461	3.474399	-1.951262	0.0639
INEXCR	0.148791	8.648590	0.017204	0.9864
INFGREA	-13.24097	4.880221	-2.713190	0.0127
INM2	12.99943	5.504386	2.361650	0.0275
INTR	-0.550004	0.779084	-0.705962	0.4876
MPR	-1.652959	1.074615	-1.538187	0.1383
TBR	1.673182	0.875865	1.910320	0.0692
C	38.60555	37.87321	1.019336	0.3191
R-squared	0.836168			
Adjusted R-squared	0.731912			
Durbin-Watson stat	2.072762			

Source: Author's Computation, extracted from E-views 12 (2024)

The ARDL model is estimated using automatic selection of maximum lag of 2 and Akaike information criteria in selecting the optimum lag order of (2, 1, 0, 1, 2, 0, 0, 1). Table 4 presents the statistics. The short-run analysis revealed that, a 1 unit appreciation of the exchange rate enhanced food security by 13.8%. In the lagged period ACGSF negatively affected food security by 62.9% while in the present period, ACGSF rate increases food security issue by 65.7%. FGREA negatively affected food security both in the lagged and present periods by 12.3% and 6.5% respectively. M2 positively and significantly impact food security both in the lagged and present periods by 12.1% and 36.2% respectively. Also, a unit increase in prime lending rate (INTR) worsens (negatively) food security by 51%. In the same vein, a 1% change in MPR negatively impact food security by 15.3%. In addition, an expansionary open market operation as proxy by the treasury bill rate will positively affect (improve) food security by 15.5% and 2.49% in the lagged and present periods respectively. Furthermore, coefficient of error correction term (ECM_{t-1}) is -0.927326, is correctly signed and significant at 1% level; indicating that short-run

disequilibrium, is adjusted at the 92.7% every year through changes in the independent variable. The Adjusted R-squared of 0.731912 revealed that monetary policy indicators accounted for 73.19% systematic variation in food security while the error term accounts for 26.81%. This implies that the model has a good fitness. Also, the Durbin Watson statistic being approximately 2 (2.072762) indicates no autocorrelation in the model (Ezie & Ezie, 2021).

In the long run, ACGSF impacted food security negatively. Thus, a 1 % increase in the fund worsens food security by 67.8%. This is however insignificant from the p-value been 0.0639. The implication of this finding is that funds under the ACGSF has not been properly channeled to increase agricultural output over the years or that other factors such as insecurity has affected the expected outcome of the scheme. This finding is at variance with that of Yusufu and Ogboru (2018). Exchange rate was found to have a positive relationship with food security such that a 1% appreciation of the exchange rate enhances food security by 14.9%. This is consistent with a priori expectation and corroborates the findings of Chileya, Kawimbe, Saidi, and Muya (2024). This further agrees with Akpan (2021), that the higher the exchange rate in terms of the home currency, the higher the domestic price level and invariably the higher the food insecurity incidence. A weaker currency/higher exchange rate increase the costs of imported food, particularly for a highly import dependent country such as Nigeria. This reduces food accessibility and affordability which negatively affects food security. This result is statistically insignificant as shown by the p-value 0.9864 (seen to be greater than 0.05).

The long run coefficient of FGREA had a negative effect on food security. Hence, a percentage increase in FGREA worsens food security by 13.2%; implying that FGREA has not addressed food security challenges over the years. This finding is inconsistent with a priori expectation but is in agreement with Yusufu and Ogboru (2018).

Also, broad money supply (M2) was found to have a positive and statistically significant effect on food security. This finding is in line with a priori expectation based on the quantity theory of money. Specifically, a unit increase in money supply will increase food prices, thus, straining food security by 129.9%. Increase in money supply will manifest in rise in food prices, hence food security can deteriorate. On the other hand, increase in money supply and enhance access to credit by farmers, will enable them to invest in better technology and agricultural practices that can increase food production, thereby improving food security. The work of Ajudua, Ojima and Osmond (2015) who found that money supply had a positive impact on agricultural output (food security) is consistent with this finding.

Furthermore, the coefficient of prime lending rate (INTR) was found to be negative (-0.550004) and statistically insignificant (0.4876 p-value). Specifically, a 1% increase in interest rate will worsen food security by 55% within the period under investigation; while a 1% reduction in interest will enhance food security by same percentage. For instance, an expansionary monetary policy which involves lowering interest rate is expected to stimulate investment in agriculture and food production. This can enhance food security by increasing food supply and reducing prices. The work of Ukpe, Djomo,

Olayiwola, and Osayi, (2020) who found that interest rate negatively affected food production index and food security corroborates this finding.

In addition, the result of the monetary policy rate revealed a negative relationship with food security such that a 1% increase in MPR worsens the effect of food security by 165.3%. This finding is statistically insignificant given the p-value 0.1383. Furthermore, a 1% change in expansionary open market operation on the average as captured by the coefficient of Treasury bill rate increases food security by 167.3% and this is statistically insignificant given the p-value 0.0692. This finding is consistent with the fact that an expansionary monetary policy invariably increases the volume of money in circulation and enhances affordability of food.

Table 4: Diagnostic Test Result

Test	F-statistic	Prob. Value	Obs*R-squared	Prob. Value
Breusch-Godfrey Serial Correlation LM Test:	1.178357	0.3283	3.900324	0.1423
Breusch-Pagan-Godfrey Heteroskedasticity Test:	0.559122	0.8681	9.709936	0.7831

Source: Author's Computation, extracted from E-views 12 (2024)

From Table 4, the probability values for the Breusch-Godfrey Serial Correlation LM test and the Breusch- Pagan-Godfrey Heteroskedasticity test (0.3283) and (0.8681) are respectively greater than 0.05, hence the null hypotheses of no serial correlation and heteroskedasticity are accepted.

5.0 CONCLUSION AND RECOMMENDATIONS

This study has established that monetary policy indicators have a long run effect on food security in Nigeria. Based on the finding, it concluded that monetary policy indicators under the period of investigation have not significantly address the food security challenge in Nigeria. Notable monetary policy indicators such as agricultural credit, exchange rate, interest rate, monetary policy rate and Treasury bill rate reported statistically insignificant effect on food security; while federal government recurrent expenditure on agriculture as well as broad money supply had statistically significant effect on food security in Nigeria. This suggestively implies that the monetary policy authorities have not effectively factor food security concern into its core operation. Thus, this study recommends prioritizing efforts toward the exchange rate of the naira in order to enhance food security. Also, funds allocations in the federal government recurrent expenditure on agriculture as well as the agricultural credit guarantee scheme should be properly monitored towards their intended purposes.

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Service Quality Delivery in Prenatal Services and Patient Satisfaction in Public Health Institutions in Minna Metropolis, Niger State

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Abstract

Patient satisfaction in prenatal services is a critical issue in public health institutions, yet the role of service quality dimensions in shaping satisfaction remains unclear. This study examines the impact of four key service quality dimensions—tangibles, reliability, responsiveness, and empathy—on patient satisfaction in prenatal care at public health institutions in Minna Metropolis, Niger State. Using a sample of pregnant women, statistical analysis was conducted to assess the significance of each dimension. The results indicate that tangibles (physical facilities, equipment, and staff appearance) had a negative but statistically insignificant impact on satisfaction (path coefficient = -0.047, p = 0.364). In contrast, reliability (the ability to deliver consistent and accurate services) had a positive and significant effect (path coefficient = 0.179, p = 0.001). Responsiveness (prompt service and willingness to help) negatively influenced patient satisfaction (path coefficient = -0.303, p = 0.034), suggesting delays or inadequate responses reduce satisfaction. Empathy (care and understanding from healthcare providers) had a positive and significant impact (path coefficient = 0.372, p = 0.051). The findings highlight that while tangibles are less critical, responsiveness and empathy are decisive in enhancing patient satisfaction. The therefore recommends that the Public health institutions in Minna should prioritize improving healthcare providers' responsiveness and empathetic behavior to enhance the overall quality of prenatal care services.

Keywords: Service quality delivery, prenatal services, public health Institution and patient satisfaction.

1.0 Introduction

Patient satisfaction in public health institutions, particularly in maternal healthcare services such as prenatal and postnatal care, remains a critical challenge. In Nigeria, pregnant women often experience dissatisfaction due to inadequate healthcare infrastructure, long waiting times, insufficient medical personnel, and poor service delivery. These issues not only affect their healthcare experiences but also contribute to poor maternal and infant health outcomes. The World Health Organization (WHO, 2021) has identified poor service quality, lack of access to skilled healthcare providers, and inadequate facilities as key factors exacerbating maternal mortality in sub-Saharan Africa.

Recognizing these challenges, governments and policymakers have made various efforts to improve maternal healthcare services. Initiatives such as the Midwives Service Scheme (MSS), increased budgetary allocations for maternal health, and the establishment of more healthcare centers aim to address these shortcomings. Additionally, prior research (e.g., Sadeghi et al., 2018; Choudhury and Tripathi, 2020) has highlighted the importance of service quality dimensions—such as reliability, responsiveness, and empathy—in enhancing patient satisfaction. However, despite these efforts, patient dissatisfaction persists due to gaps in service delivery, inadequate implementation of healthcare policies, and continued infrastructural deficiencies.

Thus, ensuring effective service quality delivery in maternal healthcare remains a pressing concern. This study seeks to explore how key service quality dimensions—tangibles, reliability, responsiveness, and empathy—impact patient satisfaction in prenatal services at public health institutions in Minna Metropolis, Niger State. By examining these factors, this study aims to provide insights that can guide improvements in service delivery and maternal health outcomes.

2.0 Literature Review

2.1. Conceptual Review

The quality of healthcare services significantly influences maternal and child health outcomes, particularly in prenatal and postnatal care. This review examines five key dimensions of service quality—Tangibles, Reliability, Responsiveness, Assurance, and Empathy—and their impact on patient satisfaction and healthcare effectiveness. Tangibles refer to the physical environment, cleanliness, medical equipment, and availability of essential maternal health resources (Parasuraman et al., 1988). A well-maintained healthcare setting fosters patient confidence, while poor infrastructure and inadequate medical equipment contribute to dissatisfaction and adverse health outcomes (Ameh et al., 2012). Reliability is the ability of healthcare providers to consistently deliver accurate, timely, and dependable services (Zeithaml et al., 1990). This includes skilled professionals, adherence to clinical protocols, and timely interventions. Inconsistencies in service delivery can negatively affect maternal health and increase mortality risks (Sadeghi et al., 2018). Responsiveness relates to the willingness of healthcare staff to assist and promptly address the needs of pregnant women (Parasuraman et al., 1988). Timely medical attention, proactive communication, and reduced waiting times enhance patient satisfaction and encourage healthcare utilization (Afulani et al., 2019). Poor responsiveness, such as long waiting times and dismissive attitudes, can significantly reduce patient trust in the healthcare system (Pillay et al., 2011). **Assurance** reflects the competence, professionalism, and credibility of healthcare providers, which instills confidence in patients (Zeithaml et al., 1990). Skilled and knowledgeable practitioners improve maternal healthcare experiences, while a lack of assurance can lead to fear, anxiety, and reduced healthcare-seeking behavior (Anwar et al., 2018). Empathy involves the level of care, understanding, and personalized attention given to pregnant women (Dagger et al., 2007). Healthcare providers who actively listen and offer emotional support contribute to a positive patient experience, encouraging adherence to medical recommendations (Sharma & Shukla, 2020). Women who feel understood and cared for by their healthcare providers are more likely to follow medical advice and report higher satisfaction with their care (Ogunjimi et al., 2019).

The conceptual framework for this study is built upon the Service Quality (SERVQUAL) model, which measures service quality across five key dimensions: tangibles, reliability, responsiveness, assurance, and empathy (Parasuraman et al., 1988). In the context of pre- and post-natal services, these dimensions can be adapted as follows: Tangibles, Reliability, Responsiveness, Assurance and Empathy:

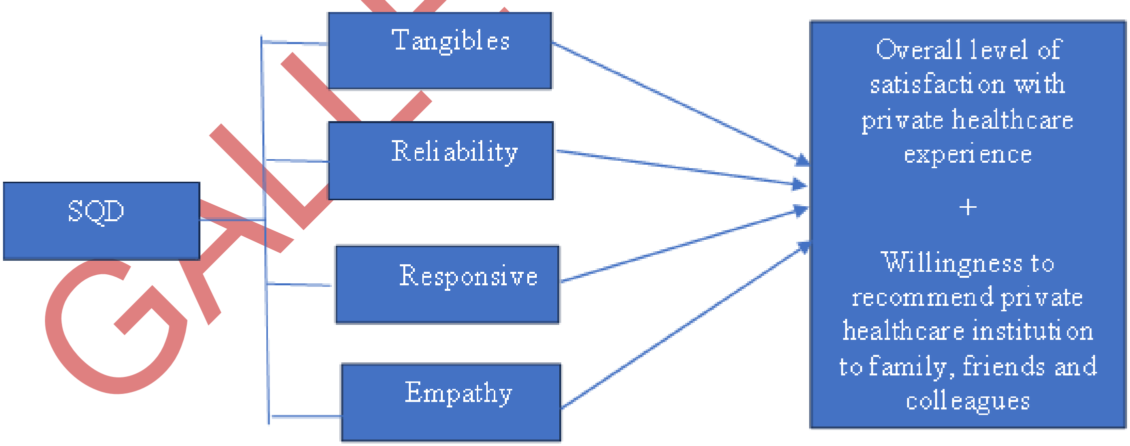

Figure 1: Study's Conceptual Framework
Source: Researcher's conception (2025)

Patients satisfaction, the dependent variable, is evaluated by assessing the overall experience of pregnant women with these service dimensions. A higher level of satisfaction is expected when service quality meets or exceeds patient expectations. The framework highlights the relationship between service quality and patients satisfaction, which is central to improving maternal health outcomes.

2.2 Theoretical Literature Review

Several theoretical perspectives underpin the relationship between service quality and patients satisfaction in healthcare settings. Amongst the lot, Consonance Theory most directly speaks to this study.

i. Consonance Theory

This was developed in 2017 by Bernado Oliver Arde, a registered nurse and scholar from the Philippines (Arde, 2017). The theory posits that patient satisfaction is the outcome of the level of congruence between the patient's expectations of the quality of care to be received in the hospital and the actual level of care received (Dinsa *et al.*, 2022). The level of congruence between expectations and actual experience is hypothesized to affect the patient's health outcomes and perceived quality of care received at the hospital (Dinsa *et al.*, 2022). The theory emphasizes the role nurses play in ensuring patient satisfaction, and suggests that a satisfied patient will be more likely to follow the instructions of the medical personnel and thus get better quickly while also recommending the healthcare institution to his circle of family, friends and colleagues thus increasing the patronage of the hospital and its revenue stream (Dinsa *et al.*, 2022).

The postulates of consonance theory best suit this study's conceptualization of patient satisfaction and is thus selected to underpin this study's theoretical framework. Specifically, patients have certain quality expectations of the public health institution they utilize in terms of physical facilities (tangibles), dependable services (reliability), prompt services (responsiveness) and individualized attention from the healthcare professionals (empathy). The extent to which these patients feel that these quality expectations are met will determine their level of overall satisfaction with the actual medical services received as well as affect their willingness to recommend the hospital to others.

2.3 Empirical Review

The study reviews the relevant empirical studies on four dimensions of service quality delivery and their impacts of patient satisfaction as outlined in the objectives of the study. A study by Akinmoladun and Oludare (2021) found that the physical environment and the availability of modern medical equipment significantly contributed to patient satisfaction among antenatal clients in public hospitals in Nigeria. This finding is consistent with previous research by Zeithaml et al. (2018), who emphasized the importance of physical evidence in healthcare settings. However, while Zeithaml et al. (2018) argued that tangibles are crucial for overall patient satisfaction, other studies (e.g., Adekeye et al., 2020) suggest that while tangibles are important, they might not be as significant as other service quality dimensions like reliability and responsiveness in influencing patient satisfaction. The reliance on tangibles as a primary determinant of satisfaction may overlook more subjective and personal aspects of care, which could be equally or more influential for pregnant women in pre-natal care settings. Therefore, while tangibles have an important role, they must be considered in conjunction with other service quality factors such as responsiveness and empathy to fully understand their impact on patient satisfaction. In the context of pre-natal care, reliability encompasses consistency in the provision of medical services, accurate diagnosis, and the regular availability of staff.

A recent study by Obembe et al. (2023) found a positive and significant relationship between the reliability of service delivery and patient satisfaction in public health institutions. This study suggests that when pregnant women receive consistent, accurate, and dependable services, their level of satisfaction increases. Similarly, studies by Ali et al. (2020) and Nwosu and Nwachukwu (2022) corroborate this finding, indicating that reliability in service delivery improves patients' overall satisfaction. However, in contrast to the findings of Obembe et al. (2023), some studies have found that reliability alone may not be sufficient to satisfy pregnant women if it is not accompanied by other dimensions such as responsiveness or empathy (e.g., Ogunyemi, 2021). This indicates that while reliability is a significant predictor of satisfaction, it should not be overemphasized to the exclusion of other service quality attributes. Therefore, to enhance patient satisfaction in pre-natal services, it is important to balance reliability with responsiveness and empathy, ensuring a holistic approach to service delivery.

On responsiveness, Raji and Tijani (2020) reported that responsiveness has a significant and positive effect on patient satisfaction in public health institutions in Nigeria, particularly for pregnant women in antenatal care. This finding aligns with the results from studies in other regions, such as those by Lee et al. (2021), who found that responsiveness significantly influenced patient satisfaction in South Korea's public health institutions. However, a study by Akintoye and Olatunji (2019) noted that the level of responsiveness in Nigerian public health institutions may vary greatly depending on the institutional resources and staff workload, suggesting that responsiveness can be constrained by factors such as insufficient staff and overcrowded healthcare facilities. Despite the positive association between responsiveness and satisfaction, the challenge remains in ensuring that responsiveness is consistently delivered, particularly in resource-poor settings. Therefore, increasing responsiveness in pre-natal services requires not only addressing institutional constraints but also training healthcare staff to prioritize timely and effective communication with pregnant women.

In furtherance to the above, Salihu et al. (2022) noted that empathy was found to be a significant predictor of patient satisfaction among pregnant women attending public health institutions. The study emphasized that empathetic interactions were essential for ensuring that pregnant women felt valued and supported throughout their antenatal visits. This aligns with previous research by Ferreira et al. (2020), who argued that empathy was a major determinant of satisfaction in healthcare services across different patient groups. However, a study by Olaoye et al. (2020) suggested that empathy alone might not be enough to ensure high levels of patient satisfaction, particularly when other factors like accessibility and service efficiency are lacking. While empathy is undeniably important, it must be combined with the other dimensions of service quality to create a more comprehensive service experience. For pregnant women in public health institutions, the integration of empathy with reliability, responsiveness, and tangible elements can significantly enhance overall satisfaction.

3.0 Methodology

The study employs survey research design because it is research approach allows the use of survey instruments to generate first-hand data to establish the relationship between service quality and patient satisfaction this research design befits the nature of this study because the study examines the impact of service quality and patient satisfaction and the required data for this study was generated from the field, hence the choice of survey research design (Bloomfield and Fisher, 2019).

3.1 Population and sample size of the Study

The population for this study is the total number of pregnant women who registered for antenatal service in the last nine months and patronized the Public health institutions in the study area (Minna metropolis). The total population of pregnant women registered in Minna Metropolis in the last nine months is 1005 (Niger State Hospital Management Board) Considering this study's survey approach, the sample size for the study using Taro Yemani formula is 338.

3.2 Method of Data Collection

A close-ended questionnaire (was employed to collect data using a ‘wait and collect’ approach to ensure that the selected pregnant and post-natal women fill the questionnaire immediately and return it to the researcher in one sitting to ensure a high response rate. The questionnaire has three sections, with Section A collecting demographic data (name of ministry/department/agency, name of public hospital or clinic, age group, marital status, and gender), section B collecting data on the four service-quality proxies (tangibles, reliability, responsiveness, and empathy) and section C collecting data on patient satisfaction. Sections B and C required respondents to indicate their level of agreement with the statements based on a five-point Likert scale, with 1 being 'strongly disagree' and 5 beings 'strongly agree'. The service quality and patient satisfaction items were adapted from (Ahmed *et al.*, 2017).

3.3 Method of Data Analysis

The study adopted a partial least squares structural equation modeling (PLS-SEM) approach to analyze the data. Due to its ability to estimate and evaluate a full conceptual model rather than just testing individual hypotheses, PLS-SEM offers numerous well-known advantages over other techniques like traditional regression analysis

3.4 Model Specification

The statistical model for this study's analysis is expressed as follows:

$$PS = bo + b_1Tan + b_2Rel + b_3Res + b_4Emp + £\ldots\ldots (3.1)$$

(adapted from Dam and Dam (2021) considering its coverage of the study's variables)

$$PS = \beta_0 + \beta_1 T + \beta_2 R + \beta_3 Re + \beta_4 E + \mu\ldots\ldots (3.2)$$

Where PS = Patient Satisfaction; Tan = Tangibles, Rel = Reliability, Res = Responsiveness, Emp = Empathy, μ= Error term. β_0 = constant or the value of the dependent variable when all the predictor variables are zero (0) β_1 - β_4 = the estimated regression coefficient of predictor variables.

4.0 Results and Discussion

4.1 Table 1.0 : Distribution of Selected Public Health Institutions in Minna Metropolis and Number of Women Registered for Prenatal Services in the last 9 months

WARD(MINNA METRPOLIS)	**CLINIC/HOSPITAL /PRIMART HEALTH CARE CENTRE (PUBLIC HEALTH INSTITUTIONS)**
Limawa 'A' Ward	Family Support Program Primary Health Clic
Limawa 'A' Ward	Old Airport Road Clic
Makera Ward	Minna General Hospital
Nassarawa 'B' Ward	Police Clic Minna
Nassarawa 'C' Ward	Anguwan Biri Primary Health Care
Nassarawa 'C' Ward	Autabarde Primary Health Care
Nassarawa 'C' Ward	Tayi Health Clic (Chanchaga)
Sabon Gari Ward	A/Kuje UBE School Clic
Sabon Gari Ward	Abdulsalam Qtrs Clic

Tudunwada North Ward	Kanfanyi Primary Health Centre
Tudunwada North Ward	M.i wushishi clic
Tudunwada North Ward	Primary Health Care Centre Kafintela
Tudunwada South Ward	Primary Health Care Tunga
Tudunwada South Ward	Sauka Kahuta Primary Health Care
Tudunwada South Ward	Shakwata Primary Health Centre
Tudunwada South Ward	Tunga Sabon Titi Health Centre

Source: Author's field survey (2025)

4.2 Model Fitness

Table 2.0 Model Fit

Fit Index	Value
SRMR	0.065
Duls	0.084
Chi-Square	123.47 (p = 0.063)
RMSEA	0.072
GFI	0.88
AGFI	0.85

Source: Author's Fieldwork (2025)

Table 2.0 . presents the model fit indices as shown in the table all the indicators have moderate to high values indicating a model fit.

4.3 Table 3.0 VIF Multicollinearity statistics for inner model

Variable	Patients Satisfaction
Patients Satisfaction	
Empathy	1.924
Reliability	1.449
Responsiveness	1.995
Tangibles	1.284

Source: Author's Fieldwork (2025)

As shown in Table 3.0 , the Variance Inflation Factor (VIF) values for the predictor variables, namely Empathy, Reliability, Responsiveness, and Tangibles, about the outcome variable, patient satisfaction, are 1.924, 1.449, 1.995, and 1.284, respectively. It is worth noting that a statistical VIF value greater than 10 is generally considered indicative of collinearity issues, which can lead to challenges in estimating the distinct impact of each predictor on the outcome variable. However, in this specific analysis, the obtained VIF values are all below 5, indicating that collinearity is not a concern in the presented data. Consequently, the model was able to accurately demonstrate the individual contributions of each predictor variable to the outcome variable without any complications arising from collinearity.

4.4 Hypothesis Testing

Table 4.0 Summary of t-statistics and p-values for hypothesis testing

	Path Coefficient	Sample mean	Standard deviation	t statistic	p values	Remark
Tangibles - patients Satisfaction	-0.047	-0.048	0.052	0.907	0.364	Accepted
Reliability - patient Satisfaction	0.179	0.186	0.056	3.216	0.001	Rejected
Responsiveness - Patient satisfaction	-0.303	0.299	0.069	4.368	0.034	Accepted
Empathy - Patient satisfaction	0.372	0.372	0.058	6.42	0.051	Accepted

Source: Author's Fieldwork (2024) (Note: *Significant at $p \leq 0.05$)

4.5 Discussion of the Results

In Table 4.0 Tangibles do not affect patient satisfaction in public health institutions in Minna Metropolis, Niger State. The sample mean of the predictive variable "Tangibles" in the original data is -0.047. The study determined that there is no statistically significant relationship between "Tangibles" and "Patients Satisfaction." This conclusion is supported by multiple factors: the t-statistic (0.907) is relatively small, the path coefficient is negative (-0.047), and the p-value (0.364) exceeds the common significance level of 0.05. As a result, the null hypothesis was accepted, leading the study to conclude that "Tangibles" do not have a statistically significant impact on patient satisfaction in public health institutions in Minna Metropolis, Niger state.
The finding reveals that tangibles do not affect patient satisfaction in public health institutions in Minna Metropolis, Niger state, this indicates that the public health institutions are yet to achieve the optimal expectations in terms of modern equipment required, appealing facilities, and professional appearance required of health workers. This finding is in contrast with the study of Ahmed *et al.* (2017) on patent satisfaction in Iran.

The predictive variable "Reliability" has a sample mean of 0.179 in the original data. The study found that the relationship between "Reliability" and "Patient Satisfaction" was statistically significant with a t-statistic of 3.216, a path coefficient of 0.179, and a p-value of 0.001. the null hypothesis was thus rejected and the found a statistical relationship between reliability and patient satisfaction in public health institutions in Minna Metropolis, Niger state.

The finding on Reliability revealed a positive relationship between reliability and patient satisfaction in public health institutions in Minna Metropolis, Niger state. The positive and significant relationship between reliability and patient satisfaction in public health institutions in the Minna metropolis suggests that pregnant women place a high value on consistent and dependable healthcare services. This finding is consistent with the study of Ahmed *et al.* (2017) in the healthcare sector and Pakurár *et al.* (2019) in the Jordanian banking sector; reliability deepens the trust of customers in service delivery by their service provider, and this subsequently enhances the satisfaction of customers and sustained competitive advantage.

On Responsiveness, the study found that the relationship between "Responsiveness" and "Patients Satisfaction" was statistically insignificant with a t-statistic of 4.368, a path coefficient of 0.303 and a high p-value (less than 0.034). the study thus accepts the null hypothesis and reject the alternative which states that there is a statistical relationship between responsiveness and patient satisfaction in public health institutions in Minna Metropolis, Niger state. The findings revealed a negative statistical relationship between responsiveness and patient satisfaction in public health institutions in Minna Metropolis, Niger state. This finding is not consistent with the study of Ahmed *et al.* (2017); and Nahida-Afroz (2019) in private clinics. Patient satisfaction can be achieved through the willingness of service providers to hasten services to meet patient needs in the most timely manner.

The predictive variable "Empathy" has a sample mean of 0.372 in the original data. The study found that the relationship between "Empathy" and "Patient Satisfaction" was statistically insignificant with a t-statistic of 6.42, a path coefficient of 0.372, and a very high p-value of 0.051. Based on this, the study accepts the null hypothesis and establishes that Empathy has an insignificant statistical effect on patient satisfaction in public health institutions in Minna Metropolis, Niger state.

The finding revealed a positive statistical effect of empathy on patient satisfaction. The positive but insignificant relationship between empathy and patient satisfaction in public health institutions in the Minna metropolis implies that customers are not highly valued and have less empathetic interactions with healthcare providers. This finding suggests that health institutions that do not demonstrate a genuine understanding of patients' concerns, emotions, and individual needs are more likely not to contribute positively to overall patient satisfaction with antenatal services. This is consistnent with the study of Ahmed *et al.* (2017) in Iranian healthcre sector; Walsh *et al.* (2019) in haalthcare sector; Vencataya *et al.* (2019) in te banking industry.

5.0 Conclusion and Recommendations

5.1 Conclusion

The study concludes that the practice of quality service delivery and its dimensions, namely Empathy, Reliability, and Responsiveness, have demonstrated a significant explanatory effect on patient satisfaction in relation to antenatal services in Minna Metropolis. The findings show that out of the four variables, only Reliability was found to be statistically significant because the patient believe that the government hospital has more qualified and reliable health workers (doctors and nurses). Further, variables such as tangibles (hospital facilities), reliability and are weak resulting in a lack of confidence in the services of public health institutions. Cleanliness of environments, care, and professionalism in handling patients especially pregnant women on antenatal are essential to satisfaction.

5.2 Recommendations

Based on the findings, the study recommends that all public health institutions implement a framework to assess their physical components and conduct periodic evaluations of the tangible components. .

All public health institutions listed should ensure a robust system for efficient scheduling procedures that minimize waiting times for patients. This could include optimizing appointment booking processes, utilizing electronic systems for scheduling, and maintaining clear communication channels with patients regarding appointment confirmations and changes.

Public health institutions should ensure the engagement of qualified personnel and establish training and development programs that prioritize empathic communication skills, active listening, and the ability to empathize with patients to better comprehend their concerns and emotions.

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Effects of Capital and Current Health Expenditure on Economic Growth in Sub-Saharan Africa

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Abstract

Improving the health outcomes in Africa is challenged by insufficient investment both from the private and public sectors. Most governments of African countries find it difficult to allocate at least 15% of their yearly budget to the health sector as recommended by the World Bank. The relationship between health spending and growth in the economy of Sub-Saharan Africa was investigated. The data was collected for 46 countries and estimated through the GMM procedure. In the short run, a percentage change in CHE GDP is related to (11.4% and 24.28%) rise in economic growth at a 1% significance level for the difference GMM-1 and GMM-2 steps results. Similarly, a percentage rise in CAH GDP is accompanied by a 123.2% rise in short-term economic growth. In the short run, a percentage change in CHE_GDP and LCHE PC is accompanied by a rise in economic growth at a 5% significance level according to the system GMM-1 and GMM-2 step results. The difference GMM-1 and GMM-2 steps result suggests that a percentage change in capital health spending is related to a (1.97% and 0.71%) rise in LGDP PC in the long run at a 10% and 5% level of significance. Higher spending on health will drive economic growth in both the short and long term. The government should be incentivized to invest more in these projects.

Keywords: GDP Per Capita, Economic Growth, General Method of Moments (GMM), Public Spending.

1. Introduction

Economic growth in Sub-Saharan Africa is influenced by various factors, and healthcare expenditure is a critical determinant. In any economy, spending on healthcare as well as the impact of spending on the performance of the economy are vital elements to look out for. Boosting GDP is not achievable when healthcare spending is poor (Raghupathi & Raghupathi 2020). Current and capital expenditures are the two primary forms of government spending, according to Ogboru (2010). Purchases of goods and services, salaries, subsidies, and current grants and wages, particularly to productive industries, are all included. Capital expenditures are essentially investments in the acquisition of land and the production of fixed assets, buildings, and intangible assets that are projected to boost the economy's long-term productivity. Both capital and current health expenditures have been employed to improve health outcomes and boost economic productivity. However, the region's economic growth, measured by Gross Domestic Product (GDP) has not realized the desired impact.

According to Wagner's theory of government expenditure, a functional relationship exists between government activity growth and economic growth, with the governmental sector growing faster than the economy. In 2016, the global health budget was US$7.6 trillion, which grew to US$7.8 trillion in 2017. WHO reported that for the first time in five years, global health spending increased slower than GDP in 2016 (World Health Organization, 2020). As more investment is required to keep up with the needs of preserving the population's excellent health, compared to the economy, the health sector has not stopped developing. Global expenditure from 2000- 2017 raised in real terms by 3.9 % per year, while the economy grew annually by 3.0 %. The specific objective of this study is to examine the effects of capital and current health expenditures on economic growth in Sub-Saharan Africa, exploring why these investments have failed to yield the expected growth outcomes in Sub- Saharan Africa from 2000 to 2019 using panel data analysis.

2. Literature Review

2.1 Conceptual review

2.1.1 Health Expenditure

Health expenditure consists of all expenditures or outlays for medical care, prevention, promotion, rehabilitation, community health activities, health administration and regulation and capital formation with the predominant objective of improving health. Health expenditures include expenditures on health functions such as medical education and training, and research and development. Health expenditure can result in better provision of health opportunities, which can strengthen human capital and improve productivity, thereby contributing to economic performance. It is therefore important to assess the phenomenon of healthcare spending in a country. Healthy people are assets to a country; therefore, a good medical care system is required. Healthier people are more productive. Healthy people are required to improve a nation's growth.

WHO (2013) stated that the importance of health as a key aspect of development and economic wellbeing of individuals and nations is increasingly being recognized in the world. This can be seen from a series of reforms taken by African countries to increase investments in health in order to meet the Millennium Development Goals (MDGs) of combating diseases, reduce child mortality and improving maternal health. African leaders have expressed this trust through actions such as the 2001 Abuja Declaration on an increase in government funding for health by allocating 15% of the government budget to the health sector, the 2006 Addis Ababa Declaration on community health in the African Region and the 2008 Ouagadougou Declaration on primary health care and health systems in Africa. Current expenditure is the sum of expenditures on all health goods and services, except for health capital. Recurrent expenditures are payments for consumptions that are incurred yearly, which are non-refundable. They include wages and salaries, purchases of goods and services, and current grants and subsidies, especially in the productive sectors like the health sector. (World Bank,2022). Capital Health Expenditures is total public health expenditure minus recurrent spending from government (central and local) budgets, external borrowings and grants (including donations from international agencies and nongovernmental organizations), and social (or compulsory) health insurance funds (WHO, 2021).

2.1.2 Life Expectancy and Population growth rate

According to the United Nations Development Programme, (UNDP, 2023). Life expectancy at birth indicates the number of years a newborn infant would live if prevailing patterns of mortality at the time of its birth were to stay the same throughout its life (UNDP, 2023)**.** Higher health expenditure mostly leads to a better access to medical care, improved disease prevention, and higher quality of life. This decreases mortality rates and increase life expectancy by addressing health issues more effectively. On the other hand, Population Growth Rate is the annual increase(decrease) in population, expressed as a percentage of the total population accounting for births, deaths and migration. Annual population growth rate for year t is the exponential rate of growth of midyear population from year t-1 to t, expressed as a percentage. Population is based on the de facto definition of population, which counts all residents regardless of legal status or citizenship. Increased health spending lowers infant and maternal mortality, leading to higher survival rates.

2.1.3 Economic Growth

The growth of an economy can be defined as the rise in the worth of the goods and services produced by an economy over time. Such growth is measured as the percentage of rise in real total GDP. It can also be simply defined as a rise in the sum of goods and services formed per head of the population compared from one period of time to another. Increasing the worth and magnitude of the factors of production which consist of Land, Labor, Capital and Entrepreneurship will improve the growth of an economy (Loizides & Vamvoukas, 2005). The Keynesian school of thought in Macroeconomics suggests that government spending speeds up economic growth. Kurt (2015) posited that the health level of the people and the level of economic growth and development are mutually interrelated. When there is economic growth and development, health conditions are better and hence a healthier population. Thus, the amount of labor available will be on the increase as there will be lesser loss to death or ill-health.

Ogboru (2010) detailed that the best general method to quantity the growth of economy is real Gross Domestic Product (GDP), and is defined as the entire value of goods and services formed in an economy and real GDP because of the adjustment to remove effects of inflation. GDP can be quantified either by the amount of what is procured in the economy using the expenditure method or by returns received on what is formed using the income method or the value-added approach. The expenditure method characterizes total demand (the demand for all goods and services in an economy) and can be separated into imports and exports, investment, and government spending. What is formed in the economy can be separated into services, durable goods, structures, inventories and nondurable goods. GDP sums only final output of goods and services, not the production of intermediate goods or the value of labor in the chain of production to avoid double counting (adding the value of output to the GDP more than once).

2.2 Theoretical Framework

2.2.1. Keynesian Theory of Government Expenditure

The fractional dynamics of national income are described by the generalization of economic growth models connected with the Keynesian model. The classic dynamic model of growth supports the theoretical understanding of the association between growth and spending. In this model, Keynes acknowledges that household income is a key predictor of spending; if people had more money, they would buy more goods and services, raising aggregate demand. Increased government spending, meanwhile, improves aggregate demand and consumption. These connections constitute an important part of the overall macro model.

In the standard dynamic Keynesian model with continuous time,

$$E(t) = C(t) + I(t) + G(t) \tag{1.3.1}$$

Where,

$Y(t)$ is a national income; $G(t)$ is the government expenditure; $C(t)$ captures the consumption expenditure; $I(t)$ describes the investment expenditure. All the variables describe the dynamics of the expenditure parts of the economy where $E(t)$ is a total expenditure, i.e. $E(t)$ is defined as the total of all expenditures. In dynamic equilibrium;

$$Y(t) = E(t) \tag{1.3.2}$$

In equation (1.3.2), the balance equation establishes the equality of the national income to the sum of all expenditures as,

$$Y(t) = C(t) + I(t) + G(t) \tag{1.3.3}$$

In the model, it is assumed that the consumption expenditure in period t depends on the income level in the same period. The consumption expenditure $C(t)$ is regarded as an endogenous variable equal to the amount of domestic consumption of some part of the national income and final consumption is independent of income. As a result, the consumption expenditure $C(t)$ is

described by the linear equation of the economic multiplier,

$$C(t) = a(t)Y(t) + b(t) \tag{1.3.4}$$

Where $a(t)$ is the multiplier factor that explains the marginal propensity to consume ($0 < a(t) < 1$), and the function $b(t) > 0$ is the autonomous consumption that is independent of income. The expression $a(t)Y(t)$ defines consumption that is independent of income. In the static model, the investment expenditure and government expenditure are considered as exogenous variables. As noted by Volgina, Golodnaya, Odiako, and Shuman (2014) in the dynamic Keynesian model, the investment expenditure $I(t)$ is treated as endogenous and it is assumed to depend on the level of income. The investment expenditure $I(t)$ is determined by the rate of change of the national income and it is the private sector expenditure. This assumption is described by the equation of the economic accelerator,

$$I(t) = u(t)Y^{(1)}(t) \tag{1.3.5}$$

where $u(t)$ is the rate of acceleration, which characterizes the level of technology and infrastructure.

$Y^{(1)}(t) = \frac{\partial Y(t)}{\partial t}$ is the first-order derivative of the income function $Y(t)$ with respect to the time variable.

Government expenditure $G(t)$ is the total government spending on infrastructure, health and education. As presented by Keynes, government spending is a critical factor driving aggregate demand. That means an increase in spending would increase demand. Also, Keynes argued that government spending was necessary to maintain full employment. On this note, many economies follow Keynes's Law aiming to automatically increase the economy in accordance with the growth of government expenditure through the multiplier effect (Lingxiao, Peculea and Xu, 2016). In the model, government expenditure $G(t)$, the propensity to consume $a(t)$, the rateof acceleration $u(t)$, and the autonomous consumption $b(t)$ are exogenous variables that are specified as external to the model and characterize the functioning and development of the economy (Tarasov & Tarasova, 2019). These variables, as functions of time, are assumed to be given. The purpose of the dynamic model is to explain the behavior of the national income as measured by Gross Domestic Product (GDP) relative to the aggregate expenditure. For this, it is necessary to find the national income $Y(t)$, as a function of time t. Substituting the multiplier Equation (1.3.4) and the accelerator Equation (1.3.5) into the balance Equation (1.3.3)yields equation (1.3.6):

$$Y(t) = a(t)Y(t) + b(t) + u(t)Y^{(1)}(t) + G(t) \qquad (1.3.6)$$

Overall, it should be emphasized that while both Keynes and Wagner's Laws describe the long-run association between government spending and growth of the economy, Keynes classified public spending as an external component that results in the growth of the economy rather than an internal phenomenon (Lingxiao, Peculea, and Xu, 2016). Devarajan, Swaroop, and Zou (2006), have utilized this idea and conducted a systematic assessment of the link between the mix of public expenditures and economic development. This study, which is based on this theory, specifies the link between the variables of interest in the following sub-section.

2.3 Empirical Review

Okoye, et al. (2019) investigated the relationship between capital government expenditure and economic growth in Nigeria using the Auto-regressive distributed lag (ARDL) to see how much government spending influences output growth. The research is based on data collected between 1981 and 2017. The study found that lagged current expenditure had a considerable short-run negative influence on economic growth. It also showed that lagging capital investment had a considerable beneficial impact on growth. However, there is no evidence of a long-run influence of government spending on economic growth within the scope of this study. This suggests a pattern of government spending in Nigeria that is unsustainable.

According to Ogunleye (2014), health is a type of human capital and a vital aspect in the economic growth process. As a result, health production is a key factor in determining health outcomes. Between 1995 and 2014, Aboubacar and Xu (2017) looked at the relationship between health-care spending and economic growth in Sub-Saharan Africa. The results were estimated using the system's General Method of Moments (GMM) approach. The results show that there is a positive and statistically significant association between the two variables, indicating that health spending has a major impact on the region's economic growth.

Kuhn and Prettner (2016) investigated the implications of a labour-intensive healthcare industry in the context of an R&D-driven growth model with overlapping generation. Health care increases longevity and labor participation/productivity. Even if the provision of health care diverts labor from productive activities, it may still fuel R&D and economic growth if the additional wealth that comes with expanding longevity translates into a more capital/machine intensive final goods production and, thereby, raises the return to developing new machines. Mild conditions under which an expansion of health care beyond the growth-maximizing level is Pareto-improving was examined.

Asiedu, Agyemang and Frempong (2020) examined the effect of health expenditure on economic growth in Ghana and Rwanda (1995-2018) using the Autoregressive Distributed Lag (ARDL) model and found a long-run positive relationship between capital health spending and economic growth. Due to strong governance, the short-run impact was also significant bin Rwanda.

Wu et al. (2021) applied the quantile-on-quantile approach to investigate the influence of the quantiles of healthcare on the quantiles of the economy's growth for pooling forty countries in the Asian region. As the quantile of healthcare expenditure increases in the countries, the impact of healthcare expenditure on the economy's growth does not guarantee an increase. The positive and negative effects of healthcare expenditure on developing the economic relationship will repeatedly occur when the quantiles of the economy's growth increase in the countries. One implication is that the governments should account for problems such as corruption, bureaucracy, underinvestment, and inefficiency in health-related resource utilization

Ogunleye and Olayemi (2022) examined how current health expenditure affects economic growth across 20 sub-Saharan countries using the Generalized Method of Moments (GMM) and found a positive association with economic growth though it was statistically insignificant.

3. Methodology

The General Method of Moments (GMM) estimation technique was used and the data covered the period 2000-2019 for forty-six countries in sub-Saharan Africa and the data was derived from the ministry of health and World Bank Database.

3.1 Model specification

In this study and in line with the specific objective of examining the effects of capital and current health expenditure on economic growth in Sub-Saharan Africa, one main regression model was specified and estimated. The model in its functional form is given as;

$Y_i = f(X_i)$; Y_t= vector of dependent variables while Y_t= vector of independent variables

More specifically, the model in its functional form is given as;

GDP_PC = *f* (CAH, CHE, GE, LEB, PGR)

However, the model is specified in empirical form as;

$\ln GDP_{it} = \beta_0 + \beta_1 \ln CAH_{it} + \beta_2 \ln CHE_{it} + \beta_3 \ln GE_{it} + \beta_4 \ln PGR_{it} + \beta_5 \ln LEB_{it} + \varepsilon_{1it}$

"α_s" represent the coefficients of the regression equation, "α_0"is the constant and "ε_{1it}"is the error term where; GDP is Gross domestic product capturing economic growth, CAH is capital expenditure on health, CHE is current expenditure on health, LEB is the life expectancy at birth and (PGR).is the population growth rate.

H0: There is no significant relationship between health expenditure and economic growth in Sub- Saharan Africa

4. Results and Discussion

Table 1: Short-Run differenced & system (GMM-1 & GMM-2) Dynamic Panel Data Estimation

LGDP_PC	Diff GMM_1	Diff GMM_2	Sys GMM_1	Sys GMM_2
LGDP_PC	0.880821 (9.77)***	0.102634(1.8)*	0.9390674(24.51)***	0.949265(15.79)***
LCHE_PC	-0.00994 (1.07)	0.114031(3.19)***	0.0000657(0.31)	0.063877(2.1)**
CAH_GDP	0.0051271(1.99)**	1.232401(2.63)**	-0.0004719(-0.03)	0.005322(0.51)
CHE_GDP	0.114031(3.19)***	0.242854(2.01)***	0.0070565(2.17)*	0.002064(0.25)
LGE	0.065221(0.065)	1.210781(0.38)	0.0139169(0.47)	-0.06661(-1.24)
PGR	0.000387(0.10)	0.000387(0.1)	0.008859(0.61)	0.001359(0.21)
Hansen Prob	0.346	0.254	0.415	0.129
Sargan test	25.06	2.97	25.33	18.47
Sargan Prob	0.093	1.000	0.088	0.297
Hansen test	26.39	18.16	17.59	22.44

AR (1) test	-2.68	-1.42	-1.66	-1.46
AR (1) P-value	0.007	0.007	0.096	0.144
AR (2) test	-1.32	-1.16	-0.82	-0.97
AR (2) P-value	0.185	0.248	0.411	0.331
No. of Instruments	21	21	23	22
No. of Observations	222	222	241	243

*** p<0.01, ** p<0.05, * p<0.1

Source: Author's Computation

Short-Run Effect of Capital and Current Health Expenditure

The *table 1* shows the effect of capital health expenditure and current health expenditure on economic growth using the generalised methods of moments. The result contains two difference equation and two system equation.

Estimation of Short-Run differenced GMM-1 and GMM-2 Dynamic Panel Data

For the difference GMM-1 step results in the short run, it is evident that a percentage change in capital health expenditure is accompanied by a 0.5% rise in economic growth at a 5% level of significance, everything being equal. Hence, capital health expenditure as a percentage of GDP (CAH_GDP) exhibits a direct relationship with GDP_PC. In the same short run, a percentage increase in current health expenditure as a percentage of GDP (CHE_GDP) is accompanied by an 11.4% rise in economic growth at a 5% significance level, everything being equal. This result shows that current health expenditure (CHE_GDP) and GDP_PC have a direct relationship, which indicates that a 1% change in current health expenditure (CHE_GDP) results in a less than 1% change in real gross domestic product (GDP_PC). The result also shows that the probability value of AR (1) is 0.007, which is significant as expected, while the probability value of AR (2) is 0.185. It shows that the AR of order 2 is not significant, which means that there is no second-order serial correlation and this implies that the lag of the dependent variables used as instruments is not endogenous. The probability of the Hansen (0.346) is not significant and indicates that the instruments are good. In summary, an increase in current and capital government spending on health will improve economic growth in Sub-Saharan Africa in the short run. This finding supports Jamison (2006), who argued that in economic crises, **health investments** are keys to economic recovery. Equally, **WHO (2017)** has documented that **health expenditures** contribute to **poverty reduction** in Sub-Saharan Africa**.**

For the difference GMM-2-step result, in the short run, it is evident that a percentage change in capital health expenditure CHE_GDP is accompanied by a 24.2854% rise in LGDP_PC at all levels of significance, everything being equal. Hence, current health expenditure on economic growth exhibits a direct relationship. In the same short run, a percentage increase in capital health expenditure (CAH_GDP) is accompanied by a 123.24% rise in economic growth at a 5% level of significance, everything being equal. Hence, capital health expenditure and economic growth (CHE_GDP) have a direct relationship. Also, in the short run, a percentage change in current expenditure per capita is accompanied by 11.4031% rise in economic growth, everything being equal. The result also shows that the probability value of AR (1) is 0.007, which is significant as expected, while the probability value of AR (2) is 0.248. It shows that the AR of order 2 is not significant, which means that there is no second-order serial correlation and this implies that the lag of the dependent variables used as instruments is not endogenous. The probability of the Hansen (0.245) is not significant and it indicates that the instruments are good. In summary, an increase in current and capital government spending on health and current expenditure per capita will improve growth in the economy of Sub-Saharan Africa in short term. This result support OECD (2019) and World Bank (2014), that documented that countries that invest more in healthcare tend to experience **sustained economic growth**, especially when health expenditure is effectively allocated to improve overall population health.

Estimation of Short-Run system GMM-1 and GMM-2 Dynamic Panel Data

The system GMM-1-step result shows that a percentage change in current health expenditure CHE_GDP is accompanied by a 0.70565% rise in the growth of the economy in the short term at a 10% level of significance, everything being equal. The result also shows that the probability value of AR (1) is 0.096, which is significant as expected, while the probability value of AR (2) is 0.411. It shows that the AR of order 2 is not significant, which means that there is no second order serial correlation. The probability of the Hansen (0.415) is not significant, which indicates that the instrument set is good. In summary, an increase in current government spending on health will improve economic growth in Sub-Saharan Africa in the short run. This result supports OECD (2019) that when governments increase health spending, they can improve public health outcomes, reduce the burden of disease, and enhance the workforce's productivity, which directly stimulates economic growth.

The system GMM-2-step in table 1 shows that CHE_PC has a positive and significant relationship with LGDP_PC at the 5% level of significance, which implies that a percentage increase in current health per capita (LCHE_PC) in the short run is accompanied by a 6.38% rise in real gross product at the 5% level of expenditure, everything being equal. The result also shows that the probability value of AR (1) is 0.144, which is insignificant, while the probability value of AR (2) is 0.331. It shows that the AR of order 2 is not significant, which means that there is no second order serial correlation. The probability of the Hansen (0.129) is not significant, which indicates that the instrument set is good. In summary, the increase in current expenditure per capita will increase economic growth in the long run. This finding support Mourougane, **et al (2016),** in their work, found that government spending on human capital (e.g., education and health) is linked to higher long-term growth. The finding equally supports IMF (2022) that public investment, particularly in education, healthcare, and infrastructure, plays a crucial role in boosting the potential output of an economy, as such spending can enhance human capital and improve the economic environment, fostering long-term growth.

Table 2: Long-Run differenced & system (GMM-1 & GMM-2) Dynamic Panel Data Estimation

LGDP_PC	Diff GMM_1	Diff GMM_2	Sys GMM_1	Sys GMM_2
LCHE_PC	-0.0446437(-1.29)	0.5001967(1.91)***		
CAH_GDP	0.0197648(1.82)*	0.0071757(1.93)**	-0.0077447(-0.03)	0.1048993(0.53)
CHE_GDP	0.0219994(1.65)*	-0.0413459(-2.09)**	0.1158081(2.18)	0.0406719 (3.64)***
LGE	0.4093573(1.67)*	0.2918282(1.83)*	0.2283985(0.51)	-1.312874(-0.61)
PGR	0.4093573(1.19)	0.0007203(0.05)	0.1453895(0.60)	0.0267943(0.18)

*** p<0.01, ** p<0.05, * p<0.1

Source: Author's Computation

Long-Run effect of capital and current health expenditure on economic growth

This section shows the long-run effect of capital and current health expenditure on economic growth using the Generalised Methods of Moments (GMM). It presents results of one-step and two-step difference and system dynamic panel data estimation

Long-Run difference GMM-1 and GMM-2 Dynamic Panel Data Estimation

Table 2 presents the result of the one-step long-run difference GMM panel data estimate. From the result, CAH_GDP, CHE_GDP and LGE are found to be positive significant at 10% level. The result of the difference GMM-1 step, in the long run, indicates that a percentage change in capital health expenditure is accompanied by a 1.97648% rise in

LGDP_PC at the 10% level of significance, everything being equal. Hence, capital health expenditure on LGDP_PC exhibits a direct relationship, indicating that a 1% change in capital health expenditure results in more than a 1% change in Real Gross Domestic Products (LGDP_PC). In addition, a one percent change in government spending has a larger positive effect on the LGDP_PC in the long run (1.97648%) than in the short run (0.5%). Also, in the long run, the result of the difference GMM-1 step indicates that a percentage change in current health expenditure is accompanied by a 2.19994 % rise in LGDP_PC at the 10% level of significance, everything being equal. Hence, current health expenditure on LGDP_PC exhibits a direct relationship, indicating that a 1% change in current health expenditure results in more than a 1% change in Real Gross Domestic Products (LGDP_PC). In addition, a one percent change in the current health expenditure has a lesser positive effect on the LGDP_PC in the long run (2.19994%) than in the short run (11.4%). Furthermore, in the long run, a percentage change in government expenditure is accompanied by a 40.93573% rise in LGDP_PC at the 10% level of significance, everything being equal. Hence, government expenditure on LGDP_PC exhibits a direct relationship, indicating that a 1% change in government expenditure results in more than a 1% change in Real Gross Domestic Products (LGDP_PC). In addition, a one percent change in government spending has a larger positive effect on the LGDP_PC in the long run. In summary, an increase in government expenditure on health will improve economic growth in Sub-Saharan Africa in the long run. This finding support Bedir,(2016) and IMF (2016)**,** who reported that health spending, has a statistically significant positive effect on economic growth.

Table 2 presents the result of the two-step long-run differenced GMM panel data estimate. From the results, CHE_GDP, CAH_GDP, and LCHE_PC were found to be significant at a 5 per cent level of significance, while LGE was found to be significant at a 10 per cent level of significance. In the long run, the result of the difference GMM-2 step indicates that a percentage change in current health expenditure is accompaied by a 4.1 percent rise in LGDP_PC at a 5 percent level of significance, everything being equal. Hence, current health expenditure on economic growth exhibits an indirect relationship, indicating that a 1% change in public health expenditure results in a more than 1% change in Real Gross Domestic Products (LGDP_PC). Moreover, a one percent change in the current health expenditure on health has a more positive outcome on the LGDP_PC in the long-run period (4.13459%). Similarly, in the long run, a percentage change in capital health expenditure is accompanied by a 0.71757% rise in LGDP_PC at a 5% level of significance, everything being equal. Hence, capital health expenditure and economic growth exhibit a direct relationship, indicating that a 1% change in capital health expenditure results in a less than 1% change in Real Gross Domestic Products (LGDP_PC).

In addition, a one-percent change in capital health expenditure on health has a larger positive effect on the LGDP_PC in the short run (123.2401%) than in the long run (0.71757%). Also, in the long run, a percentage change in current health expenditure per capita is accompanied by a 50.01967% rise in LGDP_PC at a 5% level of significance, everything being equal. Hence, current health expenditure per capita on economic growth exhibits a direct relationship, indicating that a 1% change in capital health expenditure results in more than a 1% change in Real Gross Domestic Products (LGDP_PC). In addition, a one percent change in the current health expenditure per capita has a lesser positive effect on the LGDP_PC in the short run (11.4031%) than in the long run (50.01967%). Lastly, in the long run, a percentage change in government expenditure is accompanied by a 29.18282% rise in LGDP_PC at the 10% level of significance, everything being equal. Hence, government expenditure on economic growth exhibits a direct relationship, indicating that a 1% change in capital health expenditure results in more than a 1% change in Real Gross Domestic Products (LGDP_PC). In addition, a one percent change in the government expenditure has a larger positive effect on the LGDP_PC in the long run (29.18282%). In summary, an increase in government expenditure on health will improve growth in the economy of Sub-Saharan Africa in the long term. This finding supports I welunmor et al *(2014)* who found that increased spending on healthcare, specifically targeting major health crises like HIV/AIDS, led to improved long-term economic outcomes in African nations. This finding equally supports *IMF* (2014) that highlighted those health investments in Sub-Saharan Africa could contribute to long-term economic sustainability.

Long-Run system GMM-1 and GMM-2 Dynamic Panel Data Estimation

Table 2 presents the result of the one-step long-run system GMM panel data estimate. From the result, CHE_GDP, LPRHE_PC, LGE and PGR are found to have a positive insignificant while CAH_GDP is negative insignificant in the long run. Therefore, these variables do not have an effect on LGDP_PC in the long run. Table 2 also presents the result of the two-step long-run system GMM panel data estimate. As a result, CHE_GDP was found to have a positive and significant effect on LGDP_PC at all levels of significance. The result of the system's GMM-2 step, in the long run, indicates that a percentage change in current health expenditure is accompanied by a 4.06719% rise in gross domestic product at 1% level of significance, everything being equal. Hence, current health expenditure on economic growth exhibits a direct relationship, indicating that a 1% change in current health expenditure results in a more than 1% change in Real Gross Domestic Products (LGDP_PC). In addition, a one-percent change in the current government spending on health has a larger positive effect on the LGDP_PC in the long run.

The short run analysis of effect of capital and current health expenditure on economy growth shows that both capital and current health expenditure have a positive effect on economic growth in Sub-Sahara African countries. This finding is consistent with those of Okoye, et al. (2019) and Ejem and Ogbonna (2019) while the long run analysis of effect of capital and current health expenditure on economy growth shows that current health expenditure has a positive effect on economic growth. However, Iheanacho (2016) documented a negative and significant long run effect of capital expenditure on economic growth in Nigeria, while recurrent expenditure is the major driver of economic growth. In Cameroon, Mandiefe and Tieguhong (2015) show that investments in public health contributed to Cameroon economic growth only in the long run, from 1988 to 2013, indicating that public health investments boost economic growth in the long-run through efficient allocation of resources.

5. Conclusion and Recommendation

The short run analysis of effect of capital and current health expenditure on economy growth shows that both capital and current health expenditure have a positive effect on economic growth in sub-Sahara Africa countries. To summarize, the results show that an upsurge in current and capital government health spending will improve economic growth in Sub-Saharan Africa in the short term. An increase in current expenditure per capita will increase the growth of the economy in the long term. The short-term analysis of the effects of capital and current health expenditure on economic growth shows that both capital and current health expenditure have an increasing effect on economic growth in sub-Saharan Africa. The government is therefore encouraged to invest more in capital and current projects like research and development so as to improve on already existing technologies, which will in turn, enhance the well-being of the population in sub-Saharan Africa.

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Entrepreneurial Orientation as a Driver of SME Performance in Sokoto State, Nigeria

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Abstract

This study investigated the relationship between entrepreneurial orientation and SMEs performance in Sokoto State, Nigeria for a total sample survey of 389. The study employed Ordinary Least Square (OLS) for the analysis. The result from the empirical finding indicated that there is a positive and statistically significant relationship between innovation, risk taking, competitive aggressiveness and SMEs performance in Sokoto State, Nigeria. Other result revealed that there exists a non-significant relationship between proactiveness and the performance of SMEs in Sokoto state, Nigeria. The study concludes that on averagely Average entrepreneurship orientation (*innovation, risk taking, and competitive aggressiveness are determinants of SME performance in Sokoto state. The study recommends among other things the need for stakeholders and legislators to create a system for teaching prospective and seasoned business owners about entrepreneurship, with a focus on small and medium-sized enterprises, in addition to educating new entrepreneurs about the credit opportunities provided by the CBN.*

Keywords: *Entrepreneurial, orientation, innovativeness, proactiveness, risk taking, competitive aggressiveness. SMEs,*

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1. Introduction

The literature on entrepreneurial orientation and Small and Medium Enterprises (SMEs) performance is extensive and continues to grow. SMEs play a crucial role in the economic development of both developed and developing economies, contributing significantly to job creation, poverty reduction, and industrial growth. Their impact on economic growth and national development has made them a focal point of research and policy discussions (Yauri et al., 2008). Empirical studies indicate that SMEs contribute approximately 55% of GDP and over 65% of total job creation in high-income nations. In low-income countries, they account for 60% of GDP and over 70% of total employment, while in middle-income nations, SMEs contribute over 70% of GDP and 95% of total employment. For instance, in Pakistan, SMEs represent 90% of business ventures, contributing 40% to GDP and 30% of total exports (Zafar & Mustafa, 2017). Their role in poverty alleviation, employment generation, increased income levels, raw material supply, export earnings, and industrial capacity utilization is well documented (SMEDAN, 2013; 2017).

Recognizing the importance of SMEs, many developed and emerging economies have introduced policies to stimulate their growth and enhance their contributions to industrial development (Ikpor et al., 2017). SMEs are considered growth-supporting sectors that not only enhance living standards and indigenous capital formation but also drive innovation and competition in developing economies (SMEDAN, 2013). Despite their significant contributions, SMEs face numerous challenges, including limited access to finance, fluctuating consumer demands, technological disruptions, and intense global competition. Empirical evidence suggests that 80-85% of businesses worldwide are SMEs, yet many struggle to remain competitive due to these constraints (Mahar & Ghumro, 2020; Civelek, 2021; Alyafei et al., 2021). In developing economies, SMEs often lack a strong entrepreneurial orientation, which affects their ability to innovate, expand, and sustain long-term growth.

The primary challenge facing SMEs in developing economies, particularly in Sokoto State, Nigeria, is the ineffective implementation of policies that do not adequately address their specific needs. Although SMEs are recognized as crucial for economic growth, existing policies often lack a nuanced understanding of the entrepreneurial orientation necessary for their success, resulting in a disconnect between policy intentions and outcomes. Despite extensive research on the link between entrepreneurial orientation and SME performance, significant gaps remain in understanding how its multidimensional aspects interact in specific contexts. Current literature often treats entrepreneurial orientation as a single construct, obscuring the individual impacts of its dimensions, and there is limited empirical evidence from Sokoto State. To address these issues, this study proposes a mixed-methods approach that includes surveys and in-depth interviews with SME owners and stakeholders. This research will identify key dimensions of entrepreneurial orientation such as risk-taking, innovativeness, and proactiveness and evaluate their contributions to SME growth and sustainability.

By providing empirical evidence on these dimensions, the study aims to inform policymakers in developing targeted interventions that foster a supportive entrepreneurial environment. Ultimately, this research will enhance understanding of the relationship between entrepreneurial orientation and SME performance, contributing to more effective policy development that maximizes the potential of SMEs to drive economic growth in Sokoto State and beyond. In conclusion, while scholars generally agree that well-oriented SMEs perform better and adapt more effectively to globalization (Olubiyi et al., 2019; Basco et al., 2020; Kireeva, 2020; Muazu, 2020; Anwar et al., 2021; Ademosu & Morakinyo, 2021; Adeosun & Shittu, 2021), this study seeks to bridge the identified gaps and contribute valuable insights into the relationship between entrepreneurial orientation and SME performance.

2. Literature Review

2.1 Conceptual Review

2.1.1 Concept of Entrepreneurial Orientation

A significant body of research has explored the concept of Entrepreneurial Orientation (EO). Miller (1983) conceptualized EO based on three key dimensions: product-market innovation, risk-taking, and proactive innovation, defining an entrepreneurial firm as one that engages in innovation, undertakes moderate to high-risk ventures, and introduces new products or services ahead of competitors. Since then, EO has gained increasing relevance in entrepreneurship research, attracting both theoretical and empirical attention (Covin & Slevin, 1989; Covin et al., 2006). EO encompasses the strategic processes that guide entrepreneurial decision-making and actions within an organization (Lumpkin & Dess, 1996; Wiklund & Shepherd, 2003). Rooted in strategy literature, EO has been used to describe decision-making styles, organizational behaviors, and strategic practices that facilitate entry into new or existing markets with innovative products or services (Lumpkin & Dess, 1996; Wiklund & Shepherd, 2003; Walter et al., 2006).

Building upon Miller's (1983) original framework, Lumpkin and Dess (1996) introduced two additional dimensions—autonomy and competitive aggressiveness—to further refine the EO construct. Several studies (e.g., Kraus et al., 2005; Wiklund & Shepherd, 2005; Hughes & Morgan, 2007) have adopted the five-dimensional EO model, emphasizing how innovativeness, risk-taking, proactiveness, competitive aggressiveness, and autonomy influence organizational performance. Furthermore, Lumpkin and Dess (1996) proposed that these dimensions are not necessarily interdependent and may vary in their individual impact on firm success.

2.1.2 Concept of SMEs

Micro, Small, and Medium Enterprises (MSMEs) are increasingly acknowledged for their vital role in economic development. Their contributions extend beyond job creation, as they serve as engines of growth, fostering local capital formation, enhancing living standards, and driving innovation and competition, particularly in developing economies. Recognizing their significance, governments at various levels have implemented policies and initiatives to support their growth and sustainability. MSMEs are widely regarded as essential in achieving key socio-economic goals, including poverty alleviation, employment generation, and wealth creation (SMEDAN, 2013).

According to the Small and Medium Enterprises Development Agency of Nigeria (SMEDAN, 2021), MSMEs are classified based on their annual turnover and workforce size:

i. Micro Enterprises: Turnover ranging from ₦3 million to less than ₦25 million, employing 3 to 9 workers.

ii. Small Enterprises: Turnover between ₦25 million and less than ₦100 million, with 10 to 49 employees.
iii. Medium Enterprises: Turnover from ₦100 million to less than ₦1 billion, with a workforce of 50 to 199 employees.

Given their critical role in economic diversification and sustainable development, MSMEs remain a major focus for policies aimed at boosting productivity, competitiveness, and long-term economic growth.

2.2 Theoretical Framework

The Resource-Based View (RBV), initially introduced by Penrose (1959) and expanded by Barney (1991), posits that a firm's competitive advantage hinges on its ability to leverage valuable, rare, inimitable, and non-substitutable (VRIN) resources, rather than simply achieving market dominance. RBV classifies resources into physical, human, and organizational categories, with intangible assets like human and organizational resources offering strategic value (Godfrey & Hill, 1995; Balgobin, 2003). Entrepreneurial Orientation (EO) aligns with RBV by emphasizing risk-taking, innovativeness, and proactiveness, enabling firms to meet market demands and explore new opportunities. Building on RBV, the Knowledge-Based View (KBV) emphasizes knowledge as the key driver of competitive success (Grant, 1996; Pemberton & Stonehouse, 2000). KBV asserts that a firm's ability to integrate specialized knowledge among its members determines its organizational capabilities. It considers knowledge a critical strategic asset, suggesting that firms that effectively manage and apply knowledge can achieve superior performance (Miller, 2002). Theriou and Aggelidis (2009) identify two perspectives within KBV: one that views knowledge as a strategic resource and another that focuses on knowledge integration through organizational routines.

In contrast, the Dynamic Capabilities View (DCV) argues that simply leveraging resources is insufficient in dynamic environments (Teece et al., 1997). DCV emphasizes the need for adaptive capabilities that allow firms to respond quickly to changes through innovation and strategic flexibility. Teece et al. identify three core managerial processes: coordination/integration, learning, and reconfiguration/transformation, which help align competencies with market shifts. Unlike RBV and KBV, which focus on static resource ownership, DCV highlights the continuous evolution of capabilities through experience and trial-and-error learning. This study employs RBV, KBV, and DCV as its theoretical frameworks, each providing insights into how firms utilize resources, leverage knowledge, and adapt to sustain competitive advantage.

2.3 Empirical Review

The relationship between Entrepreneurial Orientation (EO) dimensions—Innovativeness, Proactiveness, Risk-taking, Autonomy, and Competitive Aggressiveness—and the performance of Small and Medium Enterprises (SMEs) has been extensively studied across various regions and industries, yielding mixed findings. Numerous studies confirm a significant positive relationship between EO dimensions and SMEs' performance: **Kusa et al. (2021)** in Poland found that Innovativeness, Proactiveness, and Risk-taking positively affected performance using Fuzzy-set

Qualitative Comparative Analysis (FsQCA). **Anwar et al. (2021)** in Germany reported superior performance in firms with high EO based on survey data analyzed with Partial Least Squares (PLS). **Kireeva (2021)** in Finland used Structural Equation Modeling (SEM) and found that all EO dimensions positively influenced financial performance among 325 firms. Studies in India (Kyal et al., 2021) and Pakistan (Fan et al., 2021) also affirmed positive associations between EO and various aspects of performance. Research in Nigeria (Ibrahim & Abu, 2020; Muazu et al., 2020; Egbe et al., 2020) consistently found that EO dimensions significantly enhance SMEs' performance, with similar results noted in studies from other African nations.

Some studies indicate that the effectiveness of EO dimensions can vary based on the context: **Slogar (2021)** in Croatia found that while Risk-taking positively impacted Innovativeness, Proactiveness and Autonomy had non-significant effects on performance. **Mahar and Ghumro (2021)** in Pakistan indicated that while Risk-taking, Autonomy, and Competitive Aggressiveness positively influenced performance, Innovativeness and Proactiveness did not. Certain studies reported mixed or non-significant relationships: In Nigeria, **Umar et al. (2019)** found that while Innovativeness and Proactiveness were crucial, Risk-taking had minimal impact. **Ibrahim & Abu (2020)** also noted a non-significant effect of Competitive Aggressiveness. **Idawati and Sumartini (2020)** in Indonesia and **Akhtar et al. (2015)** in Pakistan reported that key EO dimensions did not significantly impact SMEs' performance.

While the majority of empirical evidence supports a positive relationship between EO and SMEs' performance, mixed findings suggest that factors such as industry type, firm size, market conditions, and external environmental influences may affect EO's effectiveness. The review highlights the need for further research to explore these contextual factors and refine the understanding of how EO contributes to business success in varying environments. Methodological differences across studies (e.g., SEM, PLS-SEM, regression, FsQCA) may also account for variations in results, underscoring the complexity of the EO-performance relationship.

3.0 Methodology

This study used a quantitative approach, collecting data through a cross-sectional survey design, to answer research questions about variables used to explain, predict, and control phenomena. This approach ensures a broad and objective presentation of the study's findings. Primary data was used in the study, data was collected using a structure questionnaire with closed ended questions from the sample SMEs in Sokoto. The target population for this study consists of all registered SMEs in Sokoto State that are involved in various business activities, totalling 14,114 according to SMEDAN (2021). A simple random sampling technique will be used for the study. The study determined an appropriate sample size that represents the above-mentioned population, three hundred and eighty-nine (389) SMEs owners, managers and owners/managers in Sokoto state. The sample size was arrived at using Yamane's (1967) formula. According to the formula, for a 95% confidence level and with a margin error of 0.05 and the precision p of 0.5%, the sample size was arrived at using the following formula:

$$n = \frac{N}{1+N(e)^2} \quad \text{...} (3.1)$$

$$n = \frac{14114}{1+35.28} = \frac{14114}{36.29} = 389 \quad \text{..} (3.2)$$

This study employed econometric model with modification which is in line with the work of (Chua, 2019) this study will establish the relationship between the dependent and independent variables of the study using the functional relationship.

Y = f(x).. (3.3)

Where; *"Y"* represents the dependent variable (SMEs) and X will represent the independent variable (entrepreneurial orientation). The above production equation will be restated in order to incorporate the variable of interest.

PRF= f (INV, PAC, RST, CAG) .... (3.4)

Where; *"PRF"* is SMEs performance, *"INV"* connote innovativeness, *"PAC"* denote pro-activeness, *"RST"* is risk taking, and *"CAG"* denote competitive aggressiveness. The above equation will re-instate into mathematical model.

$$PRF_t = \beta_0 + \beta_1 INV_{t-1} + \beta_2 PAC_{t-1}\ \beta_3 RST_{t-1} + \beta_4 CAG_{t-1} \ \text{.......................} (3.5)$$

Where:"$\beta_1 - \beta_4$" is the coefficient of the parameters to be estimated, "$_t$ "denote the time varying factor. However, the mathematical model can be restated into econometric model, as follow:

$$PRF_t = \beta_0 + \beta_1 INV_{t-1} + \beta_2 PAC_{t-1}\ \beta_3 RST_{t-1} + \beta_4 CAG_{t-1} + \alpha_{t-1} \ \text{.................} (3.6)$$

Data collected from the administered questionnaire, was presented and analysed using both descriptive and inferential statistics with the help of Statistical Package for Social Sciences (SPSS), Eviews, and excel. The descriptive statistic includes the use of mean, media, and percentages, whereas inferential statistic such as OLS regression techniques and correlation test for analysis of the specifications. This method facilitates the evaluation of how variations in the independent variables influence the dependent variable. Consequently, the application of OLS regression in this study is well-suited for analyzing the relationships between the dimensions of entrepreneurial orientation and SME performance, providing both robustness and clarity in the findings.

4.0 Result and Discussions

4.1 Descriptive Statistics

This section presents the descriptive statistics on the relationship between entrepreneurial orientation and SME performance in Sokoto State, Nigeria. The results are summarized in Table 4.1 below.

Table 4.1: Descriptive Statistics

Varbs.	Mean	Media	Max	Min	Std.Dev.	Skew.	Kurt.	Obs
PRF	3.3856	4.0000	5.0000	1.0000	1.1376	-0.2580	2.0462	389
INV	2.9948	3.0000	5.0000	1.0000	1.0478	-0.0974	2.2487	389
PAC	2.8174	3.0000	5.0000	1.0000	1.0305	0.1296	2.2782	389
RST	2.9974	3.0000	5.0000	1.0000	1.0267	-0.1522	-0.1065	389
CAG	2.9048	3.0000	5.0000	1.0000	1.0787	-0.6659	2.1121	389

Source: Field Survey 2023, SPSS 20

Table 4.1 presents descriptive statistics on the relationship between entrepreneurial orientation and SME performance in Sokoto State, Nigeria. The findings indicate that SME performance has a higher average mean value (3.38) compared to entrepreneurial orientation dimensions—innovativeness (2.99), proactiveness (2.81), risk-taking (2.99), and competitive aggressiveness (2.09)—suggesting that SME performance is concentrated in the upper part of the distribution while entrepreneurial orientation variables are in the lower part. All variables exhibit a full range of responses, with maximum values of 5.0 and minimum values of 1.0. The standard deviations range from 1.02 to 1.13, indicating moderate variability, with SME performance showing the highest volatility (1.13).

In terms of skewness, SME performance, innovativeness, risk-taking, and competitive aggressiveness are negatively skewed, suggesting an approximately normal distribution, whereas proactiveness is positively skewed, indicating a right-skewed distribution. The kurtosis values for all variables are below 3, indicating a platykurtic (flatter-than-normal) distribution. These results suggest that the data distribution is relatively uniform without extreme peaks.

4.2 Reliability and Validity of the Research Instruments

The Cronbach Coefficient alpha was used to assess the instrument's reliability, with a minimum threshold of 0.70 suggested by Zikmund, Babin, Carr, and Griffin (2010). Higher values indicate increased reliability, as shown in tables 4.1 and 4.2.

Table 4.2: Results of the Reliability Test (Entrepreneurship Orientation)

S/N	Constructs	Cronbach’s Alpha	No of Items
1	Innovativeness	0.828	4
2	Proactiveness	0.799	4
3	Risk Taking	0.824	4
4	Competitive Aggressiveness	0.827	4

Source: Field Survey 2023, SPSS 20

Table 4.3: Results of the Reliability Test (SMEs Performance)

S/N	Constructs	Cronbach's Alpha	No of Items
1	Wider Market	0.760	5
2	Increased Products sales	0.734	5
3	Firm Profits Increase	0.727	5
4	Number of Employees Increased	0.740	5
5	Number of Customers Increased	0.745	5

Source: Field Survey 2023, SPSS 20

Tables 4.2 and 4.3 present the reliability results for the relationship between entrepreneurial orientation and SME performance in Sokoto State, Nigeria. According to Zikmund, Babin, Carr, and Griffin (2010), a minimum threshold of 0.70 for Cronbach's alpha indicates acceptable reliability. This implies that if the Cronbach's alpha value is equal to or greater than 0.70, the measurement instruments used in the study are considered reliable. Based on this criterion, Tables 4.2 and 4.3 demonstrate strong reliability, confirming the consistency of the constructs. Additionally, the results are statistically significant, considering the number of items used for each construct.

Table 4.4: Results of the Validity Test (Entrepreneurship Orientations)

S/N	Constructs	Components Factor	Average Factor Loading
1	Innovativeness	0.68	0.83
2	Proactiveness	0.75	0.84
3	Risk Taking	0.69	0.83
4	Competitive Aggressiveness	0.68	0.82
Kaiser-Mayer-Olkin 826 (0.000)			

Source: Field Survey 2023, SPSS 20

Table 4.5: Results of the Validity Test (SMEs Performance)

S/N	Constructs	Components Factor	Average Factor Loading
1	Wider Market	0.46	0.73
2	Increased Products sales	0.56	0.74
3	Firm Profits Increase	0.59	0.74
4	Number of Employees Increased	0.53	0.73
5	Number of Customers Increased	0.52	0.72
Kaiser-Mayer-Olkin 810 (0.000)			

Source: Field Survey 2023

Tables 4.4 and 4.5 present the validity results of the questionnaire used to examine the relationship between entrepreneurial orientation and SME performance in Sokoto State. The study assessed construct validity using both convergent and discriminant validity. The results from the convergent validity test indicate that all constructs are valid, as the average factor loading values exceed the recommended threshold of 0.70. Furthermore, the Kaiser-Meyer-Olkin (KMO) test confirms the adequacy and validity of the instrument, with a KMO value of 0.810, which is considered highly meritorious.

4.3 Inferential Statistics

This section deals with the results of the inferential statistics on the relationship between entrepreneurship orientation and SMEs performance in Sokoto state, Nigeria.

Table 4.6: Multicollinearity Test

Variables	PRF	INV	PAC	RST	CAG
PRF	1	0.49	0.45	0.56	0.45
INV	0.49	1	0.63	0.58	0.53
PAC	0.45	0.63	1	0.62	0.62
RST	0.56	0.58	0.62	1	0.54
CAG	0.45	0.53	0.62	0.54	1

Source: Authors Computation, Eviews 12

The correlation of the variable used in the model are demonstrated in Table 4.6 There are several ways in which the variables are connected to each other. The outcome showed that the parameters do not exhibit an excessive correlation as earlier suggested. More significantly, the coefficient value is extremely low, indicating a week correlation between dependents and independents variables. The estimated parameters do not exhibit multicollinearity, according to the empirical result of the Pearson correlation. This can be attributed to the fact that the multivariate coefficient values for all the variables used in the study are less than 0.7. Since there is no multicollinearity among the variables, the alternative hypothesis that there is multicollinearity among the variables under investigation is rejected. The null hypothesis, on the other hand, is accepted.

Table 4.7: Results of the Relationship between Entrepreneurship Orientations and SMEs Performance (OLS Regression Results)

Dependent Varb.: SMEs Performance				
Indp. Varb.	Coefficient	Std. Error	t-Statistics	P-Value
INV	0.2078	0.0605	3.4303	0.0007***
PAC	0.0076	0.0671	0.1146	0.9088
RST	0.4108	0.0611	6.7209	0.0000***
CAG	0.1583	0.1583	2.7844	0.0056***
C	1.0499	0.1618	6.4859	0.0000***
R^2 = 37, Adjusted R^2 = 37, F-Statistics = 58.0554, F- Statistic P- value (0.0000), Durbin Watson = 1.56				

Source: Author's Computation, Eviews 12, Note: Significant at 1 %(***), 5 %(**), 10 %(*)

Table 4.7 presents the results of the relationship between entrepreneurial orientation and SME performance in Sokoto State, Nigeria. The findings indicate a positive and statistically significant relationship between innovativeness and SME performance. Specifically, a 1% increase (or decrease) in innovativeness as a measure of entrepreneurial orientation leads to approximately a 0.20% increase (or decrease) in SME performance. This suggests that innovation is a key factor influencing the success of SMEs in Sokoto State. The findings align with the study by Bello, Bulus, Aisha, and Mansur (2023) and support the theoretical framework underlying this research.

Additionally, the results reveal a positive and statistically significant relationship between risk-taking and SME performance. A 10% increase (or decrease) in risk-taking corresponds to a 0.41% increase (or decrease) in SME performance. This implies that firms willing to engage in high-risk, high-return ventures tend to achieve better financial outcomes. The findings are consistent with those of Bello, Bulus, Aisha, and Mansur (2023), further reinforcing the theoretical foundation of this study. Furthermore, the empirical results indicate a positive and statistically significant association between competitive aggressiveness and SME performance. A 1% increase (or decrease) in competitive aggressiveness results in approximately a 0.15% increase (or decrease) in SME performance. This suggests that SMEs in Sokoto State that adopt aggressive competitive strategies are better positioned to enhance their performance. This finding also aligns with the study by Bello, Bulus, Aisha, and Mansur (2023) and supports the theoretical framework of this research.

However, the study finds no statistically significant relationship between proactiveness and SME performance in Sokoto State, indicating that proactiveness had no measurable impact on SME performance during the study period. This result is also in agreement with the findings of Bello, Bulus, Aisha, and Mansur (2023). The study concludes that an entrepreneurial mindset significantly enhances the performance of SMEs in Sokoto State, Nigeria. The analysis suggests that when entrepreneurial orientation factors are appropriately aligned, they can positively impact business success.

The regression analysis produced an R^2 value of 37%, indicating that 37% of the variations in SME performance are explained by the independent variables, while the remaining 63% are accounted for by factors not included in the model. This demonstrates a reasonable model fit for a primary dataset. The adjusted R^2 value of 37% confirms that the model can accommodate additional variables without a substantial decline in explanatory power. Furthermore, the F-statistic coefficient of 58.0554 (p-value = 0.0000) is statistically significant, indicating a strong overall relationship between the dependent and explanatory variables. At the 1% significance level, the F-statistic confirms the robustness of the model. Additionally, the Durbin-Watson statistic of 1.86 suggests no presence of autocorrelation among the variables, affirming the reliability of the results.

5.0 Conclusion and Recommendations

This paper examined the relationship between entrepreneurial orientation (EO) and SME performance in Sokoto State, Nigeria, using both descriptive and inferential statistical methods. The findings indicate that proactiveness, as a measure of entrepreneurial orientation, does not significantly predict SME performance. However, innovativeness, risk-taking, and competitive aggressiveness are strong predictors of SME success. The results demonstrate that entrepreneurial orientation plays a crucial role in shaping the performance of small and medium-sized enterprises. When EO factors are effectively aligned, they can positively influence business success. The study further reveals that an increase in entrepreneurial orientation leads to improved SME performance in Sokoto State. This underscores the importance of creativity, competitive drive, and self-sufficiency for entrepreneurs in achieving market success, rather than solely relying on risk-taking. Additionally, the study highlights the necessity for entrepreneurs to acquire the necessary knowledge, skills, and competencies to thrive in the business environment.

The paper recommends among other things the need for government and other stakeholders to implement structured programs to educate aspiring and experienced entrepreneurs on SME development. Given the significant impact of **innovativeness on SME performance**, the government should introduce innovation grants, research and development incentives, and technology transfer programs to encourage SMEs to adopt new products and processes.

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Intellectual Capital and Performance of Small and Medium Enterprise: A Systematic Review

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Abstract

There are evidence that Small and Medium Enterprises (SMEs) in developing economies are facing constraints due to failure at the early stage as well as lack of awareness about Intellectual Capital (IC) by SMEs owners. The research provides an in-depth analysis of intellectual capital and its impact on the performance of small and medium enterprises (SMEs). The study carried out a systematic literature review based on paper published on intellectual capital and SMEs between 2000 and 2024. 45 papers were downloaded from Web of Science (WoS) and others in the years under review. Out of it 20 papers were critically analyzed because those not reviewed were conducted in large enterprises such as banking industries, listed companies among others. The researcher findings showed that research using Nano businesses and family businesses that are closer to the populace were not examined. Also, research undertaking comparisons between IC in developed and developing economies and SMEs were underexplored. The findings indicate that intellectual capital positively affects SME performance, with human capital playing a significant role in fostering innovation and productivity. The study offers insight to researchers, policy makers as well as practitioners to assist as well as educate SMEs and sub sectors to place emphasis on intellectual capital that is driven by knowledge as well as information to enhance better performance of enterprises. The study thereby recommended that Ministry of Commerce and Industry, SMEDAN should create awareness on the need for SMEs owners to utilize IC for business growth, expansion and sustainability. The study further recommended for SMEs and policymakers to leverage intellectual capital effectively.

Keywords*: Intellectual capital, small and medium enterprises, systematic review, performance*

1.0 Introduction

Globally, intellectual capital (IC) is an evolving field of study in today's modern economy contributing significantly to innovation and sustainable competitive advantage of firms (Abdullah & Othman, 2019). It has been recognized and attracted researchers' attention due to the new economy powered by information and knowledge (Ojo & Adeyemo, 2024). Information is seen as an intangible and the value rested in the skills as well as the knowledge of people which are the intellectual capital of the enterprises (Ajike et al., 2016) while knowledge has become a key focus in corporate management, as enterprises recognize that value can be created through intangible assets, which are often not entirely reflected in financial statements (Adigizey et al., 2024). Ling et al. (2012) and Li et al (2020) maintained that enterprises with preeminent levels of intellectual capital emerged to gain a greater competitive advantage and organizational success. The vital determinants of sustainable growth and internal capability of an enterprises rested on its intellectual capital (Arshad et al., 2023). Hejase et al (2016) emphasized that intellectual capital is a contemporary human resources concept that has influenced business processes and plans. Bontis (1998) suggested that intellectual capital represents the collective knowledge embedded in individuals, organizational routines, and the network relationships within an organization. Stewart (1997) described intellectual capital as intellectual material, including knowledge, information, intellectual property, and experience, that can be used to generate wealth in an enterprises.

Small and Medium enterprises (SMEs) has been recognized as the driving force of nations' economic growth, job creation and development (Abdulganiyu & Gumi, 2021). Despite this importance, SMEs encountered challenges of failure at the early stages which has been attributed to the improper understanding as well as management of intangible assets (Muda et al., 2020; Aremu & Adeyemi, 2011). Bontis et al (2000) reported that enterprises only use 20% of the knowledge accessible to them. Available report also revealed that few SMEs are aware of knowledge based industries by optimizing their intellectual capital (Hariyono et al., 2024). Nabaz et al (2019) are of the opinion that SMEs problems are associated to lack of knowledge about intellectual capital by the business owners as well as people associated with the enterprises. Moreover, Hariyono et al (2024) emphasized that SMEs success depend not solely on skills acquisition and experience but also on knowledge management in enterprises where knowledge is the intellectual capital. Since, intellectual capital is now known as an element influencing organizational progress and sustainability then integrating it into business practices is believed to enhance SME performance, drive long term success and support government objectives. For sustained success, SMEs must leverage both tangible and intangible resources. IC furnishes SMEs with the ability to compete against larger firms, innovate and mitigate financial challenges. It is therefore germane for enterprises to recognize, manage as well as invest in intellectual capital in other to achieve long term success and maintain high performance which is needed for national growth. It has been considered that competitive advantage is germane for the growth as well as performance of an enterprises (Jardon et al., 2015) and that to build sustainable advantage, intellectual capital must be put into practice by small and medium enterprises. The study adopted systematic literature review (SLR) in order to offer a comprehensive overview of the current state of knowledge of intellectual capital on the performance of SMEs and provide insights into its usage.

2.0 Literature review

2.1 Intellectual capital

Intellectual capital is vital for sustaining the performance of SMEs, which are recognized as key contributors to national economic growth and GDP. Enhancing SME growth requires leveraging intellectual capital, as it represents the cognitive abilities of individual workers to uphold work systems by equipping them with essential skills, knowledge, and competencies to thrive in a competitive market. It can be referred to the intangible assets possessed by SMEs. As a result, it plays a crucial role in value creation, making it a key strategic asset for SMEs businesses. Nahapiet & Ghoshal, (1998) defined intellectual capital as the knowledge and capabilities of a social collective. Mukoro et al (2023) emphasized that intellectual capital comprises skills, abilities, and knowledge necessary for performing tasks that create economic value for the organization. Penrose (1959) recognized intellectual capital as a crucial factor in achieving competitive advantage for enterprises. Teece (2014) noted that intellectual capital also known as knowledge assets, business intelligence, or intellectual property is an infinite resource inherent in individuals, enabling manufacturing firms to gain a competitive edge and improve performance (Zott et al., 2011). According to Adigizey et al (2024), intellectual capital comprises the combined skills and experiences of an organization's members, integrated with information and resources to guide its growth and development. It has been considered that competitive advantage is germane for the growth as well as performance of an enterprises (Jardon et al, 2015) and that to build sustainable and competitive advantage, intellectual capital must be put into practice by small and medium enterprises. Moreover, it plays a crucial role in value creation, making it a key strategic asset for SMEs businesses.

2.2 Performance

The low performance of Nigerian firms despite investment in intellectual capital is a major concern (Adegbayibi, 2022). Performance serves as both a quantitative and qualitative measure to assess the extent to which an organization achieves its set goals. Performance is a key indicator of success. In essence, an organization's performance determines whether its goals are achieved or fall short. Evaluating a firm's performance requires both financial/non-financial and organizational perspectives. It is measured through various factors, including productivity, profitability, firm growth, customer satisfaction, retention, sales volume, internal business process, loyalty among others. According to Anindya et al (2021), financial performance reflects the efforts of the workforce in generating profits, which are essential for informed decision-making and thereby attracts investors to support enterprises. On the other hand, non-financial performance offers valuable insights into a business's long-term sustainability and overall health. Therefore, managing intellectual capital in small and medium enterprises can enhance both financial and non-financial performance which will lead to business success.

2.3 Intellectual Capital and SME Performance

It has been reported that SMEs perform a crucial role in the stability of the economy and national innovation (Bontis et al., 2015). Human expertise, organizational processes and innovation all encompasses in intellectual capital which driven business growth. Therefore, it is essential for decision-makers to recognize the strategic significance of intellectual capital to maximize its potential and improve performance within SMEs. Several studies highlight the positive correlation between intellectual capital and SME performance (e,g Adegbayibi, 2022; Ojo & Adeyemi, 2024; Abdulganiyu & Gumi, 2021; Hariyono & Narsa, 2024; Anik et al., 2021). It has been identified that IC components such as human capital serves as a critical driver of innovation and efficiency, structural capital enhances operational effectiveness, while relational capital strengthens market positioning and customer loyalty. SMEs that invest in IC will create a long term business growth through knowledge development that will further enhance better outcomes.

3.0 Methodology

A systematic review approach was employed to analyze the relationship between intellectual capital and SME performance. The methodology involved:

3.1 Research Design

This study adopted a quantitative method. It involves collection of data from literature search, analysis of secondary data from scholarly published paper and systematic literature review on intellectual capital and SMEs. Martins et al (2022) recognized that the usage of SLR allows literature review to be conducted systematically. Since intellectual capital in SMEs is a contemporary phenomenon, it is believe that a procedure that best deliver an assessment on the subject matter in an existing literature is through SLR.

3.2 Search Approach

Systematic literature review differs from traditional literature review in that it increases the transparency as well as the scientific process of literature review (Tranfield et al., 2003). Martins et al (2022) guidelines was inculcated to ensure the quality of the work. Electronic literature search was conducted using Web of Science (WoS) and other data base. Key words that reflected in the literature were identified. Search was limited to publications in English. The search period was set to 2000-2024.

3.3 Criteria procedure

To ensure appropriate paper selection, the following criteria were applied:

3.3.1 Inclusion Criteria procedure:

- Papers published from 2000-2024
- Study papers in English
- Research papers published in journals
- Research papers related to IC and SMEs

3.3.2 Exclusion Criteria procedure:

- Papers published before 2000 and after 2024
- Research papers in other languages
- Books, chapters as well as dissertation
- Research papers unrelated to the IC and SMEs (banking industry, oil and gas, listed companies)

3.4 Method of data collection

This study data collection involved retrieving relevant as well as original research papers. The study considered scholarly papers for review which were conducted across different nations.

3.5 Data Analysis

Data were analyzed using descriptive statistics such as table, bar chart, percentage and pie chart

4.0 Findings and Discussion

The study reviewed 20 papers that critically analyzed intellectual capital and performance of SMEs. The study revealed the crucial role that Intellectual capital play in order to improve the performance of enterprises. Information gathered from intellectual capital showed that the research were conducted across different locations both in developed and developing countries. It was discovered that most studies examined SMEs using different names and studies were carried out in different kinds of industries. This study findings identified that IC in SMEs is shaped by the interaction of the dimensions such rational, structural, human and technological. The research revealed a variation in IC and SMES performance with the highest study been carried out in Pakistan. Findings further showed that published articles on the study have not been carried out on cogent SMEs such as Nano, family businesses which could be risky when compared to the future needs of both developed and developing economies. Also, research undertaking comparisons between IC in developed and developing economies and SMEs were underexplored Finally, the study is limited to SMEs while banking industry, oil and gas, listed companies were excluded. The result cannot be generalized, there is need for further study in such areas excluded. Further, some results were presented based on number of author publications per countries, numbers of journals in each countries as well as the percentage which is shown in table 2. That is, the list of countries with their publications. It was revealed that out of 20 journals 4 were carried out in Pakistan which represents 20 percent, 3 journals in China and Malaysia, which represents 15 percent each, Nigeria as well as USA has 2 each which represent 10 percent for both countries while the other 6 countries has one each which represent 5 percent. Information extracted were sub divided as illustrated below:

Table 1: Some of the scholarly papers on intellectual capital and performance on SMEs are shown below with the intentions and references

Author	Year	Title	Place	Methodology	Outcomes
Arshad, Arshad, Lamsali, Alshuaibi, Alshuaibi, Albashar, Shakoor & Chuah	2023	Strategic resources alignment for sustainability: the impact of innovation capability and intellectual capital on SME's performance: moderating role of external environment.	Pakista n	Cross-sectional survey method & PLS-SEM(Smart-PLS 4.0)	The results show that the performance of SMEs is greatly influenced by their ability to innovate and the strength of their intellectual capital.
Liu, Zhang, Xu & Wang	2022	Intellectual Capital & Financial performance of Chinese Manufacturing Small and Medium Enterprises: An analysis from the perspective of different industry types	China	Panel data regression models analysis	The results indicate that intellectual capital enhances the financial performance of SMEs, with physical and human capital being the primary contributors.
Ahmad, Wu & Khattak	2022	Intellectual capital, corporate social responsibility and sustainable competitive performance of small and medium-sized enterprises: mediating effects of organizational innovation.	Pakista n	Survey research design & Structural equation modelling (SEM)	The study finds that intellectual capital and CSR positively impact SMEs' sustainable competitive performance, with organizational innovation acting as a mediator.
McDowell, Peake, Coder & Harris	2018	Building small firm performance through Intellectual capital development: Exploring innovation as the "black box'	USA	Survey research design & Pearson correlation coefficient.	Results indicate a positive relationship between two components of intellectual capital, human capital and organizational capital, and organizational performance.
Hashim, Osman & Alhabshi	2015	Effect of intellectual capital on organizational performance.	Malays ia	Pearson correlation and Multiple Regression	The results revealed that intellectual capital significantly influences organizational

				Analysis	performance in Malaysia.
Ajike, Nnorom, Kwarbai & Egwuonwu	2016	Intellectual Capital and Performance Sustainability of SMEs in Lagos Nigeria.	Nigeri a	Descriptive survey design & Simple linear regression analysis	Findings revealed a significant relationship between intellectual capital and the performance sustainability of small and medium-sized enterprises.
Muturi, Ombaka & Muchiri	2019	Relationship between intellectual capital & performance of small and medium manufacturing enterprises in Kenya.	Kenya	Descriptive survey and explanatory research design & descriptive statistics and inferential analysis.	The study findings show that intellectual capital had no significant impact on the performance of small and medium enterprises in Kenya.
Coder, Peake & Spiller	2017	Do High Performance Work Systems Pay for Small Firms? An Intellectual Capital Building Perspective.	USA	Survey research design and Descriptive statistics	The results showed that HPWS, through the development of intellectual capital, facilitates growth of both the top and bottom lines for small businesses.
Sharabati, Jawaal & Bontis	2010	Intellectual Capital & Business Performance in the Pharmaceutical sector.	Jordan	Survey research design & Pearson's bi-variate correlation	The results showed that the three sub-constructs of intellectual capital together have a positive and substantive association with business performance.
Zhang & Li	2024	CEO Intellectual capital, Dual innovation & Sustainable growth of small & medium sized	China	Qualitative research design	The findings reveal a significant positive relationship between CEO intellectual

		enterprises: Evidence from China			capital and sustainable growth of SMEs
Khalique, Bontis, AbdulNassir bin & Hassan Md Isa	2015	Intellectual capital in Small & medium enterprises in Pakistan.	Pakistan	Structured questionnaire and multiple regression analysis	The study's findings show that the overall regression model for intellectual capital demonstrates a good fit, while one component, human capital, was found to be insignificant.
Mukaro, Deka & Rukani	2023	The influence of intellectual capital on original performance.	Turkey	The research uses the Phillips Peron (PP), together with the Augmented Dickey–Fuller (ADF) techniques	This study highlights the role of debt and equity financing in boosting organizational performance while noting that long-term liabilities and intellectual capital reduce profitability.
Omotayo & Omiunu	2019	Intellectual Capital management & organizational performance of small and medium enterprises in Oyo state, Nigeria.	Nigeria	Survey research design &partial least squares-structural equation modelling (PLS-SEM)	The study found no significant relationship between the IC components (human capital, structural capital and relational capital) and performance of the SMEs.
Jianqiu	2022	A study of intellectual capital & innovation performance of small and medium sized technological enterprises in Guangdong province.	China	Survey research design	The intellectual capital of small and medium-sized technological enterprises in Guangdong Province has a significant role in promoting innovation performance.

Bontis, Chua & Richardson	2000	Intellectual capital and Business Performance in Malaysian industries	Malaysia	Survey research design & Partial Least Squares (PLS)	Findings reveals that human capital has a greater influence on how a business should be structured in non-service industries compared to service industries; customer capital and structural capital has a positive relationship with business performance regardless of industry
Tonial, Cassol, Selig & Giuglians	2018	Intellectual capital management & Sustainability activities in Brazilian organizations: A case study	Brazil	Qualitative and exploratory research design &Data were analyzed using the content analysis technique with the aid of Atlas.ti, version 8, qualitative software	The results showed that ICM-supporting routines foster new capabilities, enhancing all aspects of intellectual capital—human, structural, and relational.
Jardon & Catalina	2015	Intellectual capital as a source of growth in Subsistence Small Businesses in Latin America.	Latin America	Qualitative research design & Partial least squares(PLS)	The findings suggest that Subsistence small businesses can leverage intellectual capital dimensions for growth, though the effect is indirect.
Absah, Muchtar & Qamariah	2018	The effect of intellectual capital on Business Performance in Micro, Small and Medium	Medan	Quantitative, explanatory	The results indicate that intellectual capital positively and significantly impacts

		enterprise (MSME) in Medan city.		research design & Multiple regression analysis	business performance, with human, technological, and social capital also having a partial but significant positive effect.
Qurashi, Khalique, Ramayah, Buntis & Yaacob	2020	Impact of intellectual capital on innovation in pharmaceutical manufacturing SMEs in Pakistan.	Pakistan	Multiple regression analysis	Findings show that intellectual capital positively influences innovation in pharmaceutical SMEs in Karachi.
Shamsuddin, Khalit, AbdLatib, Abdulrahman & Raub	2015	The relationship between intellectual capital and firms' performance in the trading and service sectors in Malaysia.	Malaysia	Quantitative, explanatory research design & Spearman Rho statistical test	The results showed human capital efficiency and capital employed had a significant positive impact on performance, while structural capital efficiency showed no effect.

Table 2 Number of Countries per Publication

Authors	Country/Region	Percentage	Numbers
Arshad et al, Ahmad et al, Khalique et al & Qurashi et al	Pakistan	20%	4
Zhang et al, Liu et al & Jianqin H.	China	15%	3
Hashim et al, Bontis et al & Shamsuddin et al	Malaysia	15%	3
Ajike et al & Omotayo et al	Nigeria	10%	2
Mcdowell et al & Coder et al	USA	10%	2
Sharabati et al	Jordan	5%	1
Mukaro et al	Turkey	5%	1
Muturi et al	Kenya	5%	1
Tonial et al	Brazil	5%	1
Jardon et al	Latin America	5%	1

Absah et al Medan	5%	1

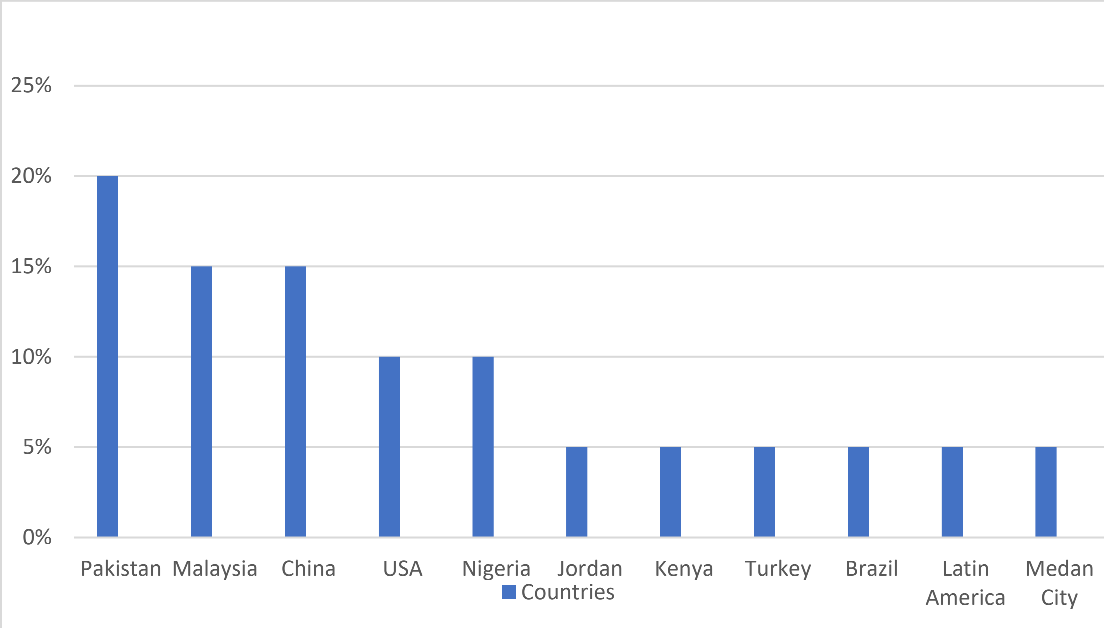

Figure 1: A chart showing the number of countries per publications and their percentages

The location of the selected journals by country is shown above. The country with most (20%) of the reviewed journals were in Pakistan. Also, 15 percent of the reviewed journal were carried out in China and Malaysia. In addition, 10 percent were conducted in USA and Nigeria. The least were 5 percent were carried out in Jordan, Kenyan, Turkey, Brazil, Latin America as well as Medan City countries respectively.

Table 3: Number of Organization Types

Organization types	Percentage	Numbers
SMEs	45%	9
Manufacturing	25%	5
Business	10%	2
Textile	5%	1
Trading and service	5%	1
Industries	5%	1
Subsistence Small Businesses	5%	1

Table 3 above presents the lists of organization with more publication as well as their percentage. SMEs lead the table with 9 publications, manufacturing is next with 5 papers, business with 2 papers while textile, trading and service, industries and SSB has one paper each. It was observed that 45 percent were SMEs, 25 percent were manufacturing and 10 percent were business while textile, trading and service and industries has 5 percent each.

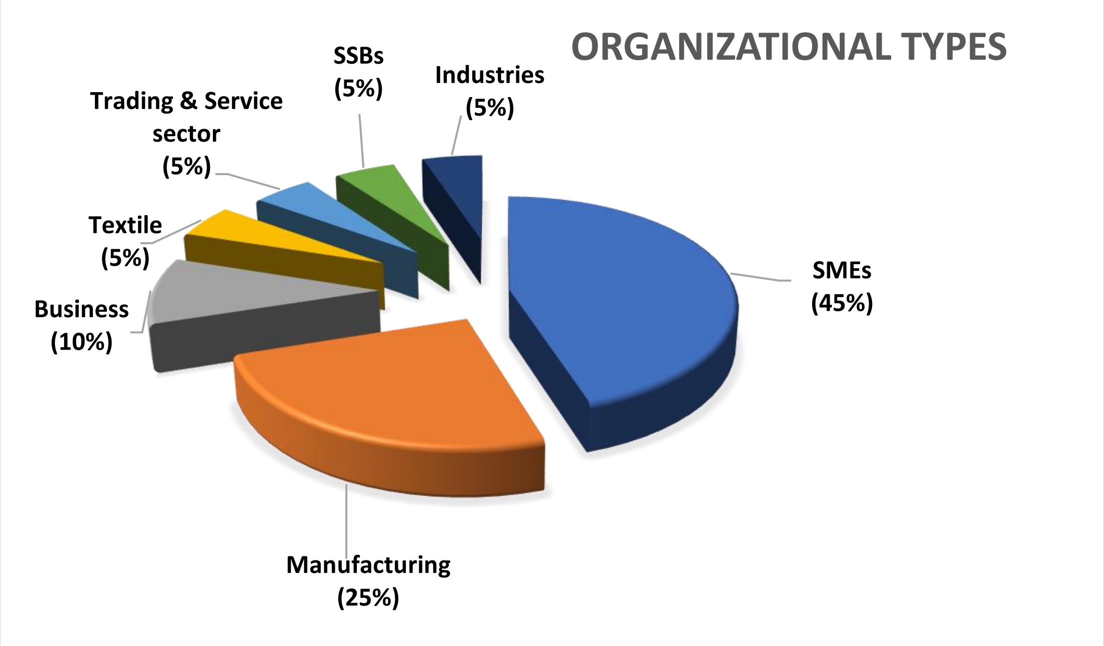

Figure 2: Chart showing the organizational types and their percentages

The figure depicts the types of enterprises reviewed in the study. The majority of the research papers focused on SMEs (45%) . 25 percent focused on manufacturing, 10 percent on Business while 5 percent were conducted among textile, trading and service, SSBs and Industries.

5.0 Conclusion and Recommendations

A lot of studies have investigated and confirmed that intellectual capital significantly influences SMEs performance. Organizations that recognize, manage, and invest in their intellectual capital can achieve long-term success, enhanced market positioning, and greater value creation. In spite of this, published articles on the study have not been carried out on cogent SMEs such as Nano, family businesses which could be risky when compared to the future needs of both developed and developing economies. It offers a comprehensive examination on factors influencing the performance of SMEs. Therefore, it is vital for business owners to leverage IC for enterprises growth However, challenges such as inadequate knowledge management practices and difficulty in measuring intellectual capital remain barriers to optimization. The study recommends that future research should explore industry specific strategies for enhancing intellectual capital utilization in SMEs. Organizations should invest in employee training, develop knowledge management systems, and strengthen relationships with stakeholders. SMEs can harness intellectual capital more effectively, leading to sustained growth and competitive advantage in the modern business landscape. Ministry of Commerce and Industry, SMEDAN should create awareness on the need for SMES owners to utilize IC for business growth, expansion and sustainability. The study further recommended that SMEs and policymakers to leverage intellectual capital effectively.

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Technological Innovation and Artificial Intelligence in Business: An Empirical analysis on Emerging Economies

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Abstract

Despite the rapid integration of technology innovation and artificial intelligence in global corporate environments, emerging economies struggle to adopt and leverage these developments for sustainable economic growth. In this digital age, the sustainability of every business is directly tied on adoption of Artificial Intelligence and digital technologies. The study adopts econometric research design with secondary data using panel dataset from ten manufacturing companies, it empirically investigates the effect of artificial intelligence on technological innovation on business in emerging economies with focus on Nigeria. The study adopts random sampling techniques to select 10 manufacturing firms in Nigeria within 2015 to 2023 from the total population of 1036 manufacturing companies basically operating in Nigeria. Panel regression analysis were conducted, Fixed and random test were analyzed, result shows that Artificial Intelligence (AI) is statistically significant (P=0.026 < 0.05). The R-squared of the result indicates 96.7%, which shows a good fitness of the model, whereby only 3.3% can be explained in other variations. Findings shows that there was a positive association between digital transformation initiatives and sustainable business practices, with organizations utilizing digital tools attaining enhanced resource efficiency. The study concluded that AI and digital technology are essential transforming business procedures in developing countries, especially in Nigeria. The study recommends that firms must embrace the adoption of Artificial Intelligence in order to thrive and compete in this digital age.

***Keywords**: Artificial Intelligence, Emerging Economies, supply chain management, Sustainability Digital Technology*

1.0 Introduction

Artificial Intelligence (AI) denotes the emulation of human cognitive functions by computers, especially computer systems, to execute activities including learning, reasoning, problem-solving, and language comprehension (Russell & Norvig, 2020). Rooted in machine learning, deep learning, and natural language processing, AI has become a transformational instrument across multiple sectors, fostering innovation and enhancing operational efficiency. Globally, enterprises have progressively utilised AI technologies for automating customer service, predictive analytics, fraud detection, and optimising supply chains. The increasing availability of cloud computing and big data analytics has further expedited AI adoption, establishing it as a crucial factor in competitiveness within the contemporary digital economy.

In Nigeria, the adoption of AI in business remains in its early stages but is progressively gaining momentum, particularly among startups and fintech companies aiming to enhance consumer interaction and service delivery (Chinomona & Njeri, 2022). Nigerian enterprises are commencing the exploration of AI for personalized marketing, automated customer service, and financial risk assessment, notwithstanding infrastructural and legal difficulties. Nevertheless, the wider manufacturing and service sectors continue to fall short owing to restricted access to technical proficiency, inadequate digital infrastructure, and elevated deployment costs. Nevertheless, with escalating investments in digital skills training and heightened interest from both public and commercial sectors, AI possesses significant potential to transform the corporate landscape in Nigeria by improving productivity, fostering innovation, and enhancing global competitiveness.

The emergence of Artificial Intelligence (AI) and digital technology has profoundly transformed various sectors, especially in developing nations. Technological inventions, such as AI, are being incorporated into business operations to improve operational efficiency and competitiveness. The convergence of artificial intelligence, digital transformation, and sustainability has emerged as a critical focus for both academics and professionals (Srinivasan and Swink, 2020).

Nigeria has being considered as emerging economy has experienced a proliferation of AI applications across several sectors, particularly in manufacturing, where supply chain management (SCM) is crucial (Shukla and Jaiswal, (2013). In light of the global emphasis on sustainability, companies are currently investigating methods to optimize resources, minimize waste, and comply with environmental norms using digital advances. This paper investigates the influence of AI on technical innovation within businesses in Nigeria, by analyzing the implementation of digital technologies in industrial enterprises (Petrini and Pozzebon, 2020).

However, the paper is specifically structured to:

i. examine the impact Artificial Intelligence on business development in Nigeria, as an emerging Economy;
ii. determine the influence of digital transformation initiatives on operational efficiency within manufacturing sector in Nigeria.

In order to achieve the specific objectives, the research formulates the following null hypotheses:

$H0_1$: Artificial Intelligence does not have significant effect on business development in Nigeria, as an emerging Economy.
$H0_2$: Digital transformation initiatives does not significantly influence operational efficiency within manufacturing sector in Nigeria.

2.0 Literature Review

2.1 Technological Innovation

Technological innovation signifies the development and application of new or substantially enhanced technologies in products, services, or processes to augment efficiency, competitiveness, or market value (OECD, 2005). It includes both startling innovations and gradual enhancements that together propel economic revolution and industrial evolution. Technological innovation encompasses not only the creation of new items but also improvements in production processes, organisational strategies, and service delivery (Schumpeter, 1934). It acts as a catalyst for productivity enhancement and is crucial in influencing the dynamics of modern global economies, particularly in developing and emerging countries.

In rising economies such as Nigeria, technology innovation is widely acknowledged as an essential instrument for addressing developmental difficulties and promoting inclusive growth. The rate and scope of innovation adoption are frequently hindered by infrastructure deficiencies, inadequate institutional frameworks, and insufficient investment in research and development (Adeleye, 2021). Nevertheless, industries such as finance, agriculture, and telecommunications are commencing to witness an increase in innovative practices, enabled by mobile technology, digital platforms, and government-initiated digital economy plans.

2.1.1 Major Components of Technology Innovation

Technological innovation is a multifaceted notion consisting of various essential elements that jointly facilitate the creation and dissemination of new technologies. The components of product innovation, process innovation, organisational innovation, and marketing innovation constitute the foundational framework for the introduction and maintenance of technological change in industries and economies (Tidd & Bessant, 2020).

2.1.2 Digital Transformation and Sustainability

Digital transformation is closely linked to sustainability in company operations, especially in developing nations. Digital solutions enable companies to track energy consumption, enhance resource distribution, and minimize waste, thereby fostering sustainable practices (Petrini & Pozzebon, 2020). Most businesses that implement digital transformation efforts generally achieve enhanced resource efficiency, superior operational performance, and sustained viability.

2.1.3 Supply Chain Management in Emerging Economies

In developing economies such as Nigeria, supply chain inefficiencies provide considerable challenges in terms of implementation. The incorporation of AI and digital technology into supply chain management enhances transparency, minimizes lead times, and improves coordination throughout the supply chain. A study by Dilek *et al.*, (2015) indicates that companies implementing AI in supply chain management experience enhanced operational efficiency and resilience, particularly under volatile conditions.

2.1.4 Artificial Intelligence and Business Innovation

Artificial Intelligence has significantly transformed business operations by facilitating automation, predictive analytics, and decision-making processes. Research conducted by Brynjolfsson and McAfee (2017) indicates that AI-driven innovations can optimise operations, lower expenses, and enhance the competitive advantage of companies. Furthermore, AI applications in supply chain management have been shown to improve demand forecasting, inventory control, and distribution efficiency (Huang *et al*., 2020).

Artificial intelligence has changed business operations by automating procedures and analysing extensive data sets to enhance decision-making. Applications of AI in business encompass customer service via chatbots, sales forecasting, and supply chain optimisation (Brynjolfsson & McAfee, 2017). The adoption of AI in small and medium-sized Enterprise (SMEs) within emerging economies is accelerating, enabling these businesses to expand operations and compete with larger global corporations (Bello, 2018).

2.1.5 Challenges in AI Adoption in Emerging Economies

Despite its potential, the implementation of AI in developing economies encounters numerous obstacles. A primary concern is the insufficient infrastructure to facilitate AI systems. The World Bank (2020) indicates that numerous emerging nations face inadequate broadband connection, obstructing AI deployment. (United Nations Educational, Scientific and Cultural Organization (UNESCO), 2021).

2.1.6 Opportunities for AI in Emerging Economies

Industries such as agriculture, healthcare, and finance stand to benefit significantly from AI deployment. For example, AI-driven predictive analytics in agriculture can optimize crop yields, while AI in healthcare can enhance diagnostics and treatment in resource-constrained environments (Yadav, et.al.,2017).

2.2 Theoretical Review

This study is underpinned by three principal theories examining the connection between technical innovation, artificial intelligence (AI), and corporate success in emerging economies: Schumpeter's Theory of Innovation, Dynamic Capabilities Theory, and Resource-Based View (RBV) Theory.

Schumpeter’s Theory of Innovation asserts that technological change and innovation are fundamental catalysts of economic progress and company expansion. Schumpeter highlighted that the "creative destruction" of obsolete processes by breakthrough technology such as AI results in enhanced efficiency, competitiveness, and economic growth, especially in growing economies. The implementation of AI challenges conventional business methods, enabling companies to utilize innovative technologies for enhanced operational efficiency and sustainability (Schumpeter, 1934).

The dynamic capabilities theory emphasizes a firm's capacity to adapt, integrate, and restructure internal and external resources in reaction to evolving surroundings. Within the framework of this study, artificial intelligence and digital transformation are essential dynamic capabilities that enable enterprises in emerging economies, such as Nigeria, to adapt to technology advancements, bolster supply chain resilience, and promote sustainability. Through the enhancement of AI capabilities, enterprises can restructure their operations to align with changing market needs and regulatory requirements (Marr, 2020).

The Resource-Based View (RBV) Theory posits that enterprises attain competitive advantage through the acquisition and utilization of valuable, rare, inimitable, and non-substitutable (VRIN) resources. Artificial intelligence and digital technology are seen as strategic assets that provide companies with the opportunity for enduring competitive advantage through increased productivity, cost reduction, and the facilitation of innovation. In emerging economies, businesses utilizing AI-driven innovations surpass competitors by enhancing operational efficiency and sustainable business practices (Chui *et al.,* 2018).

2.3 Empirical Studies

Several studies were reviewed in the study. Kowalczyk and Buxmann (2015) examined the impact of AI on improving operational efficiency in supply chain management in emerging economies. Through a quantitative approach that incorporated surveys and case studies, they discovered that the use of AI markedly enhanced decision-making and logistics operations. It was concluded in the study that AI enhances operational resilience and reduces costs in supply chains.

Frey and Osborne, (2017) examined the influence of digital transformation on sustainability inside small and medium-sized enterprises (SMEs) in Africa. The research utilized a panel data regression model using data from 50 SMEs, demonstrating a positive association between digital transformation and resource efficiency. The author determined that digital tools improve sustainable practices in SMEs.

Ivanov *et al.* (2021) evaluated the impact of AI-driven innovations on the competitiveness of manufacturing enterprises in China. Utilising a longitudinal dataset from 2010 to 2020 and employing econometric methodologies, they discovered that enterprises investing in AI surpassed their competitors in market share and productivity. It was concluded that the use of AI is essential for sustaining competitiveness in the global marketplace.

Miklos & O'Leary. (2000) examined the influence of AI on advancing sustainable business practices within the Indian manufacturing industry. The study employed structured interviews and regression analysis, demonstrating that the integration of AI resulted in significant decreases in waste and energy consumption. They determined that AI is an essential facilitator of sustainability in resource-intensive sectors.

Petrini & Pozzebon, 2020).) investigated the impact of artificial intelligence on creativity and operational performance inside Nigerian enterprises. The research employed a survey-based methodology including 20 manufacturing enterprises and utilized regression analysis, revealing a substantial positive correlation between AI deployment and enhanced operational efficiency. The authors determined that AI promotes creativity and improves organizational performance within the Nigerian environment.

3.0 Methodology

3.1 Data Collection

This study employs a quantitative research approach utilizing panel data econometric methods to analyses the influence of technological innovation and artificial intelligence on corporate performance in emerging economies. The study utilizes fixed effects and random effects models to account for unobserved variation among businesses and nations, employing the Hausman specification test to choose the most suitable model. Data were obtained from secondary databases spanning five years, and factors including R&D investment, AI adoption index, and business productivity were examined using Stata software to guarantee the robustness and validity of the results.

The study employs secondary panel dataset from ten manufacturing companies in Nigeria spanning nine years (2015-2023). The criteria for selecting manufacturing enterprises includes those that are officially registered, currently operational, and have disclosed information on technological innovation and AI use during the review period, particularly within the industrial and consumer goods sectors. The research examines the Nigerian manufacturing industry, consisting of over 3,715 registered companies as reported by the Manufacturers Association of Nigeria (Rentech, 2024).

3.2 Econometric Techniques

Panel Regression Analysis was used to examine the impact of AI adoption on business outcomes. Fixed and Random Effects Models account for firm-specific characteristics that may influence the adoption of digital technologies, while the Hausman test was conducted to determine the appropriate model (fixed or random effects) for the analysis.

$Y_{it}=\alpha+\beta_1 AI_{it} + \beta_2 TI_{it}+\beta_3 X_{it} + \epsilon_{it}$ ………………………………………………………………… (i)

Y_{it} represents business performance in country i at time t.

AI_{it} represents AI adoption in country iii at time t.

TI_{it} represents technological infrastructure in country i at time t

X_{it} represents control variables,

ϵ_{it} is the error term.

Model 1: Effect of AI and Digital Transformation on Operational Efficiency

We model the impact of AI and digital transformation on operational efficiency. The fixed-effects (FE) or random-effects (RE) model is suitable due to the panel nature of the data.

$OEF_{it}=\beta 0+\beta_1 AI_{it}+\beta_2 DTI_{it}+\beta_3 SIZE_{it}+\beta_4 SCR_{it} +\beta_5 R\&D_{\ it}+_{it}+\beta_6 AGE_{\ it}+\varepsilon_{it}$

Where OEFF**:** Operational Efficiency, AI: Artificial Intelligence, DTI: Digital Transformation Initiatives, SIZE: Firm Size, SCR: Supply Chain Resilience, R&D**:** Research and Development
AGE**:** Firm Age

Measurement metrics of variables

OEFF: Operational Efficiency – This represents the dependent variable, which measures how efficiently a firm or organization operates.

AI: Artificial Intelligence – This represents the independent variable measuring the degree of AI adoption or implementation in the firm's processes or operations.

DTI: Digital Transformation Initiatives – This variable captures the level of digital transformation within the firm, reflecting the adoption of digital technologies like cloud computing, big data, or automation.

SIZE: Firm Size – This variable measures the size of the firm, often represented by the number of employees, total assets, or total sales.

SCR: Supply Chain Resilience – This measures the firm's ability to recover from disruptions or adapt to changes in its supply chain, which is influenced by AI and digital technology adoption.

R&D: Research and Development – This variable represents the firm's investment in R&D activities, reflecting its efforts toward innovation and technological advancement.

AGE: Firm Age – This variable captures the number of years the firm has been in operation, as older firms may have different levels of operational efficiency

4.0 Results and Discussion

Table 1 showing Panel Descriptive Analysis for the study N=150

Variables	Description	Mean	Std. Dev	Min.	Max.
A.I	Overall	4.460	1.479	-.358	8.765
	Between		1.184	2.860	7.185
	Within		0.958	0.949	6.041
DTI	Overall	5.367	1.599	1.476	9.201
	Between		1.437	3.242	7.543
	Within		0.828	2.853	7.167
SIZE	Overall	5.471	1.884	0.320	10.157
	Between		1.643	3.105	8.326
	Within		1.061	1.652	7.452
SCR	Overall	4.250	1.693	-0.700	8.390
	Between		1.497	2.186	6.877
	Within		0.914	1.363	5.811
R&D	Overall	7.589	2.038	3.184	13.341
	Between		1.831	5.383	10.937
	Within		1.056	4.269	9.994
AGE	Overall	5.480	0.757	4.001	7.001
	Between		0.591	4.266	6.001
	Within		0.506	3.546	6.546

OEFF	Overall	18.578	2.691	15.48	24.77
	Between		0	18.578	18.578
	Within		2.691	15.48	24.77

Note: OEFF *is Operational Efficiency, AI is Artificial Intelligence, DTI is Digital Transformation Initiatives, SIZE: Firm Size, SCR: Supply Chain Resilience, R&D: Research and Development AGE* ***is*** *Firm Age.*

The average value of AI is 4.460, with a standard deviation of 1.184, indicating that AI adoption differs more significantly among enterprises than within individual firms. The average DTI score is 5.367, exhibiting significant inter-firm variability (standard deviation = 1.437), indicating considerable disparities in digital transformation endeavours among enterprises.

Firm Size (SIZE): The average firm size is 5.47, with substantial inter-firm variability (standard deviation = 1.64), signifying big differences in firm sizes. The average Supply Chain Resilience (SCR) score is 4.250, with a standard deviation of 1.49, indicating variety in supply chain resilience capabilities among the selected organizations

The average R&D score is 7.589, with inter-firm variability (standard deviation = 1.831), indicating that enterprises allocate varying levels of resources to R&D. Moreso, the average age of firms is 5.48, with a standard deviation of 0.591, suggesting minimal variation in firm age.

The average operational efficiency score is 18.57, exhibiting no inter-firm variation, indicating uniform operational efficiency across all firms in the study. The results indicate that the majority of variables, especially AI, DTI, SIZE, SCR, and R&D, demonstrate significant diversity among organizations, this shows disparities in technological adoption, scale, and resilience tactics. Nevertheless, operational efficiency (OEFF) is consistent among the firms.

Table 2 Pairwise Correlation showing Panel covariance with probability values if each variables

Variables	**OEFF**	**AI**	**DTI**	**SIZE**	**SCR**	**R&D**	**AGE**
OEFF	1.000						
	0.421						
AI	0.00	1.000					
	-0.237	0.796					
DTI	0.0035	0.000	1.000				
	-0.398	0.813	0.905				
SIZE	0.0000	0.000	0.0000	1.000			

	-0.348	0.801	0.861	0.9428			
SCR	0.0000	0.000	0.000	0.000	1.000		
	-0.401	0.823	0.890	0.964	0.949		
R&D	0.000	0.000	0.000	0.000	0.0000	1.000	
	-0.260	0.144	0.238	0.282	0.256	0.231	
AGE	0.0013	0.079	0.003	0.001	0.0016	0.004	1.000

Note: OEFF *is Operational Efficiency, AI is Artificial Intelligence, DTI is Digital Transformation Initiatives, SIZE: Firm Size, SCR: Supply Chain Resilience, R&D*: *Research and Development AGE* **is** *Firm Age*

The relationship between Operational Efficiency (OEFF) and Artificial Intelligence (AI) is positive and statistically significant, with a coefficient of 0.421. result shows that a unit increase in the use of AI leads to 42.1% increase in the operational efficiency in the organizations. This confirms the potentials involved in incorporating AI and new technologies in business practices.

Also, result shows there is a strong and positive association between AI and Digital Transformation Initiatives (DTI), evidenced by a correlation coefficient of 0.796. This shows that companies investing in AI are likewise inclined to pursue digital transformation, indicating that AI adoption frequently coincides with wider technological progress within organizations.

Digital Transformation Initiatives (DTI) and Firm Size (SIZE) have a significant positive association of 0.861, indicating that larger organizations are more inclined to engage in digital transformation. This may result from larger organizations possessing greater resources to allocate towards such projects than smaller firms.

The relationship between Supply Chain Resilience (SCR) and Research and Development (R&D) is positive although somewhat modest, quantified at 0.256. This indicates that although companies investing in R&D generally own more robust supply chains, the impact is not notably significant, possibly due to the diverse emphasis of R&D expenditures.

A robust positive association exists between Firm Size (SIZE) and Firm Age (AGE), quantified at 0.9428. This suggests that established enterprises are generally larger, potentially due to prolonged expansion over time.

The correlation between Operational Efficiency (OEFF) and Firm Age (AGE) is negative, measured at -0.348, indicating that older enterprises may see a decrease in operational efficiency. This may result from antiquated procedures or systems that become increasingly difficult to alter as organizations age.

Result further confirms the significant association between firm characteristics, such as size and age, and technology initiatives, whereas operational efficiency may encounter difficulties, especially with the rise of AI use and the advancing years of firms.

Table 3: Panel Regression Analysis

Dependent Variable: OEFF
Method: Panel Least Squares
Date: 10/25/24 Time: 11:22
Sample: 2015 2023
Included observations: 150

Variable	Coefficient	Std. Error	t-Statistic	Prob.
AI	0.871388	0.224773	3.876754	0.0002
DTI	1.467515	0.278035	5.278173	0.0000
SIZE	-0.923667	0.420189	-2.198220	0.0296
SCR	0.852395	0.359980	2.367898	0.0192
R_D	-0.814407	0.387987	-2.099055	0.0376
AGE	-0.749258	0.252995	-2.961553	0.0036
C	26.29913	1.683591	15.62085	0.0000

R-squared	0.967198	Mean dependent var	18.58221
Adjusted R-squared	0.340459	S.D. dependent var	2.700282
S.E. of regression	2.192956	Akaike info criterion	4.454218
Sum squared resid	682.8859	Schwarz criterion	4.595343
Log likelihood	-324.8393	Hannan-Quinn criter.	4.511555
F-statistic	13.73310	Durbin-Watson stat	0.915926
Prob(F-statistic)	0.000000		

Note: OEFF *is Operational Efficiency, AI is Artificial Intelligence, DTI is Digital Transformation Initiatives, SIZE: Firm Size, SCR: Supply Chain Resilience, R&D***:** *Research and Development AGE* ***is*** *Firm Age*

Result shows the panel regression of the study, it can be seen that Artificial Intelligence (AI) generates a positive and statistically significant effect on operational efficiency, evidenced by a coefficient of 0.871, and a p-value of 0.0002. This indicates that as companies augment their use of AI, their operational efficiency greatly increases and promote further productivity.

The coefficient for Digital Transformation Initiatives (DTI) is 1.467, a p-value of 0.00, establishing a positive and statistically significant effect on operational efficiency. Companies that undertake numerous digital transformation initiatives generally exhibit increased efficiency, indicating that digital technologies facilitate operational activities and boost production.

The size of the firm (SIZE) exerts a negative and statistically significant influence on operational efficiency, evidenced by a coefficient of -0.924, a t-statistic of -2.20, and a p-value of 0.0296. Large corporations seem to have operational inefficiencies, potentially attributable to heightened complexity, bureaucracy, or difficulties in seamless expansion of activities.

More so, Supply Chain Resilience (SCR) exerts a positive and statistically significant influence on operational efficiency, evidenced by a coefficient of 0.852, a t-statistic of

2.37, and a p-value of 0.0192. This indicates that companies with robust, resilient supply chains generally exhibit superior performance, likely attributable to enhanced risk management and streamlined operating processes.

Furthermore Research and Development (R&D) exhibits a negative and statistically significant effect on operational efficiency, indicated by a coefficient of -0.814 and a p-value of 0.0376. This shows that increased R&D expenditure may not necessarily lead to operational enhancements and could potentially diminish efficiency, possibly due to resource allocation issues or the delay between research and concrete outcomes.

The impact of company age (AGE) on operational efficiency is negative and statistically significant, evidenced by a coefficient of -0.749, and a p-value of 0.0036. Established companies often exhibit reduced efficiency, potentially due to challenges in assimilating new technologies or operating methodologies over time.

The results of the panel regression show that the adoption of Artificial Intelligence, supply chain resilience and digital transformation improve operational efficiency, other elements like business size, age, and R&D spending are not significant influence for operational efficiency

Table 3: Fixed and Random Effects Regression Results on Technological Innovation and Artificial Intelligence in Business

	(1)	**Fixed Effect**		**(2)**	**Random Effect**	
VARIABLES	Coefficients	T	p-value	Coefficients	T	p-value
AI	0.0387*** (0.009)	3.63	0.000	0.032** (0.020)	2.21	0.026
DTI	-0.178* (0.017)	-2.66	0.028	-0.173* (0.103)	-1.70	0.086
SIZE	-0.0231 (0.040)	-2.59	0.235	-0.015 (0.038)	-0.43	0.670
SCR	0.506*** (0.052)	7.63	0.042	0.654*** (0.056)	11.72	0.000
R&D	0.0387*** (0.0109)	3.62	0.017	0.0229** (0.017)	2.26	0.034
AGE	0.048*** (0.010)	2.69	0.029	0.0229** (0.012)	2.29	0.021
Constant	2.386*** (1.258)	2.21	0.007	2.995** (1.219)	2.48	0.063
Observations	**150**			**150**		
Number of firms	10			10		
R-squared	0.871			0.858		
F/Chi^2-statistic	75.3***		0.000	217.66***		0.000

Note: OEFF *is Operational Efficiency, AI is Artificial Intelligence, DTI is Digital Transformation Initiatives, SIZE: Firm Size, SCR: Supply Chain Resilience, R&D:* ***:*** *Research and Development AGE is Firm Age*

Artificial Intelligence (AI) showed a strong, positive, and statistically significant effect across both fixed and random effects models (coefficients of 0.0387 and 0.032, respectively), according to the regression analysis, which shows that a number of important elements affect operational efficiency. This suggests that corporate performance is greatly improved by greater AI usage.

On the other hand, although the effect is statistically weaker in the random effects model, Digital Transformation Initiatives (DTI) have a negative influence on efficiency, as indicated by the negative coefficients (-0.178 and -0.173).

The non-significant p-values in both models show that firm size has no significant impact on operational efficiency. With big coefficients (0.506 and 0.654), Supply Chain Resilience (SCR) shows a highly positive and significant influence, emphasising the role that a strong supply chain plays in improving operational performance.

Operational efficiency is also positively and significantly impacted by firm age and research and development (R&D). Innovation activities improve corporate efficiency, as indicated by R&D's coefficients (0.0387 in the fixed effects model and 0.0229 in the random effects model).

The positive correlations for Firm Age (0.048 and 0.0229) further show that older enterprises gain from their experience. With R-squared values of 0.871 and 0.858, the models themselves are highly significant, suggesting that a large amount of the variation in operational efficiency can be explained by the explanatory factors. The model has a good fit of 87.1% which is confirmed by the significant F-statistic and Chi-squared statistic.

Table 4 Result of Within Regression with AR(1) Disturbance

Table 4.5: Result of Within Regression with AR(1) Disturbance of Technological Innovation and Artificial Intelligence in Business

Variable	Coefficient	Std. Err.	T	p-value
AI	0.03**	0.01	2.09	0.039
DTI	-0.31	0.14	-1.49	0.140
SIZE	-0.04	0.04	-0.51	0.610
SCR	0.48***	0.11	3.43	0.001
R&D	0.03**	0.01	2.09	0.012
AGE	-0.21	0.14	-1.49	0.156
Constant	4.88***	0.75	6.53	0.000

R-squared	0.861	
F-statistic	5.85***	0.000

Note: OEFF *is Operational Efficiency, AI is Artificial Intelligence, DTI is Digital Transformation Initiatives, SIZE: Firm Size, SCR: Supply Chain Resilience, R&D***:** *Research and Development AGE* ***is*** *Firm Age*

Several variables and operational efficiency have substantial correlations, according to the results of the inside regression with AR(1) disturbance. With (p-value = 0.039), artificial intelligence (AI) has a positive and statistically significant effect on operational efficiency, suggesting that implementing AI improves corporate performance. With (p-value = 0.001), Supply Chain Resilience (SCR) likewise shows a considerable positive effect, emphasizing the significance of strong supply networks in improving operational efficiency.

With an R-squared value of 0.861, the model itself is well-fitted, meaning that the variables it includes account for 86.1% of the variation in operational efficiency. The model's overall relevance is further supported by the F-statistic of 5.85 (p-value = 0.000).

With a coefficient of 0.03 (p-value = 0.012), Research and Development (R&D) also demonstrates a significant positive connection, indicating that efficiency is positively impacted by innovation efforts.

5.0 **Conclusion and Recommendations**

This study's findings indicate that technological innovation and artificial intelligence significantly enhance corporate performance in the Nigerian manufacturing industry. Companies who adopted novel technology and incorporated AI tools into their operations witnessed enhanced productivity, efficiency, and market competitiveness. This indicates that adopting digital transformation is now imperative for firms seeking to succeed in a progressively data-centric and automated global market.

The study highlights the significance of robust institutional frameworks, infrastructure, and human capital development in optimizing the advantages of innovation. Policymakers and corporate leaders must cooperate to establish a conducive atmosphere that promotes technology adoption, stimulates R&D investment, and enhances digital competencies within the workforce. This will improve firm-level performance and foster broader economic growth and industrial resilience in emerging economies.

From the result, the study uncovers several actionable various actionable recommendations to facilitate the effective integration of technological innovation and artificial intelligence into the Nigerian industrial sector. Manufacturing enterprises should prioritize investments in digital infrastructure and innovation-oriented initiatives to improve productivity and maintain competitiveness in the global market.

The government and other policy entities should establish conducive settings by devising and executing policies that promote technological adoption, including tax incentives for innovation-related investments, grants for AI integration, and financing for digital skill enhancement. There is a necessity for labour capacity enhancement. Training programs and upskilling initiatives must be established to furnish personnel with essential digital competences, enabling them to proficiently run and manage AI systems and other developing technologies.

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Effect of Employee Engagement Strategies on Employee Job Satisfaction of Airtel Telecommunications in Nigeria

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Abstract

The telecommunications industry in Nigeria, a rapidly growing and competitive sector, faces considerable challenges in employee retention, productivity, and job satisfaction. This study examined the effect of employee engagement strategies on employee job satisfaction of Airtel Telecommunications in Nigeria. The study adopted a survey research design whereby structured 5-point likert scale questionnaire was administered to a sample of two hundred and eight (208) junior and senior employees of Airtel Telecommunications in FCT, Abuja, Nigeria. Partial Least Square (PLS-SEM) statistic was employed to test the hypotheses formulated. The findings of this study reveales that flexible work schedule has a positive and insignificant effect on employee job satisfaction of Airtel Telecommunications in Nigeria, while recognition programs have positive and significant effect on employee job satisfaction of Airtel Telecommunications in Nigeria. The study concludes that while flexible work schedules offer convenience and support work-life balance, they do not significantly influence job satisfaction at Airtel Telecommunications in Nigeria, whereas recognition programs have a strong positive impact, highlighting the importance of acknowledging employee contributions in enhancing overall job satisfaction. The study recommends that Airtel should consider reassessing how flexible schedules are currently implemented to identify areas for improvement. This might involve allowing greater choice in work hours, increasing the availability of remote work options, or aligning flexibility options with specific employee roles and responsibilities.

Keywords: Training, Performance, Apprenticeship, Job rotation, SMEs

Introduction

Employee job satisfaction is a critical factor in achieving organizational success and stability. Globally, businesses acknowledge that maintaining high levels of job satisfaction reduces employee turnover, boosts morale, and enhances overall performance (Anitha, 2014). Beyond financial compensation, job satisfaction is influenced by the work environment, interpersonal relationships, growth opportunities, and recognition (Huang et al., 2016). Modern organizations adopt strategic employee engagement approaches, recognizing that engaged employees are more satisfied, motivated, and committed to their responsibilities (Saks, 2019).

Employee engagement is particularly vital in competitive industries like telecommunications, where rapid changes and high demands challenge talent retention (Bakker & Albrecht, 2018). Developed nations implement initiatives such as flexible work arrangements, professional development programs, and recognition schemes to foster employee satisfaction and loyalty (Chhetri, 2017). Prioritizing personal growth, inclusivity, and supportive leadership has been shown to positively affect employee morale and satisfaction across different sectors (Al Mehrzi& Singh, 2016).

In Nigeria, the rapid growth of the telecommunications sector has intensified competition among major providers like Airtel, MTN, and Glo, increasing the need for effective engagement strategies to boost job satisfaction and retain talent. Airtel Nigeria faces challenges and opportunities in managing employee satisfaction within the country's socio-economic landscape. To address these, the company has introduced career development programs, leadership training, and wellness initiatives (Agwu, 2020). Studies indicate that well-executed engagement strategies in Nigeria's telecommunications sector significantly improve employee satisfaction, reduce turnover, and enhance organizational resilience and service quality (Omoniyi, 2019).

Statement of the Problem

The telecommunications industry in Nigeria, a rapidly growing and competitive sector, faces considerable challenges in employee retention, productivity, and job satisfaction. As one of the leading telecom providers, Airtel Nigeria continually invests in talent management and engagement initiatives to maintain a competitive edge. However, despite these efforts, employee job satisfaction remains suboptimal, evidenced by high turnover rates, reduced morale, and declining productivity levels. This issue may be attributed to engagement strategies that do not fully address employees' specific needs and expectations in Nigeria's unique socio-economic context. Employee disengagement not only impacts individual performance but also affects overall organizational outcomes, including customer satisfaction and brand loyalty.

Previous studies on employee engagement in Nigeria largely focus on banking and manufacturing, with little research specifically examining the high-pressure telecom environment (Ojiabo et al., 2021; Omoniyi, 2019). Existing studies (Yalabik et al., 2017, Audu et al., 2016) also often isolate engagement strategies without addressing comprehensive approaches tailored to the telecom workforce's specific needs in Nigeria. This study aims to fill this gap by examining the effect of tailored employee engagement strategies on job satisfaction within Airtel Nigeria, providing actionable insights for fostering a more satisfied, committed workforce in the face of competitive and operational challenges.

Objective of the Study

The general objective of this study is to examine the Effect of Employee Engagement Strategies on Employee Job Satisfaction of Airtel Telecommunications in Nigeria. the specific objective are to;

i. Examine the effect of flexible work schedules on employee job satisfaction of Airtel Telecommunications in Nigeria.
ii. Investigate the effect of recognition programs on employee job satisfaction of Airtel Telecommunications in Nigeria.

Literature Review

Employee Engagement Strategies

Employee engagement strategies are well-planned initiatives aimed at promoting employee commitment, satisfaction, and productivity. These strategies emphasize key aspects such as effective communication, recognition, and growth opportunities, fostering a positive workplace culture. As a result, they contribute to improved morale and stronger organizational loyalty (Empuls, 2023).

According to Harter et al. (2023), employee engagement strategies involve practices that align employees' roles with organizational goals, ensuring they feel valued and supported. This alignment includes providing regular feedback, ensuring employee well-being, and cultivating strong connections among employees, which enhance organizational performance and reduce turnover.

Flexible Work Schedules

According to Market Business News (2024), flexible work schedules refer to arrangements that allow employees to set or modify their start and end times or work outside of a traditional nine-to-five schedule. This approach provides employees with autonomy over their work hours, which can lead to higher morale and a more balanced work-life integration.

The U.S. Department of Labor defines a flexible schedule as an alternative to the traditional 40-hour work week, allowing employees to adjust their arrival and departure times. This flexibility may also involve teleworking or remote work, which has become more feasible with technological advancements (Time Doctor, 2024). Flexible scheduling models include formats like part-time work, job sharing, and hybrid arrangements, all designed to support a healthier work-life balance. These models have proven effective in boosting productivity and improving employee retention by aligning work schedules with individual needs and personal responsibilities (Indeed, 2024).

Recognition Programs

Recognition Programs as Formalized Incentive Structures: These programs are organized efforts by companies to formally acknowledge and reward employees for their accomplishments, with the goal of enhancing engagement and morale. They often involve various types of rewards, such as "Employee of the Month" titles, spot bonuses, and peer-to-peer recognitions, all aimed at encouraging positive behaviors that align with organizational values (HubEngage, 2023).

Recognition Programs and Employee Well-being: In organizational behavior, recognition programs are structured strategies aimed at improving employee well-being and engagement by appreciating their efforts, achievements, and contributions. These initiatives positively influence workplace morale, strengthen employee retention, and enhance productivity by creating a supportive environment that values individuals (Empuls, 2023).

Employee Job Satisfaction

Achievers (2024) defines employee job satisfaction as the positive emotional state that arises when an employee's work and work environment align with their personal values and goals. This satisfaction is influenced by factors such as organizational culture, work-life balance, recognition, and opportunities for career growth. When employees feel appreciated, see a clear path for career development, and operate in a supportive and inclusive workplace, they are more likely to be satisfied with their jobs.

Employee Satisfaction Guide (2024) describes job satisfaction as the sense of fulfillment employees derive from their job and workplace, which fosters greater motivation and loyalty. Factors such as fair compensation, recognition, work-life balance, and opportunities for professional development are key contributors. Creating a positive work environment and actively seeking employee feedback are crucial for enhancing job satisfaction.

Methodology

The study adopts a survey research design. The population consists of 433, which included 336 junior and 97 senior employees of Airtel Telecommunications in FCT, Abuja, Nigeria. Purposeful sampling technique was adopted for this study. The study employed Taro Yamane (1967) formula for determining the minimum sample size. Thus, minimum sample size is 208.
The study utilized primary source of data to collect data for the study. The choice of the method was the need to gather reliable information using simple approach that is time saving and efficient. The study employed the use of well-structured five-point likert scale (SA = Strongly Agree, A = Agree, U = Undecided, D = Disagree, SD = Strongly Disagree), close-ended questionnaire was used to obtain data from employees of Airtel Telecommunications in FCT, Abuja, Nigeria. The data collected was analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with the aid of SmartPls3.

Model specification

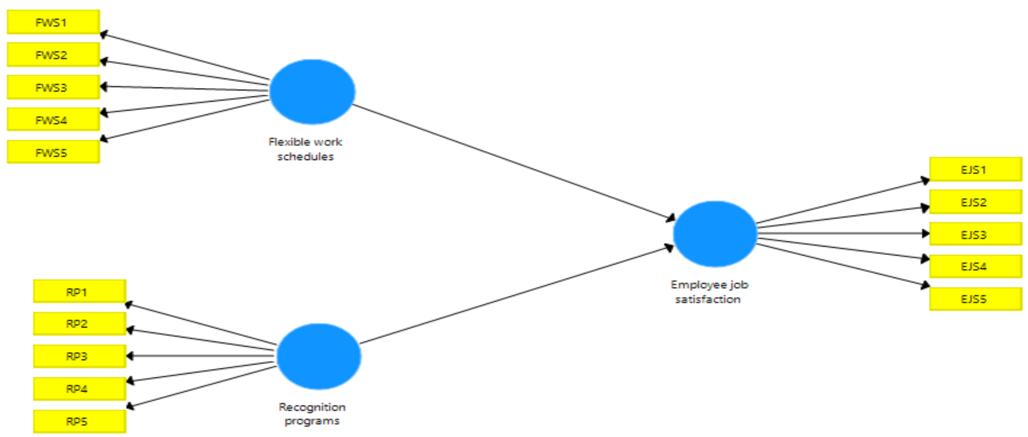

Figure 3.1 Structural model for direct relationship between Employee Engagement Strategies and Employee Job Satisfaction

Data Presentation And Analysis

A total of 208 copies of questionnaire distributed, only four hundred and sixteen (198) was retrieved giving a response rate of 95%. 10(5%) were not properly filled but returned. All further analyses were carried out using 198 responses.

Test of Hypotheses

The table below showed the path coefficients, t-values and p-values used to test the first four null hypotheses of the study:

Table 5: Path Coefficient of the Model

Variables	Beta	T Statistics (|O/STDEV|)	P Values	Decision	F^2 Value
Flexible work schedules -> Employee job satisfaction	0.286	5.213	0.200	Accepted	0.126
Recognition programs -> Employee job satisfaction	0.657	12.348	0.000	Rejected	0.667

*Notes: ***(P<0.01), **(P<0.05), *(P<0.1)*

Source: SMART-PLS Output, 2025

Hypothesis One

H_{o1}: Flexible work schedules has no significant effect on employee job satisfaction of Airtel Telecommunications in Nigeria.

The result of the test as shown in table 5 revealed that flexible work schedules positively and insignificantly affected employee job satisfaction of Airtel Telecommunications in Nigeria, with β = 0.286 and p = 0.200. Thus, hypothesis one was supported and therefore accepted at 5% level of insignificance. There is adequate evidence to accept the alternative hypothesis and the study therefore conclude that flexible work schedules has positive and insignificant effect on employee job satisfaction of Airtel Telecommunications in Nigeria.

Hypothesis Two

H_{o2}: Recognition programs has no significant effect on employee job satisfaction of Airtel Telecommunications in Nigeria.

The result from table 5 shows that recognition programs has positive and significant effects on employee job satisfaction of Airtel Telecommunications in Nigeria, with β = 0.657 and p = 0.000. Thus, hypothesis two was not supported and therefore rejected at 5% level of significance. There is adequate evidence to reject the null hypothesis and the study therefore conclude that recognition programs has positive and significant effects on employee job satisfaction of Airtel Telecommunications in Nigeria.

Table6: R-square Statistics

	R Square	R Square Adjusted
Employee job satisfaction	0.473	0.470

Source: Researcher's computation in Smart-PLS (2024)

The r-square statistics shows the level of determinism of the dependent variable by the independent variables of the study. Table 6 show that the study has an r-squarevalueof0.473 which indicates that the variables used for the study account for about 47.3% of the variability in the dependent variable. Other factors not captured in the model may account for the remaining 52.7%.

Discussion of Findings

Flexible work schedules have a positive but insignificant effect on employee job satisfaction at Airtel Telecommunications in Nigeria, indicating that while such schedules contribute to a better work-life balance and offer employees greater autonomy, they do not strongly influence overall job satisfaction levels. The finding was supported by the finding of Nwekpa et al. (2023), who found insignificant and positive relationship between Flexible Work schedules and Employees' job satisfaction in Nigerian Breweries PLC. Enugu, while it was disagree with the finding of Obisi (2021), who found that there is a significant relationship between flexible work schedules and employees' job satisfaction in Public Schools in Lagos State, Nigeria

Recognition programs have a positive and significant effect on employee job satisfaction at Airtel Telecommunications in Nigeria, implying that acknowledging employees' efforts, achievements, and contributions plays a crucial role in enhancing their satisfaction levels. This suggests that when employees feel valued and appreciated, they are more likely to experience a sense of fulfillment, motivation, and commitment to the organization, which ultimately boosts their overall job satisfaction. This finding is in agreement with the finding of Olanipon et al. (2024), who found financial incentive reward system has positive and significant effect on employee job satisfaction among casual workers at the Distilled companies in Lagos State, however, the finding disagree with the finding of Sam-Eleyi and Josiah (2024), who found that recognition programs has positive insignificant effect on employee job satisfaction of teachers in public secondary schools in Obio/Akpor Local Government Area in Rivers State.

Conclusion and Recommendations

Conclusion

Flexible work schedules have a positive but insignificant effect on employee job satisfaction at Airtel Telecommunications in Nigeria, concluding that while such schedules may enhance work-life balance and offer employees some level of convenience, they do not substantially impact overall job satisfaction. This may suggest that other aspects of the job, such as recognition, career advancement, or compensation, have a stronger influence on employee satisfaction than flexible scheduling alone.

Recognition programs have a positive and significant effect on employee job satisfaction at Airtel Telecommunications in Nigeria, concluding that acknowledging employees' contributions and achievements is essential for enhancing job satisfaction. This finding suggests that when employees feel recognized and valued, their sense of fulfillment, motivation, and loyalty to the organization increases, leading to higher overall satisfaction with their job roles.

Recommendations

i. Airtel should consider reassessing how flexible schedules are currently implemented to identify areas for improvement. This might involve allowing greater choice in work hours, increasing the availability of remote work options, or aligning flexibility options with specific employee roles and responsibilities.

ii. Airtel should formalize recognition programs to ensure consistency and inclusivity. This might involve structured awards, monthly employee highlights, and peer-recognition platforms that celebrate accomplishments across all departments.

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Commitment Competence and Venture Creation Among Women Shea Butter Processors in Minna, Niger State

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Abstract

The creation of new ventures is unquestionably one of the powerful ways to alleviate poverty that encourages many countries to allocate institutional, social and economic support for the ventures. Thus; venture creation is a crucial aspect of entrepreneurial activities, contributing to economic development by addressing unmet market demands. However, the lack of clear concept of creating new businesses has always been a problem. This study tends to examine the effect of commitment competence, among women Shea butter processors in Minna Niger State. The study was based on the Action Theory of entrepreneurship and it employed a descriptive survey design targeting 78 registered women Shea butter processors from National association of women Shea butter processors Niger State chapter. The study adopted census sampling technique where the entire population was studied. Primary data was collected using a structured 5-point Likert scale questionnaire. Results revealed a positive and significant relationship between commitment competence and venture creation at a regression coefficient value of 0.108. The regression model showed $R = 0.784$, $R^2 = 0.606$, Adjusted $R^2 = 0.591$, and $F = 25.554$, significant at $p<0.000$. Hypotheses were tested at a significance level of $p<0.05$. The study recommends that women Shea butter marketers in Minna Metropolis should put greater premium on commitment given that it has the capability of affecting venture creation in a significant positive way.

Keywords: Venture, Entrepreneur, Competence, Processor, Economy

1.0 Introduction

The Global Entrepreneurship Monitor (GEM) revealed in the Women's Report 2018/2019 that in recent years, 163 million women launched businesses across 74 economies worldwide, while 111 million were managing established enterprises (Breckau, 2023). However, due to limited female workforce participation in emerging economies, many women are motivated to start their own ventures, enabling them to amplify their voices and contribute to strengthening national economies. More so, research from various parts of the world consistently highlights the critical role women entrepreneurs play in fostering societal stability, enhancing welfare, and driving economic development (Baharudin *et al.*, 2020).

Subsequently, Shea butter farming is a significant agricultural activity in **Niger State, Nigeria** contributing to rural livelihoods, women empowerment and the local economy. The state is one of the leading producers of **shea nuts**, the raw material for shea butter production due to its favorable climate and abundant shea trees. Shea trees grow abundantly in several local government areas (LGAs) of Niger State, including Mokwa, Borgu, Lapai, Bida, Kontagora and Rijau. More so, Shea butter is sold locally and exported for use in cosmetics, pharmaceuticals and food industries there by increasing the economic growth of the state (Sani and Masud, 2022). However, despite its contribution to the growth of the economy in Niger State, obstacles such as limited access to modern processing technologies and techniques affected productivity and inferior product quality, reducing the competitiveness of women's shea butter businesses (Alhassan, 2020). It is against this backdrop that the focus of this study is to identify the effect of commitment competence on venture creation among women shea butter processors in Minna.

However, given that commitment competence may affect venture creation, the following research question was formulated; what is the effect of commitment competence on venture creation among women shea butter processors in Minna and null hypothesis was developed: $H0_1$: commitment competence has no significant relationship with venture creation among women shea butter processors in Minna.

2.0 Literature Review

This session explored the literature review in relation to the study variables, including commitment competence, its various dimensions, the significance of commitment competence, and its role in venture creation.

2.1 Commitment Competence

Successful entrepreneurs are often characterized as diligent people with a restless attitude in their work. In other words, they have a strong competency in totally committing, determining and dedicating, as well as taking proactive actions towards their responsibilities and duties (Barrientos-Báez *et al.,* 2022). Another aspect of this competency area is the initiative or proactive orientation, which calls for the entrepreneurs taking actions before being asked or forced to by events. Conclusively, commitment competencies are what drive the entrepreneur to move ahead with the business.

2.1.1 Importance of commitment competency

Commitment competency is crucial for venture creation as it encompasses the dedication and perseverance required to initiate and sustain a business (Sutikno *et al.,* 2022). Therefore, entrepreneurs with high commitment competency are more likely to persevere through challenges and setbacks. This persistence is essential for overcoming obstacles that naturally arise in the process of starting and growing a venture. Subsequently, commitment competency involves a clear focus on long-term goals. More so, entrepreneurs who are committed are better at setting and sticking to objectives, which helps in maintaining direction and achieving milestones. Committed entrepreneurs are more adept at effectively utilizing resources, including time, money, and human capital.

Their dedication ensures that resources are not wasted and are directed towards achieving business goals. Furthermore, commitment ensures consistent effort and hard work, which are essential for the gradual buildup of a successful venture (Moshi and Matotola, 2023). Therefore, consistency helps in maintaining momentum and achieving incremental progress. Entrepreneurs with strong commitment competency exhibit resilience, allowing them to bounce back from failures and learn from mistakes.

2.1.2 Dimensions of commitment competency

Commitment competency refers to an individual's dedication and persistence in pursuing their goals, especially in entrepreneurial or business settings. Some of the dimensions of commitment competency are as follows:

Personal drive and passion**:** These are key psychological traits that influence an individual's commitment and persistence in achieving their goals. They are essential for entrepreneurs, as they navigate business challenges and strive for success. Also, goal orientation is having a clear vision of what one wants to achieve and actively working toward it. It involves setting specific objectives, planning strategically, and taking consistent actions to reach desired outcomes. However, for women shea butter processors in Niger State, goal orientation is crucial for sustaining and growing their businesses despite challenges such as limited access to finance, competition, and market fluctuations. Subsequently, persistence and resilience is overcoming obstacles such as financial constraints and market challenges and also adapting to changing business conditions without giving up (Moshi and Matotola, 2023).

2.2 Venture Creation

The creation of new ventures is unquestionably one of the powerful ways to alleviate poverty that encourages many countries to allocate institutional, social and economic support for the ventures (Hamdi *et al.,* 2022).Thus, venture creation is a crucial aspect of entrepreneurial activities, contributing to economic development by addressing unmet market demands (Nnebuife *et al.,* 2022) More so, recent times, governments and private individuals are focused on achieving sustainable self-reliance, as such, engaging in entrepreneurship activities to supplements government effort as governments resources are limited (Łopatka, 2021).

Subsequently, venture creation is basically the process of starting a new business; this involves a wide range of activities (Mejri and Zouaoui, 2020). It is a complex procedure that is often defined as a process, starting from having the intention to form a new business, acquiring the required resources, carrying out various activities within the corridor of existing law and exchanging resources with other parties (Hamdi *et al.,* 2021).Although, there is no universally accepted definition of venture creation, resulting in a lack of agreement on what this term means (Triyono *et al.,* 2020). However, it is considered as a temporary organization in search of a scalable, repeatable, profitable business model (Davidsson, 2023).

2.1.2 Women venture creation

Women entrepreneurs are women who are involved in venture creation activities; they identify opportunities, utilize their own skills, take risks and profitably combine resources to operate an enterprise (Merung *et al.,* 2023). Furthermore, self-created businesses allow women entrepreneurs to enhance their experience, develop their skills and play an important role to cut down the discriminatory attitude for women in labor market (Noor and Isah, 2020).

Nonetheless, women involvement on entrepreneurship owned business ventures are important as women entrepreneurs create job for themselves, become productive by empower themselves economically to enable them contribute more to the overall development (Ayene and Abebe, 2020). For instance, the women shea butter processors in Minna Niger Statecontribute significantly to the economy, society, and environment through various means, including job creation, generating income and exporting shea butter and it's by products.

Conclusively, despite these contributions, women shea butter processors face challenges such as limited access to finance, poor infrastructure, and market constraints. However, improved policies, cooperative societies, and technological interventions can enhance their productivity and impact

Conceptual framework

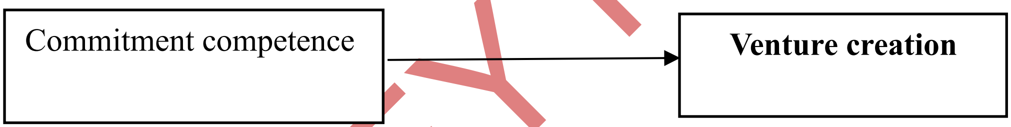

Figure 2.1: Commitment competence and venture creation.
Source: Author, (2025).

The diagram shows the relationship between commitment competence and venture creation.

3.0 Methodology

This study employed a quantitative survey research design, allowing the researcher to gather data from a large number of registered shea butter processors in Minna. The target population consisted of 78 registered women shea butter processors in Minna. The study was based on primary data which was collected through census sampling technique and data was collected through structured questionnaire. The questionnaire was pre-tested for validity and reliability before distribution to the respondents. More so, the data collected for this study was analyzed using descriptive and inferential statistical method (Regression analysis).

4.0 Results and Discussions

4.1 Demography of Respondents

The basic demographic makeup of the respondents is presented in Table 1.1

Table 1.1 Demographic Features of Respondents

S/N	Demographic Feature	Frequency	%
1	**Age**		
	< 20 Years	3	4.3
	20-29 Years	17	24.6
	30-39 Years	27	39.1
	40-49 Years	12	17.4
	50-59 Years	7	10.1
	60 years and above	3	4.3
	Total	**69**	**100**
2	**Qualification**		
	No Formal Education	1	1.4
	Primary Education	4	5.8
	Secondary Education	20	29
	Vocational/Commercial	8	11.6
	Tertiary Education	36	52.2
	Total	**69**	**100**
3	**Business Location**		
	Bosso L.G. A	30	43.5
	Chanchaga L.G. A	39	56.5
	Total	**69**	**100**
4	**Years of Experience**		
	1-3	27	39.1

4-6	15	21.7
7-10	13	18.8
>10	14	20.3
Total	**69**	**100**

Source: Author's Computation, (2025).

The data presented in Table 1.1 reveals key demographics of the respondents involved in shea butter marketing. Most respondents (39.1%) were aged between 30–39 years, followed by those aged 20–29 years (24.6%) and 40–49 years (17.4%), indicating that middle-aged women are the primary participants in this business. Regarding educational qualifications, 52.2% of respondents reported having tertiary education, 29% secondary education, and 11.6% vocational/commercial education, while only 1.4% had no formal education. This suggests that shea butter marketing in the study area is largely undertaken by educated individuals, providing livelihood opportunities for both secondary school leavers and graduates.

The table also highlights business locations and experience levels. A majority of respondents (56.5%) conducted their businesses in Chanchaga L.G.A., with the remaining 43.5% operating in Bosso L.G.A. additionally, none of the respondents had less than a year of experience, and 20% had been in the business for over a decade. This indicates that the surveyed women entrepreneurs are well-experienced, enabling them to provide reliable and insightful information, which enhances the validity and generalizability of the study's findings. The regression coefficients obtained from the analysis are extracted and presented in Table.

Table 4.2 Model Summary

Model	R	R Square	Adjusted R Square	F
1	0.784	0.615	0.591	25.554 (0.000)

Source: Author's Extraction from SPSS 23 output (2025).

Table 4.2 indicates that the model has R^2 value of 0.615 which indicates that about 62% of the total variation in venture creation can be attributed to entrepreneurial competences of women entrepreneurs in the study area while the remaining 38% can be linked to factor(s) outside the consideration of the current study. The adjusted R^2 showed a value of 0.591 indicating that the model can still accommodate additional predictor variables without a drop in the R^2 value. The model's F value is indicated in the table is 25.554 which is significant at the value of 0.000. On the whole, the model of the study shows a good fit.

Table 1.3 Regression Coefficients

Variable	Coefficient	Std. Error	Sig
Constant	-0.171	0.404	0.672
CC	0.108	0.118	0.023

Source: Author's extraction from SPSS 23 Output (2025).

Table 1.3presents the coefficients of the variables and their corresponding significance values. The constant term is -0.171, representing the value of venture creation when all entrepreneurial competence components are held constant. The hypotheses were tested at a 0.05 significance level, where a coefficient was deemed significant if the p-value was below 0.05, leading to the rejection of the null hypothesis; otherwise, the null hypothesis was retained.

The regression results in Table 1.2 indicate that commitment competence positively influences venture creation, with a coefficient value of 0.108. This implies that a one-unit increase in commitment competence leads to a 0.108-unit rise in venture creation among women shea butter marketers in Minna Metropolis. Additionally, the significance value of 0.023 is below the 0.05 threshold, confirming that this effect is statistically significant. This finding contrasts with the finding of Sutikno *et al.* (2022) who discovered that commitment has an insignificant positive effect on entrepreneurial competitiveness which was used as a measure of performance Consequently, the study rejected the null hypothesis, concluding that commitment competence significantly impacts venture creation in this context.

5.0 Conclusion and Recommendations

5.1 Conclusion

The study examined the impact of commitment competence on venture creation among women shea butter processor in Minna Metropolis using data collected through structured questionnaires from 78 marketers, of which 69 valid responses were analyzed. Employing both descriptive and inferential statistics, the study found that there is positive and significant relationship between commitment competence and venture creation among women shea butter processor in Minna metropolis at significant level of 0.023.

Recommendations

Women shea butter marketers in Minna Metropolis should prioritize commitment, as it significantly and positively impacts venture creation. Also, women shea butter marketers in Minna Metropolis should put greater premium on commitment given that it has the capability of affecting venture creation in a significant positive way. Frenetic efforts should be made to sustain its significant positive effect by ensuring that only viable opportunities, right training, incentives, and actions are carefully undertaken with commitment so as to avoid waste of resources.

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Dark Triad Traits and Entrepreneurial Intention Among Final Year Students of Federal University of Technology Minna, Nigeria

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Abstract

The increasing prevalence and expression of dark triad traits among the contemporary generation of students of higher institutions raises questions about their impact on key life choices, including entrepreneurship. This study examines the relationship between dark triad traits and entrepreneurial intention among final-year students of Federal University of Technology Minna, Nigeria. Adopting a cross-sectional survey method, the study employed Structural Equation Modeling - Partial Least Squares (SEM-PLS) for data analysis. From the perspective of the three dark triad traits, the study found the presence of machiavellianism and narcissism among the sample, but not at levels sufficient to drive entrepreneurial intention. Psychopathy, however, demonstrated a significant negative relationship with entrepreneurial intention. This suggests that its associated impulsivity and disregard for norms hinder entrepreneurial inclination. This study therefore concludes that the impact of dark triad traits in shaping students' entrepreneurial intention remains sub-optimal and recommends tertiary institutions to design entrepreneurship programs that cultivate adaptive strategic thinking and self-confidence while discouraging manipulative tendencies.

Keywords: Dark triad traits, Machiavellianism, Narcissism, Psychopathy, Entrepreneurial intention.

1.0 Introduction

For decades, theories on personality traits have served as foundational frameworks in the study of entrepreneurship providing insights into the behaviours and decision-making processes of entrepreneurs (Nurjanna *et al.*, 2022). These theories propose that personality traits not only serve as key predictors of entrepreneurial endeavours but also influence how individuals navigate the entrepreneurial process and manage the ventures they create. The Big Five taxonomy of personality traits, developed over 70 years ago (Salmony and Kanbach, 2022), has become one of the most widely adopted frameworks in psychological and entrepreneurial research. This model categorizes personality into five key dimensions namely openness, conscientiousness, extraversion, agreeableness, and neuroticism.

In recent years, the research community has increasingly adopted Dark Triad Traits (DTT) to explain certain entrepreneurial behaviours, entrepreneurial intention inclusive. These traits essentially rest on the tripod of machiavellianism, narcissism, and psychopathy and represent a distinct variance in social values that are not captured by the Big Five personality framework (Hoang *et al.*, 2024). They express behaviours and attitudes that often deviate from conventional social norms, bothering on manipulation, self-obsession, and a lack of moral restraint in the conduct of business operations.

Machiavellianism is characterized by a deeply cynical, manipulative and distrustful view of the world, often accompanied by a disregard for ethical principles (Do and Dadvari, 2017). Individuals with this trait display emotional detachment and pursue self-serving objectives through exploitation. Narcissism, in contrast, is defined by an exaggerated sense of self-importance and a desire for control, accompanied by an intense need for admiration and recognition (Do and Dadvari, 2017). This often manifests in vanity, arrogance, and a sense of superiority. Psychopathy, meanwhile, is marked by impulsivity, a lack of guilt or remorse, and indifference to societal norms (Zai *et al.*, 2020). Individuals high in psychopathy exhibit callousness, a lack of gratitude, and a disdain for authority, often showing little concern for the well-being of others.

Recent global trends, such as widespread job cuts in the tech industry, even among companies not facing financial crises, may suggest that many entrepreneurs in high-growth enterprises exhibit these traits. The ability to make such ruthless decisions that prioritize personal or company gain over employee well-being, depict the characteristics of these traits. The ruthlessness needed to build and manage high growth enterprises, combined with a detachment from moral constraints, may explain the rise of these traits among business leaders in sectors experiencing such disruptive shifts.

There remains no consensus within the research community regarding whether DTT hinder or enhance entrepreneurial outcomes. For example, Rovelli *et al.* (2023) suggested that these traits can act as catalysts for innovation amongst which is entrepreneurial intention, while Kraus et al. (2018) found insignificant negative effects in the relationship between DTT and entrepreneurial intention. Additionally, Lestari and Mutmainah (2023) highlighted that narcissism, in particular, may foster speculative behaviour, potentially exposing businesses to higher risk, while Cai *et al*. (2021)'s findings suggested that DTT have a positive and significant influence on nascent entrepreneurial behaviour. Overall, scholars such as Tucker *et al*. (2016) suggest that DTT traits may hold value within business contexts as a glimmer of light in the dark shade. Personality traits manifest in observable behaviours, influencing individuals' entrepreneurial tendencies as manifested in relevant actions and inactions both of which hinging on entrepreneurial intention.

This study was motivated by patterns of DTT observed among the contemporary undergraduate students on various campuses (Wood et al., 2021; Li and Benson, 2022). In a country such as Nigeria where employment opportunities are highly limited, graduates may not pursue entrepreneurship out of choice but as a means to overcome the constraints imposed by the constricted job market. As such, the extent to which the inherent DTT shape their entrepreneurial intentions forms the focus of this study.

This study, therefore, specifically attempts to evaluate the influence of the dimensions of DTT, namely machiavellianism, narcissism, and psychopathy on the entrepreneurial intentions of final year students of Federal University of Technology Minna, Nigeria, particularly in the context of Nigeria's constrained employment market. Hence the following hypotheses:

(i) H_1: Machiavellianism does not significantly affect entrepreneurial intention among final year students of FUTM, Nigeria.

(ii) H_2: Narcissism does not significantly affect entrepreneurial intention among final year students of FUTM, Nigeria.

(iii) H_3: Psychopathy does not significantly affect entrepreneurial intention among final year students of FUTM, Nigeria.

2.0 Literature Review

2.1 Conceptual Review

This subsection presents a review of the foremost variables of the study, namely the dark triad traits and entrepreneurial intention.

2.1.1 Dark Triad Traits

The dimensions of DTT - namely machiavellianism, Narcissism and psychopathy - are herein reviewed.

i. Machiavellianism

Machiavellianism is rooted in the political philosophy of Niccolò Machiavelli who emphasized strategic manipulation, cunning, and the disposition to exploit others to achieve one's ultimate goal (Cai et al., 2021). Individuals high on *Machiavellianism trait* are adept at masking their true intentions (Wu et al., 2019b), often presenting a facade of cooperation while pursuing self-interest (Hanson et al., 2024). This trait is characterized by a strong focus on power (Bouncken et al., 2020), a lack of moral scruples and a high degree of opportunism (Yu et al., 2020). *Machiavellianism* has been shown to significantly influence the choice of occupation, particularly drawing individuals toward careers that offer autonomy and a high degree of control over outcomes (Kay and Saucier, 2020). Occupations that provide a sense of personal power and flexibility, such as entrepreneurship, act as a magnet for individuals with high Machiavellian tendencies. The freedom to make decisions, exercise control, and exploit opportunities without external oversight aligns seamlessly with their desire for success and dominance regardless of the costs, aided by strategic maneuvering.

Machiavellianism is often denounced as an anti-social trait due to its association with manipulation, exploitation, and a lack of ethical concern (Beram et al., 2021). However, in highly competitive environments, the traits associated with Machiavellianism can offer a strategic advantage (Leonelli et al., 2020).

ii. Narcissism

Narcissism is a personality trait characterized by exhibitionism, an inflated sense of self-importance, and a desire for admirations (Wu et al., 2019b; Al-Ghazali and Afsar, 2021).This trait imbues individuals with a natural charm and charisma, qualities often linked to leadership (Hmieleski and Lerner, 2016) and self-promotion. Individuals exhibiting high levels of narcissism often have heightened self-confidence, which drives to undertake risk with a sense of assurance. Individuals with narcissistic tendencies are often driven by a desire for validation and achievement, which predisposes them to embrace entrepreneurship, where calculated risk-taking is central to business success. In venture creation, this trait can be advantageous as the strong sense of self-assurance typical of narcissistic individuals often translates into high levels of motivation, allowing them to push through the uncertainty and challenges that accompany new business creation.

Moreover, successful entrepreneurs are frequently celebrated and regarded as role models in society. This admiration and recognition serve as external validation that reinforces their ego and drive for continued success. Narcissistic individuals thrive on this recognition, as it not only satisfies their need for admiration but also validates their self-perception as high achievers (Baldegger et al., 2017). Previous studies have demonstrated that narcissism is a multi-dimensional construct with distinct behavioural patterns and features (Li and Benson 2022). For instance, Baldegger et al. (2017) differentiated between adaptive and maladaptive narcissism, while Mota et al. (2023) identified two dimensions: assertive and antagonistic. These distinctions suggest that narcissism may manifest in various forms, each with unique implications for individual behaviour and social interactions. Adaptive narcissism, often associated with self-confidence and resilience, can contribute positively to personal goals and relationships. In contrast, maladaptive narcissism, which aligns with traits like entitlement and exploitativeness, is linked to negative and anti-social behaviour such as rivalry and aggressive tendencies (Baldegger et al., 2017).

iii. Psychopathy

Psychopathy is characterized by diminished moral and emotional control (Walker et al., 2020), often manifesting through lack of empathy and an indifference to social norms. Individuals exhibiting psychopathic traits may struggle to regulate their behaviours and emotions in socially acceptable ways and more eager to engage in behaviours viewed as anti-social (McLarty et al., 2020). In addition, McLarty et al. (2020) observed that individuals with psychopathic traits often display superficial charm and verbal fluency which they can selectively employ to manipulate others. This charm allows them to disarm unsuspecting individuals, creating a false sense of trust and familiarity. Sahinidis et al. (2023) also suggested that psychopathic individuals exhibit indifference to risk or loss which reduce the anxiety about failure typically experienced by those without such tendencies.

This personality trait can have some implications in the context of entrepreneurship. On one hand, the fearlessness associated with psychopathy may allow entrepreneurs to pursue high-risk, high-reward opportunities with confidence (Morgan and Sisak, 2016). This reduced fear of failure could drive innovation and quick decision making with minimal hesitation in a fast paced industry. However, lack of emotional sensitivity and empathy can lead to exploitative practices which can potentially damage relationships with partners and employees (Mathieu et al., 2020).

2.1.2 Entrepreneurial Intention

In an effort to understand the motivation behind the expression of entrepreneurial behaviour, researchers have had to look towards Entrepreneurial Intention (EI) to shed light on the mental and motivational processes that precede entrepreneurial action. Sahinidis et al. (2023) defined EI as a "recognised belief of an individual intending to launch a new business activity". Brownell et al. (2021) provided a more nuanced description EI as a "conscious state of mind directing behaviour, personal attention, and experience towards planned entrepreneurial action, at some point in the future which can be imminent, indeterminate, or never reached". In this context, EI can be understood as a state of awareness that drives individuals to align their attention and behaviour toward future entrepreneurial pursuits, regardless of whether these ventures are imminent, uncertain, or never realized. It is considered an essential determinant of entrepreneurial behaviour and the psychological precursor to the creation of new ventures and the exploitation of market opportunities (Wu et al., 2019a; Schlägel et al., 2021).

The nexus between DTT and EI is a growing domain of interest in entrepreneurship research as the dark triad traits are often associated with characteristics that can influence entrepreneurial intentions especially in aspects related to risk taking, self-confidence, opportunism, unconventional decision making, among others.

2.2 Theoretical Underpinnings

With respect to DTT-EI nexus, two theories are closely relevant, namely the theory of planned behaviour (TPB) and the entrepreneurial event theory.

2.2.1 Theory of Planned Behaviour (TPB)

EI is primarily explained through the lens of the theory of planned behaviour (TPB) (Kautonen et al., 2015; Su et al., 2021; Sahinidis et al., 2023). This inclination towards TPB is understandable due to its strong relevance in reliably explaining the constructs of self-efficacy and attitudes, which serve as the principal psychological foundations of EI. However, while TPB provides a solid framework for understanding how intention leads to entrepreneurial action, it may only be relevant in explaining opportunity-driven entrepreneurial behaviour because it focuses primarily on deliberate, planned actions based on perceived control and intentional decision-making (Alferaih, 2017).

The current study suggests that predicting an individual entrepreneurial intention in an environment where high unemployment rates and limited formal job opportunities are rampant may not be reliable. The economic landscape forces many individuals to consider entrepreneurship not as an aspirational goal, but as a necessary means of survival. In this case, the entrepreneurial event theory postulated by Shapero and Sokol in 1982 is apt for this study for contextual reasons.

2.2.2 The Entrepreneurial Event Theory (TEET)

The hardcore of Shapero and Sokol (1975)'s entrepreneurial event theory emphasizes that entrepreneurial activity is triggered by a displacement event, an external disruption that disturbs an individual's state of inertia. This disruption initiates a decision-making process in which the individual evaluates the perceived desirability and feasibility of entrepreneurial action, alongside their propensity to act. Within this theoretical framework, a clear distinction can be drawn between opportunity-driven and necessity-driven entrepreneurship. For final-year students in Nigeria, the transition from the relatively structured environment of tertiary education into an uncertain labour market represents a significant displacement event. As they encounter new challenges and begin to redefine their professional identities, many are confronted with limited employment prospects, especially in a context where job opportunities are highly limited.

In such an environment, entrepreneurship is not necessarily a voluntary pursuit but may emerge as a pragmatic response to the constraints of the shrinking job market. In light of this, individuals high in dark triad traits are more likely to exhibit the darker aspects of their personality, capitalizing on scarce opportunities by leveraging traits such as manipulation, egocentrism, and risk-taking to navigate the competitive and constrained employment landscape. These traits may provide a psychological advantage in pursuing entrepreneurial ventures in a context where traditional job opportunities are limited (Cai et al., 2021).

2.3 Empirical Review

Wu et al. (2019a) and McLarty et al. (2023) reported that machiavellianism had a positive, statistically significant effect on EI which suggest that individuals high in Machiavellian traits are more likely to pursue entrepreneurial endeavours. These findings suggest that rather than merely constituting a maladaptive trait, machiavellianism can function as a pragmatic tool in competitive and resource-scarce contexts, where strategic social influence is paramount.

In contexts such as Nigeria, where graduates contend with a precarious job market and high youth unemployment, the opportunistic tendencies associated with machiavellianism may become crucial for launching entrepreneurial ventures. As students near the end of their academic journey, a significant number may be compelled to pursue self-employment as a survival strategy. In such situations, Machiavellian traits could prove essential in enabling students to exploit opportunities, secure resources, and establish networks necessary for business success

Empirically exploring the relationship between narcissism and Entrepreneurial Intention (EI), Kramer et al. (2021) reported significant positive correlations between narcissism and various sub-factors in Krueger's model of EI which indicates its potential influence on entrepreneurial motivation. Similarly, Baldegger and Klösel (2023) identified significant, albeit somewhat weaker, correlations between narcissism and EI, suggesting that while narcissistic traits may contribute to entrepreneurial ambition, their impact may vary depending on specific sub-dimensions of narcissism and contextual factors.

Narcissism, as a personality trait, has significant implications for entrepreneurship. Liu and Benson (2022) observed that narcissism can hinder entrepreneurs in discovering opportunities, acquiring resources, and learning from failures, largely due to the pride characteristic of narcissists. Additionally, narcissism has been associated with increased interpersonal conflicts and ineffective management practices (Young et al., 2016), both of which can impede venture growth and organizational cohesion. However, narcissism is not entirely negative. Wu et al. (2019b) argued that narcissistic traits, such as self-confidence and risk tolerance, can increase entrepreneurial intentions and a willingness to pursue high-stakes ventures. This seeming duality suggests the direction of the effect of narcissism on entrepreneurial intentions remains inconclusive, making a further empirical enquiry into the nexus a worthwhile venture.

On psychopathy-EI nexus, Brownell et al. (2021) and Bouncken et al. (2020) observed that psychopathy can serve as a useful asset for individuals attempting to start new ventures. Similarly, Wang et al. (2016) suggested that psychopathic individuals often exhibit innovative tendencies, which are prominent features of entrepreneurial intentions. The relevance of psychopathy in stimulating entrepreneurial intention can be attributed to their lack of emotional inhibition in pursuing personal goals focusing on outcomes rather than consequences.

On the other hand, studies by Wu et al. (2019b) and Khawar et al. (2022) found no significant association between psychopathy and EI. While certain psychopathic traits such as fearlessness and risk tolerance, may offer advantages in entrepreneurial settings, they do not necessarily increase the likelihood of pursuing entrepreneurship. One possible explanation is that the interpersonal and antisocial dimensions of psychopathy, including impulsivity and a disregard for ethical considerations, undermine these potential benefits. Entrepreneurs often depend on social capital, trust-based relationships, and long-term strategic planning. However, the manipulative and exploitative tendencies linked to psychopathy may weaken these essential foundations (Mathieu et al., 2020).

In a nutshell, the extant empirical literature on the DTT-EI nexus have depicted four (4) strands of relationship, namely positive, negative, bidirectional and no relationship. By implication, the foregoing demonstrates that the extant empirical literature on the DTT-EI nexus is far from being consensual, thereby making a further empirical enquiry into the nexus a worthwhile research undertaking.

3.0 Methodology

This section presents an outline of the methodology employed by the study.

3.1 Research Design

This study employed an ex-post facto quantitative cross-sectional survey design to execute the specific objectives of the study. The design is ex-post facto in the sense that it utilized readily available information from the research sample, without having to build the information overtime into the future. The design is quantitative in that it used scales to transform the information provided by the respondents into numerical data. The design is cross-sectional as it utilized the available information at the point of the survey, without having to go into the historical evolution of the pieces of information.

The choice of this design is informed by its sufficiency to achieve the research objectives adequately.

3.2 Sample and Sampling Technique

The study population consists of final-year undergraduate students of Federal University of Technology, Minna (FUTM), Nigeria who have been exposed to entrepreneurship courses. Previous empirical studies indicate that students are an appropriate research objects when investigating entrepreneurial intentions (Cai et al., 2021; Hmieleski and Lerner, 2016). This focus is particularly relevant in the Nigerian context, where entrepreneurship courses are taught to facilitate students' choice of entrepreneurship as a viable alternative to highly limited employment opportunities, making them an ideal group for studying entrepreneurial intention. Based on records from the Registrar's office, there were 4,134 registered final-year students in the 2023/2024 academic session. The deployment of Singh and Masuku (2014) formula for sample size determination in large populations produced a sample size of 352, which ensure representativeness.

A simple random sampling technique was then applied to allow each student an equal chance of selection, thus enhancing the generalizability of the findings.

3.3 Data Collection

To ease data collection, hostel and class representatives assisted in distributing and collecting the questionnaires during students' free time to ensure a comfortable environment for completing the survey. Out of 352 questionnaires, 329 were returned (93.4% response rate). The questionnaires were initially screened to remove incomplete responses, 314 were properly filled and deemed usable for analysis.

3.4 Measurement of Variables

The dark triad dimensions were adapted from Short Dark Triad (SD3) scale developed by Jones and Paulhus (2015). The SD3 is a widely validated 27-item questionnaire, with 9 items allocated to each dimension. Responses were recorded using a 5-point Likert scale ranging from 1 ("Strongly Disagree") to 5 ("Strongly Agree") to quantify participants' tendencies across the three dimensions.

The entrepreneurial intention (EI) construct was assessed using a scale developed by Valliere (2017). Unlike most previous instruments employed in measuring EI, this scale avoids conflation with constructs associated with the theory of planned behaviour, thereby providing a more precise measure of entrepreneurial intention.

3.5 Instrument and Model Reliability and Validity

The measurement model was tested to ensure reliability and validity. Factor loadings, Cronbach's alpha, and composite reliability (CR) confirmed internal consistency, while the average variance extracted (AVE) established convergent validity. Discriminant validity was verified using the HTMT to ensure that each construct was distinct from others.

The results presented in table 1 in section 4.0 confirm that the measurement model is both reliable and valid.

4.0 Results and Discussion

4.1 Presentation of Results

The results of the two-step SEM-PLS analysis on the assessment of the measurement model and evaluation of the structural model are presented in this section.

4.1.1 Reliability and Validity Tests

Table 1 presents the results of the model reliability and validity tests.

Table 1: Reliability and Validity Tests

	Cronbach's alpha	Composite reliability (rho_c)	Average variance extracted (AVE)
EI	0.802	0.852	0.511
Mac	0.744	0.818	0.534
Nas	0.829	0.851	0.501
Psy	0.707	0.805	0.508

Source: Authors' computation, 2025

The results show that Cronbach's alpha values for all constructs exceed the acceptable threshold of 0.7, indicating satisfactory internal consistency. Similarly, the composite reliability (CR) values are above 0.8, confirming the reliability of the measurement model. The AVE values for all constructs surpass the minimum threshold of 0.5, demonstrating adequate convergent validity and ensuring that each construct explains a significant portion of its variance. These results confirm that the measurement model is both reliable and valid.

4.1.2 Test for Discriminant Validity and Serial Correlation

Table 2 presents the Heterotrait-Monotrait ratio (HTMT), a measure of discriminant validity znd serial correlation.

Table 2: Test for Discriminant Validity and Serial Correlation

	Heterotrait-monotrait ratio (HTMT)
Mac <-> EI	0.133
Nas <-> EI	0.09
Nas <-> Mac	0.076
Psy <-> EI	0.12
Psy <-> Mac	0.114
Psy <-> Nas	0.131

Source: Authors' computation, 2025.

The values for all construct pairs fall well below the conservative threshold of 0.85 (Hair et al., 2019), which indicates that the constructs are empirically distinct. The HTMT values for the relationships between entrepreneurial intention and Machiavellianism (0.133), narcissism (0.09), and psychopathy (0.12) suggest that these traits are not excessively overlapping with entrepreneurial intention, supporting the model's discriminant validity. Similarly, the intercorrelations among the dark triad traits—Machiavellianism and narcissism (0.076), psychopathy and Machiavellianism (0.114), and psychopathy and narcissism (0.131), all remain within acceptable limits confirming that each trait captures a unique psychological dimension. These results strengthen the credibility of the findings by ensuring that the constructs measure distinct but related concepts.

4.1.3 Model Fitness

Table 3 presents the results assessing the overall fitness or representativeness of the structural equation model.

Table 3: Model Fitness

FIT Indices	**Current model values**	**Good and Acceptable fit level values**
ChiSqr/df	1.251	≤ 3.0 Tabachnick and Fidell, 2007

CFI	0.973	≥ 0.97 (Hu and Bentler, 1999)
TLI	0.969	≥ 0.95 (Schumacker and Lomax, 2004)
AGFI	0.922	≥ 0.85 (Hooper et al., 2008)
GFI	0.939	≥ 0.85 (Hooper et al., 2008)
SRMR	0.042	≤ 0.06–0.08 (Meydan et al., 2011)
RMSEA	0.028	≤ 0.06–0.08 (Meydan et al., 2011)

Source: Authors, 2025

The values for key indices, including CFI, TLI, AGFI, and GFI, indicate a well-fitting model, as they meet or exceed the established thresholds for a good fit. This reinforces the robustness of the findings of this study.

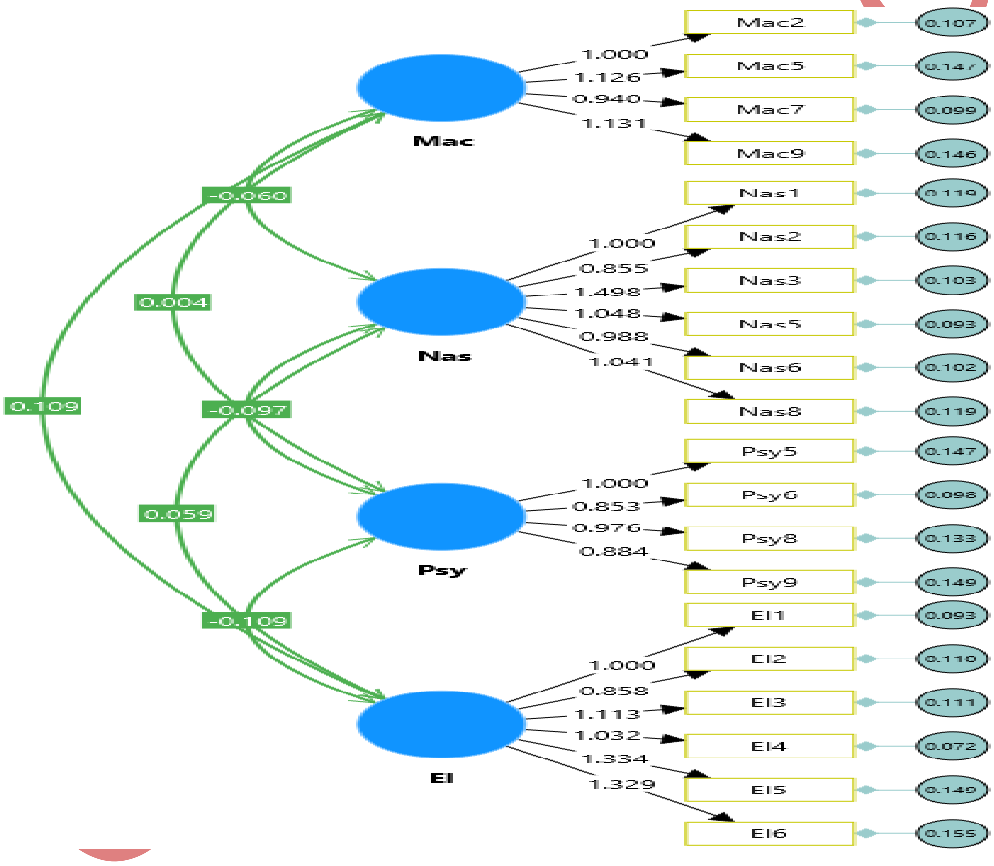

Figure 1: CFA Model Fit
Source: Authors, 2025

4.1.4 Hypotheses Testing

Table 4 presents the SEM-PLS results used in assessing the hypothesized relationships between dark triad traits and entrepreneurial intention.

Table 4: Test of Hypotheses

	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
Mac -> EI	0.098	1.142	0.254
Nas -> EI	0.08	0.706	0.48
Psy -> EI	0.047	2.232	0.026

i. H_1: Machiavellianism does not significantly affect entrepreneurial intention among final year students of FUTM, Nigeria.

The path coefficient for Machiavellianism (Mac → EI) is **0.112**, indicating a weak positive relationship. However, the relationship is not statistically significant (**p = 0.254**, **t = 1.142**) since the p-value exceeds the 0.05 threshold. This suggests that Machiavellian traits, such as manipulation and strategic planning, do not strongly predict entrepreneurial intention.

ii. H_2: Narcissism does not significantly affect entrepreneurial intention among final year students of FUTM, Nigeria

The path coefficient for narcissism (Nas → EI) is **0.057**, showing a weak positive relationship. However, the effect is not statistically significant (**p = 0.48**, **t = 0.706**) which shows that narcissistic tendencies, such as self-confidence and grandiosity, do not significantly influence entrepreneurial intention.

iii. H_3: Psychopathy does not significantly affect entrepreneurial intention among final year students of FUTM, Nigeria

The path coefficient for psychopathy (Psy → EI) is **-0.104**, revealing a weak negative relationship. However, this result is statistically significant (**p = 0.026**, **t = 2.232**), meaning that individuals with higher psychopathy traits are less likely to have entrepreneurial intentions.

4.1.5 Path Coefficients & R-Square

Figure 2 provides the graphical representation of the path coefficients and R Square values.

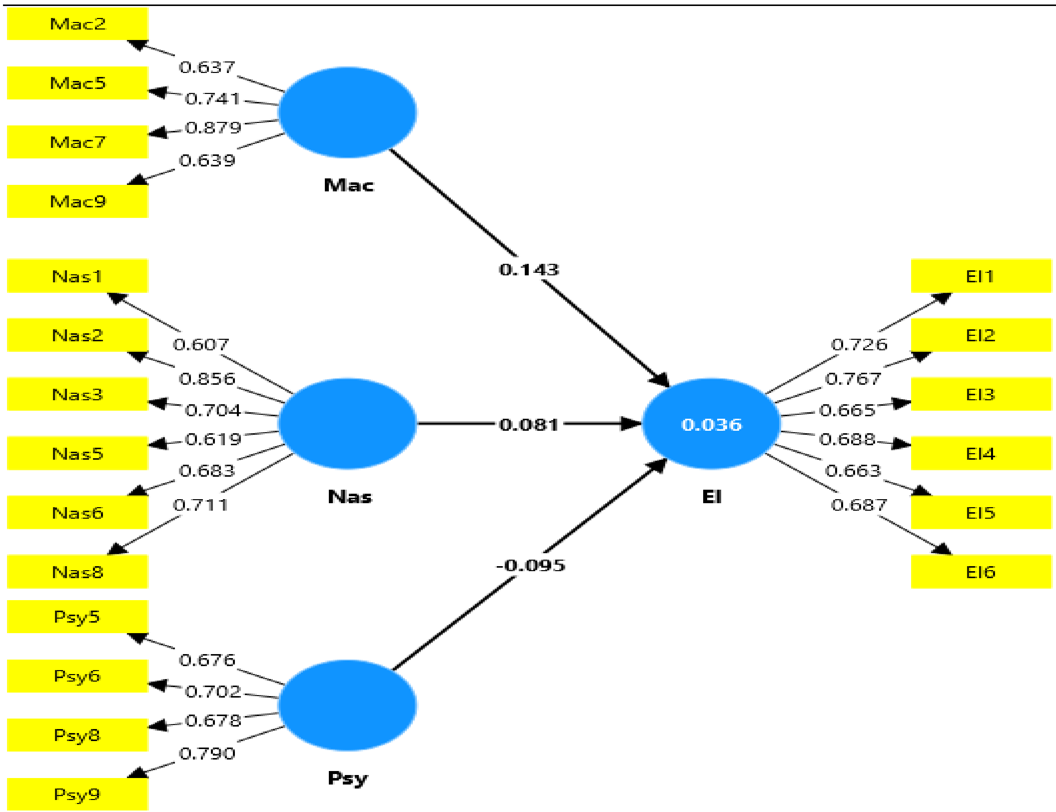

Figure 2: Structural Model
Source: Authors, 2025

The path coefficients suggest weak relationships between dark triad traits and entrepreneurial intention. Machiavellianism (**0.143**) and narcissism (**0.081**) show slight positive associations, while psychopathy (**-0.095**) is negatively related to entrepreneurial intention. Similarly, the explanatory power of these traits is minimal, as indicated by the **low R^2 value of 0.036,** meaning that dark triad traits collectively account for only 3.6% of the variance in entrepreneurial intention.

This weak predictive power is not unexpected, given the cultural and social context in Nigeria. The expression of dark triad traits is often met with disapproval, particularly among students who remain under the watchful eyes of parents and guardians. In many Nigerian homes, strict religious teachings and societal norms reinforce obedience, humility, and conformity. Divergent behaviours, especially one that hints at manipulation, self-centeredness, or defiance, are not just discouraged but often punished. Young individuals, particularly students, are conditioned to suppress such traits, making it unlikely that they would strongly influence entrepreneurial intention.

4.2 Discussion

This study found out that there exists a weak positive relationship between Machiavellianism and EI. This is a divergence from the findings of studies like Wu et al. (2019a); Yu *et al.,* 2020 and McLarty et al. (2023) which reported that Machiavellianism had a positive, statistically significant effect on EI, suggesting that individuals high in Machiavellian traits are more likely to pursue entrepreneurial ventures. The weak, statistically insignificant relationship may be attributed to cultural and social factors that suppress the open expression of Machiavellian tendencies. Consequently, Machiavellian traits, even if present, may not translate into entrepreneurial intentions as readily as observed in other cultural contexts.

Similarly, this study finds a weak, non-statistically significant relationship between narcissism and entrepreneurial intention. This also contrsts the findings of Kramer et al. (2021) and Baldegger and Klösel (2023) which reported significant but weak positive correlations between narcissism and entrepreneurial intention. While narcissistic tendencies may still exist among students, social norms likely constrain their outward expression, thereby weakening their observable influence on entrepreneurial ambition. This suggests that although narcissism may contribute to entrepreneurial intention in other contexts, its impact within this setting could be moderated by other factors such as deeply ingrained cultural expectations.

Finally, the findings of this study revealed a **negative and statistically significant** relationship between psychopathy and entrepreneurial intention. This diverges from the findings of Wu et al. (2019b) and Khawar et al. (2022), which reported no significant association between the two variables. The negative influence of psychopathy on entrepreneurial intention suggests that individuals with high psychopathic traits in this sample are less likely to pursue entrepreneurial ventures. This finding may be explained by the nature of psychopathy itself, which is often associated with impulsivity, lack of empathy, and aversion to long-term planning. While some studies suggest that certain aspects of psychopathy, such as fearlessness and risk-taking, may foster entrepreneurial behaviour, these traits alone may not be sufficient in an environment where social capital, trust, and ethical considerations play crucial roles in business success.

In Nigeria, where moral and religious values are deeply embedded in societal structures, individuals who exhibit psychopathic traits may face stronger social sanctions that discourage entrepreneurial pursuits. As a result, the impulsivity and risk-taking tendencies associated with psychopathy may not translate into genuine entrepreneurial ambition within this context with the absence of reliable infrastructures and business support services which are the hallmarks of ease of doing business in advanced economies.

5.0 Conclusion, Recommendations and Suggestions for Further Study

This study deepens the understanding of entrepreneurial intention by examining how dark triad traits shape students' entrepreneurial intention. The findings hold important implications for educators, policymakers, and psychologists. Given that Machiavellianism and narcissism, though present, do not significantly predict entrepreneurial intention, universities should consider entrepreneurship programs that foster adaptive strategic thinking and self-confidence while discouraging manipulative tendencies. Additionally, the negative association between psychopathy and entrepreneurial intention suggests that risk-taking alone is insufficient for entrepreneurial success. Interventions aimed at improving self-regulation, long-term planning, and ethical decision-making may be beneficial in shaping students' entrepreneurial ambitions.

From a broader perspective, this study supports the need for curriculum developers to integrate entrepreneurial education that gives adequate attention to the personality of students. Entrepreneurial training should not only focus on technical skills but also incorporate psychological resilience that help students navigate uncertainty. Moreover, career counsellors and psychologists may find value in understanding how dark personality traits manifest within structured academic environments and influence career choices, particularly in regions where cultural and religious norms suppress certain personality expressions.

Despite its contributions, this study is not without limitations. The sample was drawn from a single institution, which may limit the generalizability of findings to the broader student population in Nigeria. Future research should expand the sample to include students from diverse universities and academic disciplines to provide a more nuanced understanding of the DTT-EI nexus.. Furthermore, the study relied on a cross-sectional design, which does not account for how these traits and entrepreneurial intention evolve over time. A longitudinal approach would offer deeper insights into the stability of these relationships across different stages of students' academic and professional lives.

Additionally, while this study focused on the dark triad, emerging literature suggests that a fourth trait named sadism may also play a role in entrepreneurial behaviour. Future research should explore the impact of sadism alongside the existing triad to determine whether its inclusion enhances the explanatory power of the model. Lastly, measurement limitations, particularly the removal of several items from Machiavellianism and psychopathy constructs, may have influenced the results. Future studies should consider refining these scales or adopting alternative measures that better capture these traits within Nigerian context.

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The Role of Digital Advertising Strategies on Rabbit Farming Growth and Market Access in Ilorin, Kwara State

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Abstract

This paper examines the role of digital advertising strategies on the growth and market accessibility of rabbit farming in Ilorin, Kwara State. This policy syndrome explains how, despite global expansion of digital marketing, most rabbit farmers in Ilorin still rely on conventional modes, hindering their market reach and profitability. Adopting the Technology Acceptance Model (TAM) as a framework, the paper examines the level of awareness, adoption, and effectiveness of digital advertising platforms, such as Facebook, WhatsApp, and Instagram in addressing marketing problems. A descriptive survey of 50 rabbit farmers revealed that only 25% actively utilize digital platforms, with Facebook being the most popular. Regression analysis demonstrated a significant positive relationship between the use of digital advertising and both market accessibility ($R^2 = 0.65$, $p < 0.05$) and profitability ($R^2 = 0.62$, $p < 0.05$). While these values show the percentage of variation in market accessibility and profitability explained by the adoption of digital advertising, they do not demonstrate a direct causal effect. However, the results accentuate the innovative ability of digital platforms in improving visibility and customer engagement for smallholder farming. To optimize these benefits, the paper proposes offering financial backing, employing skill development programs focused on digital adoption, and investing in dependable internet setups. By tackling the aforementioned, this research intends to contribute to the existing literature by reducing the gap between digital marketing practices and their application in suburban farming context, eventually fostering growth in the cuniculture sector.

Keywords: Cuniculture, Digital Advertising, Market Accessibility, Profitability, Rabbit Farming

Introduction

Farming has been a major occupation in Africa, especially Nigeria, providing jobs for most Nigerians within the respective chains in the sector. It has been a major source of government revenue before the discovery of oil, and a vital sector that subsequent governments have been focusing on. Most especially to reduce the burden of mono-economy that dependence on oil had left the country. Cultivation of land and crop production is however not the only aspect in agriculture, livestock farming is becoming a cash cow within the sector. Among livestock farming, rabbit farming also known as cuniculture, is gaining recognition as an alternative source of income and protein-rich food. The rapid rate of reproduction, low capital requirements, and the increasing demand for rabbit meat and its by-products makes rabbit farming alluring (Akinmutimi & Ocheja, 2020). It is greatly valued for its superior nutritional composition, lean quality, and mild flavour, making it a favorite choice among health-conscious consumers. These qualities contribute to its appeal as one of the healthiest and required meat choices (Etukudo, Ekerette, Johnson, & Okon, 2024). In Ilorin, Kwara State, cuniculture has a lot of challenges, including limited market access, poor awareness, and inefficient marketing strategies.

The introduction of the internet, basically transformed marketing communications. Prior to the introduction, marketing communication were basically done through platforms such as radio, television, magazines and other conventional platforms. Internet introduction, led to social media platforms such as Facebook, Instagram, WhatsApp, and Google Ads. These platforms demonstrate effective and efficient ways of reaching target audiences in an optimal way (Chaffey, 2022). Irrespective of the means used, either traditional or digital, the primary goal of marketing communication, is to deliver appropriate messages to the right audience in the most efficient ways.

One primary benefit of utilizing digital marketing strategy is the ability to interact, enhancing mutual communication, which allows almost immediate feedback. This interactivity coupled with diverse platforms and digital plan allows a seamless and personalized connections (Rizvanović, Zutshi, Grilo, & Nodehi, 2023). Information and communication are basic agricultural inputs that can stimulates increased outputs (Peter, Ogara, & Mugumbate, 2023). For small-scale rabbit farmers, these platforms would increase visibility, create good relationship and lead to increased market share, which would invariably lead to competitive advantage (Adeyemi & Ojo, 2021).

Notwithstanding the benefits of utilizing digital marketing strategies, many farmers in Ilorin still make use of conventional marketing methods such as word-of-mouth and local market sales. These often reduce their marketing coverage and ability to effectively compete in the livestock agricultural sub-sector. The inadequacy in technical knowledge, inadequate capital, and poor infrastructure network, also pose additional challenges to the adoption of digital marketing communication. Ease customers outreach, high connectivity and ability to interact almost immediately are end results of digital marketing (Kumar & Sharma, 2022).it is no doubt that the adoption of digital marketing communication would open better growth prospects and reduce challenges faced by rabbit farmers. If well utilized, it could also lead to borderless marketing.

Most researches on digital marketing strategies have basically concentrated on other areas of livestock and larger scale farming, creating an obvious gap to its importance to rabbit farming (Eze & Nwankwo, 2019). Large scale farming usually has better access to infrastructure and access to digital tools, compared to rabbit farming which is usually a small-scale farming, with series of associated problems. These problems like limited access to internet, low level of digital literacy and low awareness level of digital marketing communication platforms. All these have led to low level of usage of digital marketing platforms, especially in the area of study.

Cuniculture is a special farming within the agricultural sector, that needs creative methods to market, especially, since it is seen as a game meat. Different from other livestock that is seen as regular and frequently purchased. It is thus imperative to look for ways to create more marketing potentials for it. Therefore, adopting digital advertising strategies in this regard is necessary. Understanding how platforms like Facebook, WhatsApp, and Instagram can improve the reach and profitability of rabbit farming enterprises in a semi-urban context like Ilorin and offer valuable understandings. This exploration could bridge the gap between digital marketing theory and its practical applications in smaller agricultural enterprises, promoting inclusivity and sustainable growth in the sector. The research employed a descriptive survey methodology, using purposive sampling to 50 rabbit farmers in Ilorin. Data were gathered through structured questionnaires and analysed using descriptive statistics and regression analysis to examine the adoption of digital advertising and its effects on market access and profitability.

Statement of Problem

Rabbit farming is becoming a profitable niche in livestock sector in Nigeria, specifically in Ilorin, Kwara State, yet it still encounters various marketing challenge. Although rabbit meat offers significant nutritional and economic benefits, it is still under-commercialized. This is basically due to restricted market access, a lack of consumer awareness, and the prevalence of conventional marketing approaches. The conventional approaches limit the scale and competitiveness of rabbit farming businesses, leading to low profitability and growth.

Conversely, digital advertising platforms like Facebook, WhatsApp, and Instagram provide creative and cost-effective means to connect with wider audiences, increase visibility, and improve farmer-to-consumer engagement. However, the adoption of such tools among small-scale rabbit farmers is still minimal, primarily due to limited digital literacy, poor infrastructure, and inadequate exposure to modern marketing techniques.

Although numerous studies have investigated digital marketing within wider agricultural frameworks, there remains a distinct lack of empirical evidence focused on rabbit farming, especially in semi-urban regions such as Ilorin. This study aims to fill that gap by exploring the impact of digital advertising strategies on the growth, market accessibility, and profitability of rabbit farming enterprises. Grasping this relationship is essential for enabling farmers and guiding focused interventions designed to foster inclusive growth and innovation in the livestock sector.

Objectives of the Study

The broad objective of this study is to examine the roles of digital advertising strategies on rabbit farming growth and market accessibility in Ilorin, Kwara State. The specific objectives are to:

i. evaluate the level of awareness and adoption of digital advertising among rabbit farmers in Ilorin.
ii. ascertain the relationship between digital advertising efforts and the profitability of rabbit farming.

Literature Review

Digital marketing communication is the application of platforms that make use of software and tools to reach target audiences, usually via internet connection. Farmers could make use of these platforms to advertise their rabbits and its by-products. Platforms such as Telegram, Facebook, Instagram, Snapchat and other available digital and electronic media. These tools are very effective and reliable in getting marketing messages to the intended audiences at an almost immediate speed (Chaffey, 2022). Another advantage is the ability for visuals on most of these platforms, making marketing an interaction, where both buyer and seller can visualize the product and negotiate.

Within the context of rabbit farming, digital marketing could be used in assisting in creating markets for the numerous products from rabbit farming. These products could include the meat, fur, urine, and other related products and services within the chain of the farming. Stakeholders within the sub-sector, could be feed producers, hoteliers, bars. An effective digital marketing strategies would be needed to harness the wide opportunities that abound within the sector. When strategically planned, appropriate messages can go viral and lead to sales. This will definitely widen the market coverage of such farmers that utilize these digital platforms.

Rabbit farming is known to be highly beneficial, especially since it requires low capital startups, rapid reproduction, minimal space requirement and healthy meat (Akinmutimi & Ocheja, 2020). Notwithstanding the aforementioned benefits, rabbit farming faces some problems like low consumer awareness, low sales and too much reliance on conventional marketing efforts. These have greatly affected most farmers from tapping from the abundant wealth that abound from this farming.

In Ilorin, Kwara State, these challenges are exacerbated by infrastructural limitations and a lack of integration with modern marketing channels. This study conceptualizes digital advertising as a transformative tool to address these barriers. Which also can help in the market expansion, awareness creation and lead to growth in the sub-sector. An effective, monitored advertisement through digital platforms can improve the attractiveness of rabbit farming and reposition it into an attractive venture.

The study is anchored on the **Technology Acceptance Model (TAM)**, which posits that the adoption of new technologies, such as digital advertising platforms, is influenced by two key factors: perceived usefulness and perceived ease of use (Davis, 1989). In the context of rabbit farming, farmers are more likely to adopt digital advertising if they perceive it as beneficial for increasing market accessibility and profitability, and if they find the platforms easy to use. The TAM provides a theoretical lens to examine how rabbit farmers' attitudes and perceptions influence their adoption of digital advertising strategies.

Rameshkumar (2022) carried out a study on the impact of digital marketing in agricultural sector in India, with a specific interest on farmers' perception, awareness and impact of digital marketing in agricultural sector during Covid-19 pandemic. The study collected primary data from 120 respondents, and the data were analysed using percentages, frequencies and Chi-square tests. Findings indicated that digital marketing plays a vital role during the pandemic by aiding farmers to secure better prices for their products and reduce costs, invariably enhancing their economic resilience during the period.

Ebarefimia, Ajose, Aliu, and Moyosore (2024) examined the impact of digital marketing on agricultural product sales with specific reference to smallholder farmers in Nigeria. The research gathered responses from 100 respondents from Ogun State, Nigeria. Data were analysed using descriptive statistics such as mean, standard deviation, skewness and Kurtosis. Findings revealed that despite the potential of digital marketing to boost income and improve sales of farmers in Nigeria, no significant impact on sales was seen. It also revealed that the farmers lack required expertise to utilize digital marketing strategies.

Akinmutimi and Ocheja (2020) carried out a study to examine the challenges faced by rabbit farmers in Nigeria, specifically in relation to market access and marketing strategies. The objective was to examine the effectiveness of existing marketing methods and explore improvements. Using a qualitative approach, the study gathered data from rabbit farmers through interviews and observational methods. The findings revealed that farmers primarily relied on conventional marketing techniques such as local market sales and word-of-mouth, which limited their market reach and growth potential. The researchers recommended the usage of innovative marketing strategies, especially digital platforms, to enhance visibility and access to wider markets.

Despite these insights, there is limited research specifically addressing the use of digital advertising in rabbit farming. This study aims to fill this gap by examining how digital advertising strategies can enhance the growth and market accessibility of rabbit farming enterprises in Ilorin, Kwara State. The findings will contribute to the literature by providing actionable recommendations for leveraging digital tools to overcome marketing challenges in semi-urban agricultural settings.

Methodology

This paper utilized descriptive survey research design to examine the role of digital advertising strategies on rabbit farming growth and market access in Ilorin, Kwara State. The targeted population consisted of approximately 150 registered rabbit farmers in region as identified by Kwara State Rabbit Association. Based on farmers who are engaged in marketing activities, a purposive sampling technique was used to select 50 rabbit farmers. This method was considered appropriate to ensure that only those with relevant experience in digital advertising were considered, which would enhance the validity of this study's results. Data were gathered through administering of structured questionnaires, which included respondents' demographics, awareness and use of digital advertising platforms. The gathered data were analyzed using descriptive statistics and regression analysis. The data were analyzed using descriptive statistics to summarize patterns of digital advertising adoption, and regression analysis to examine the relationship between digital marketing strategies and business outcomes—specifically market accessibility and profitability. Regression analysis was justified as it enables the researcher to measure the strength and direction of association between independent variables (e.g., digital advertising practices) and dependent variables (market-related outcomes), while also controlling for other influencing factors. Statistical significance was tested at the 5% level ($p < 0.05$).

Model Specification:

The regression model used is specified as:

$$Y=\beta_0+\beta_1X_1+\beta_2X_2+\varepsilon$$

Where:

- Y = Outcome variable (e.g., market accessibility or profitability)
- X_1 = Awareness of digital advertising platforms

- X_2 = Frequency of digital advertising usage
- β_0 = Constant (intercept)
- β_1, β_2 = Coefficients of independent variables
- ε = Error term

Result Presentation

Descriptive Statistics

Response Rate

Out of the total number of administered questionnaires, 50 were completed and returned, resulting in a 100% response rate.

Table 1 Demographic Profile of respondents

Demographic Variable	Category	Percentage	Frequency
Gender	Male	60%	30
	Female	40%	20
Age	30-50years	70%	35
	29 below	30%	15
Educational level	B.Sc. & above	65%	33
	Below B.Sc.	35%	17
Farming Experience	3years and above	80%	40
	Less than 3years	20%	10

Source: Authors' computation (2025)

Regression Analysis Results

The regression analysis examined the relationship between digital advertising strategies (independent variable) and two dependent variables: market accessibility and profitability of rabbit farming enterprises. The results are summarized in the tables below:

Table 2: Regression Analysis for Market Accessibility

Predictor Variable	**Coefficient (β)**	**Standard Error (SE)**	**t-Value**	**p-Value**	**R-Squared**
Constant	1.25	0.30	4.17	0.000	
Use of Digital Platforms	0.45	0.10	4.50	0.001	0.65

Author's Computation,2025

Table 3: Regression Analysis for Profitability

Predictor Variable	**Coefficient (β)**	**Standard Error (SE)**	**t-Value**	**p-Value**	**R-Squared**
Constant	0.85	0.20	4.25	0.000	
Use of Digital Platforms	0.50	0.12	4.17	0.002	0.65

Author's Computation, 2025.

The result indicate that digital marketing strategies significantly contribute to market accessibility, as evidenced by a high R value of .65

The R-squared value of 0.62 for profitability indicates that 62% of the variation in profitability can be attributed to digital efforts.

Both regression models show a significant positive relationship between the use of digital platforms and the dependent variables ($p < 0.05$).

Discussion of Results

Results indicate a strong and statistically significant association between digital advertising and the growth of rabbit farming in terms of market accessibility and profitability. Farmers using digital marketing communication informed that they could reach more customers and recorded more sales than those using only conventional marketing communication. The results are in line with the work of Adeyemi and Ojo (2021), who emphasized the role of digital tools in enhancing the visibility of small-scale agricultural ventures.

Table 2, indicates that the use of digital platforms has a positive and statistically significant correlation with market accessibility. The coefficient (β = 0.45) indicates that a one-unit rise in digital advertising correlates with a 0.45 unit increase in market accessibility. The relationship is statistically significant at p = 0.001, well below the 5% threshold, indicating the strength of the impact. The model explains 65% of the variation ($R^2 = 0.65$) in market accessibility, indicating a strong goodness-of-fit. This suggests that digital platforms such as WhatsApp, Facebook, and Instagram play a critical role in expanding the customer base for rabbit farmers in the study area.

Similarly, Table 3 shows that the use of digital platforms is also a significant predictor of profitability, with a coefficient value (β = 0.50) and a p-value of 0.002, which is also statistically significant at the 5% level. This indicates that an increase in digital advertising efforts results in a 0.50 unit increase in profitability among the farmers surveyed.

The R-squared value of 0.65 again suggests that the model explains 65% of the variation in profitability, confirming the robustness of digital marketing as a strategic tool for improving business outcomes.

These results suggest that digital advertising strategies enhance both market accessibility and profitability in small-scale rabbit farming. Farmers who use digital platforms report better market outreach and increased sales than those relying on traditional marketing approaches.

This aligns with the study of Adeyemi and Ojo (2021), who emphasized the role of digital tools in boosting visibility and profitability for small-scale agricultural ventures. The results underscore the potential of digital marketing to bridge market gaps, reduce barriers to entry, and promote inclusive growth in the agricultural sector.

Conclusion

This paper aimed to examine the roles of digital advertising strategies on rabbit farming growth, market access in Ilorin, Kwara State. The paper utilized a descriptive survey designed and employed purposive sampling to select 50 active rabbit farmers engaged in marketing activities. Data were collected using structured questionnaires and analysed using descriptive and inferential statistics (regression analysis). Findings revealed that the adoption of digital platforms such as Facebook, WhatsApp, and Instagram had a positive impact on both market accessibility and profitability of rabbit farming. Regression results revealed that a unit increase in digital advertising led to significant increase in market reach and profitability. Based on these findings, the paper concludes that digital advertising strategies are important tools for enhancing the performance of small-scale rabbit farmers.

Recommendations

1. **Digital Marketing Training for Farmers:** Government and agricultural extension services should organize training programs to enhance farmers' digital literacy and marketing skills. These trainings should focus on how to effectively utilize platforms like Facebook, WhatsApp, and Instagram to promote product outreach
2. **Infrastructure and Financial Support:** Government and financial institutions should provide access to reachable internet services, smartphones and other digital tools, as well as offer schemes to ease adoption of digital strategies.
3. **Integration of Digital Strategies into Agricultural Policy:** Policy makers should proactively incorporate digital initiatives into agricultural development plans, specifically for smallholder and niche like rabbit farming.

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Innovative Management and Sustainable Competitive Advantage of Fast-Food Restaurants in Bayelsa State

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Abstract
For any organisation, especially a fast-food restaurant, to remain a formidable competitor in the industry, the organisation must be able to sustain a competitive advantage. Competitive advantage is the edge an organisation has over its competitors through outstanding performance in terms of products and services offered to the market. The research investigated the impact of innovative management on the sustainable competitive advantage of fast-food restaurants in Bayelsa State. Utilising a cross-sectional design, a structured questionnaire was administered to all sixty (60) employees of nine (9) purposively selected out of forty-eight (48) fast food restaurants in Bayelsa State. Spearman rank correlation coefficient analysis were employed to analyse the data. The findings indicated that innovation culture (r = 0.369) and employee creativity (r = 0.542) exhibited a significant positive correlation with sustainable competitive advantage. The research thus concluded that innovative management exhibited a substantial positive correlation with sustained competitive advantage. It was thus recommended that fast-food establishments should establish a secure and inclusive atmosphere in which all employees' creative ideas and corresponding actions are recognized and appreciated.

Keywords: innovative management. Sustainable competitive advantage, innovative culture, employee creativity, fast-food restaurant

1.0 Introduction

A firm is said to enjoy a competitive advantage when it can achieve superior performance relative to industry rivals through value creation, differentiation, or cost leadership. Sustainable competitive advantage refers to a firm's ability to maintain its competitive edge in the long term despite market shifts. It entails aligning innovation with strategic agility and ensuring that resources evolve to cope with the emerging demands.

In today's increasingly competitive business landscape, companies are adopting more aggressive and fluid strategies to identify techniques that ensure profitability. In the current volatile and competitive business landscape, firms face significant challenges in meeting the escalating demands of the market and customers, navigating complex regulations, and addressing technological obsolescence. The fast-food industry in Bayelsa State, situated in the oil rich Niger Delta, Nigeria has progressed alongside urbanization and changing consumers' lifestyle which necessitate constant turnaround strategies for any firm in the industry to retain its market posture. The notion of innovation is increasingly vital for maintaining growth and performance. Innovation results from rigorous multi-functional coordination (Fahad and Khairul, 2020). This orchestration entails coordinating teams and assigning responsibilities, authorities, and roles to participate in the innovation challenge.

Madjar et al (2021) contend that to attain and maintain competitive advantage and enhance organisational performance, managers must analyse the factors influencing the execution of competitive strategies. An organisation must align its structure with its strategies, provide strategic leadership, develop a corporate culture, and manage the implementation of the strategies. In this modern age, innovation management has become a crucial element of economic and industrial development policies in various countries. Fahad and Khairul (2020) asserted that innovation management constitutes a methodical process adopted by companies to enhance their prevailing services, products, techniques, and approaches to marketing, as well as to develop fresh ones. Innovation management practice is key in promoting innovation aimed at ensuring business growth and survival via the development of an innovative culture within organisations. Innovation management assists companies in attaining a persistent competitive advantage, especially when it becomes systemic and radical (Martinez-Caro et al., 2022). Through innovation management, a competitive advantage is created for the company via the creation of novel goods, procedures, and offerings. Innovation plays a vital part in the transformation of ideas into reality.

Innovativeness is a fundamental instrument in growth tactics for entering new markets, expanding current market share, and granting the organisation a competitive advantage (Hirst et al., 2019). Driven by increasing competition in global markets, companies have recognised the importance of innovation, as swiftly evolving technologies and intense global rivalry rapidly diminish the value of current goods and services. Consequently, innovations are integral to corporate strategies for various reasons, including the enhancement of production processes, the cultivation of favourable customer perception, improved market performance, and the attainment of sustainable competitive advantage (Hitt et al., 2018).

There has been limited attention to the potential impact of dimensions such as innovation culture and employee creativity of innovative management strategies on sustaining competitive advantage. This study investigates the impact of innovative management on sustaining the competitive advantage of fast-food restaurants in Yenagoa, Bayelsa State.

Many organisations, particularly in fast-food restaurants, aim to foster a climate of innovation that empowers employees to take risks, leading to product advancements. The fast-food firms in Bayelsa State were established to serve students, families, working women, institutional clients, and oil and gas companies in the area with outdoor catering. In the past, these organisations were successfully serving their markets and generating high profits for their owners. The majority of Bayelsa State's fast-food businesses have recently had poor results and been forced to close as a result of dropping sales and declining profit margins. Sales turnover in the fast-food industry is typically low, the players are facing declining customer patronage. What ought to be the underlying causes of these issues? Several scholars, such as (Yongan et al, 2019; Laban and Deya, 2019; Birkinshaw et al., 2020; Damanpour and Aravind, 2022; Hitt, 2022; Singh et al, 2023; and Teece, 2023), have researched innovative management and sustainable competitive advantage within and outside Nigeria. However, out of the studies carried out, few focused on fast food industry in Bayelsa State, Nigeria, Although the findings of these studies were deemed conclusive, none of the research integrated and combined the two measures of innovative management in the current study (innovation culture and employee creativity) at a go This underscore the need for additional research on the impacts of innovative management and sustainable competitive of fast-food restaurants in Yenagoa, Bayelsa State, Nigeria.

Furthermore, this study's distinctiveness is also in its geographical scope, as the researcher aspires to cover fast food restaurants in Yenagoa, Bayelsa State, Nigeria. The researcher considers it necessary to investigate the potential effects of innovative management to address the identified gaps in sustainable competitive advantage in fast food restaurants in Yenagoa, Bayelsa State, Nigeria. The above-identified gaps led to the following specific objectives of the study:

i. To assess the impacts of innovation culture on sustainable competitive advantage.

ii. To determine the effects of employee creativity on sustainable competitive advantage

2.0 Literature Review

2.1 Conceptual Review

2.1.1 Innovative Management

Innovative management involves overseeing the activities necessary for the introduction of new concepts. This encompasses the generation of ideas, their development, prioritisation, implementation, and practical application, such as the introduction of new products or the implementation of fresh internal procedures (Mile, 2019). Innovation management is the structured approach to the creation and execution of novel concepts to enhance business development. Innovation management exhibits a disconnect between scientific advancements and organisational development, primarily due to deficiencies in innovation strategy (Martinez-Caro et al., 2022). An effective innovation strategy enables the organisation to align its structure with its distinct competitive requirements. Corporate senior leaders must develop sustainable long-term growth strategies rather than focusing solely on short-term technologies. Therefore, it is essential to plan for the next decade, rather than just the immediate one to two years. The neglect of prioritising innovation in favour of short-term profits can adversely affect capital markets.

Modern-era managers face pressures to establish innovation-induced organisations to remain competitive against low-cost nations. Innovation management is a comprehensive initiative that integrates various resources and capabilities within a firm to meet the needs of existing customers by emphasising the core aspects of the organisation, while also attracting new customers by targeting emerging opportunities (Asaolu and Ogunleye, 2023). Mainstream activities enhance organisational functioning through process innovation, aimed at reducing costs by eliminating waste, defects, and errors while ensuring timely and complete delivery of products and services to customers. The following dimensions of innovative management are worth noting.

i. Innovation Culture

Successful innovation management requires the company to foster a culture that prioritises innovation and ensures employees are appreciated. This will motivate employees to produce high-quality ideas in exchange. Structures facilitate the effective utilisation of capabilities, while culture helps the organisation to develop the capabilities associated with its personnel. A pro-innovation culture significantly enhances a company's ability to attract and retain suitable employees. An appropriate pro-innovation culture fosters desirable behaviours while deterring undesirable ones. The rapid accumulation of impacts indicates that culture significantly influences a company's innovativeness. An innovation strategy must determine whether product enhancement, breakthrough innovation, or disruptive products are the most effective solutions (Zhou and Shalley, 2019). Many innovation strategies are unsuccessful in this domain, resulting in low rates of innovation success.

Innovation culture refers to the organisational environment established by management to promote unconventional thinking and its practical implementation. Organisations that foster a culture of innovation typically assert that innovation is not limited to top leadership but can originate from any employee within the company. Companies operating in rapidly changing markets value innovation cultures, as maintaining the status quo is insufficient for effective competition; therefore, an innovation culture is essential for success. Shuck et al. (2022) Innovation cultures often assess employees using metrics like value creation and sustainable competitive advantage, rather than conventional metrics such as revenue generation and timely delivery. Organisations that promote innovative thinking also facilitate discovery and seek methods to incentivise the time dedicated to research necessary for generating new ideas and products.

An innovative culture enhances firm performance and facilitates the development of fresh offerings, necessitating creativity, open communication, and teamwork, which are essential components for effective collaboration and innovation, and strong employee relationships. Additionally, SMES may utilise an innovation culture as a strategic instrument to enhance performance and support the creation of new products (Padilha and Gomesi, 2020) posited that only those companies with strong innovation capabilities can make important contributions to their company’s competitiveness.

ii. Employee Creativity

Certainly, the occurrence of creativity within firms can significantly shape workers’ creativity directly or indirectly through numerous techniques (Volberda et al., 2020). Specifically, Previous research in the realm of social psychology of creativity indicates that particular circumstances may exert an indirect influence on creativity by affecting particular elements relevant to the creative process. Research should specifically examine how context-specific components interact with personal components to effectively explain workers' creative performance (Sharifirad and Ataei, 2021). Scholars are expected to investigate the mechanisms through which context influences ingenuity and the relationships between individual and situational variables in this framework (Singh et al., 2023).

Employees represent a critical asset for organisational innovation; therefore, recent scholarly work indicates that human resource management can enhance creativity (Zahra et al., 2022). A segment of research examines the personal characteristics that may enhance employee creativity (Martinez-Caro et al., 2022), including innovative disposition, cognitive approach, and favourable or unfavourable impact (Fahad and Khairul, 2020). Supportive personal determinants may influence the extent to which employees recognise issues and pursue new knowledge in the pursuit of innovative concepts and resolutions. The majority of research notably embraces a psychological paradigm (Gong et al., 2021). Researchers recognise that individual psychological traits foster internal motivation, which enhances employees' creative engagement, including innate drive and sense of self-worth. Moreover, individuals' psychological characteristics are shaped by the organisational context (Amabile and Pillemer, 2019), underscoring the theoretical importance of investigating how organisational drivers may impact employees' psychological capital about creativity.

Research on creativity predominantly emphasises the role of contextualised predictors in enhancing or diminishing the influence of individual psychological factors on creativity (Zahra et al., 2022). This research suggests that leadership issues and job characteristics, as significant contextual factors, positively mediate the relationship between a person and innovation (Martinez-Caro et al., 2022). The main cause is that leaders and jobs with benefits that foster ingenuity correspond with employees' creative personal characteristics, potentially enhancing the probability that employees utilise their creativity and strengths for innovative accomplishments. This postulation aligns with trait theory (Madjar et al., 2021), which posits that a robust alignment between context and individual traits can enhance their prospective advantages for innovative results (Zahra et al., 2022). Supervisor behaviours and task characteristics that promote creativity are fundamental to the context's strength, potentially enhancing the psychological attributes linked to creativity.

Creativity is a crucial component of organisational life in contemporary settings, as the rapid changes in the global landscape have significantly impacted the operational environment.

2.1.2 Sustainable Competitive Advantage

Sustainable competitive advantages refer to business resources, capabilities, or characteristics that are difficult to surpass or replicate, thereby offering a favourable or preeminent permanent posture relative to competitors. A firm possesses a sustainable competitive advantage once it attains distinct posture or attributes that differentiate the from rivals, rendering it exceptional in a particular industry. Sustainable competitive advantages are defined as those favourable competitive advantages that endure over an extended period. In the current competitive landscape, possessing a sustainable competitive advantage is essential for maintenance. The advantage can be assessed by comparing the company's profits to those of its competitors in the market, with the expectation that the former should exceed the latter. Competition can be ascribed to innovations in business, technological advancements, and shifts in customer demand (Rego et al., 2020).

New routines, green products, and opportunities to satisfy customers and other stakeholders of the firm are needed to establish or enhance sustainable competitive advantage (Sharifirad and Ataei, 2021).

2.1.3 Overview of Fast-food Restaurants in Bayelsa State

Mr Bigg's was Nigeria's first fast-food restaurant, opening its doors in 1986. Although UAC brought the idea of fast food to Nigeria about 35 years ago, Mr. Bigg's is recognised as the nation's first real fast-food restaurant. Since then, the fast-food sector in Nigeria and, consequently, in Bayelsa State has experienced tremendous expansion, with a large number of operators joining the market. In Bayelsa State, Nigeria, fast-food establishments provide a variety of quick-serve options with an emphasis on affordability and convenience. In addition to regional specialities like Jollof rice and other Nigerian cuisine, they frequently serve well-known items like burgers, fries, and chicken. Some establishments also accommodate local tastes and preferences, even though the emphasis is on speed and ease.

2.2 Theoretical Framework

Out of numerous related theories relevant to this study, the current researcher's wisdom and the emphasis this theory places on competitive advantage underpin the study. Initially, the Resource-Based View (RBV) focused on identifying resource attributes that competitors cannot replicate. The two main tenets of the Resource-Based View (RBV) are resource heterogeneity, which holds that businesses have unique collections of resources, and resource immobility, which holds that these resources are hard to replicate or transfer, allowing for long-term competitive advantage.

For a resource to confer a sustained competitive advantage, it must possess four qualities as outlined by the Resource-Based View (RBV): it should be heterogeneous and categorised as valuable, inimitable, rare, and non-substitutable.

The Resource-Based View (RBV) has been criticised for its narrow focus, potential tautology, static nature, inability to adequately explain how resources generate strategic value or how dynamic capabilities are developed, and failure to take into account outside influences.

Despite the criticisms, the Resource-Based View is significantly related to this study in the sense that it emphasises long-term competitive advantage. The long-term competitive advantage will ensure continuous productivity in the context of the fast-food industry in Bayelsa State, Nigeria.

2.3 Empirical Review

Yongan et al. (2019) investigated the influence of management innovation and innovation in technology on the performance of organisations. The research employed structural equation modelling to analyse the collected data. The population of respondents is 344

CEOs in Pakistan and senior executives. The findings indicated that employee creativity, technology and managerial innovations positively impact the sustainability and performance of organisations.

Martinez-Caro et al (2022) investigate the interplay between social and performance management contexts in enhancing organisational innovation performance. The research involved a survey of 301 employees in Chinese firms. The data analysis results indicate that employee creativity, psychological safety, collectivism, and power distance influence innovation performance, with their effects fully mediated by the social context and performance management context.

Almrshed et al. (2023) in a study on how continuous competitive advantage was impacted by innovation culture in modern organisations, focused on 245 manufacturing-related SMES in Nigeria. Quantitative data was collected. Using structural equation modelling. The findings show that consumer preferences would not directly affect product quality, but that introducing advanced technology moderates the relationship between consumer preferences and market superiority. Product excellence and the corporate business model were significantly and positively correlated.

Dingqing et al (2024) in their study using panel data from 2012 to 2022, concentrated on the research focusing on Companies listed on the A-share market within China's 5 primary towns and cities. This research examines the influence of digital technology applications and innovation culture on competitive advantage. Diverse econometric methodologies are utilised, encompassing the two-stage least squares regression model, fixed effects model, and mediation impacts analysis. This study's findings from studies suggest that the rate of business growth significantly improves with the application of digital and innovation culture.

Based on the statement of problem and gaps in the literature, it is, therefore, the interest of the current researcher to examine innovative management and sustainable competitive advantage. This resulted in the formulation of the subsequent hypotheses:

H_{O1}: Innovation culture has no significant effect on sustainable competitive advantage

H_{O2}: Employee creativity has no significant influence on sustainable competitive advantage

2.4 Conceptual Framework

Source: Adapted from Uzkurt and Sen's (2018) & Zhou and Shalley (2019)

3.0 Methodology

The current study employed a cross-sectional design. Information from the Bayelsa State Ministry of Trade, Industry, and Investment indicated that there are 48 registered fast-food restaurants in the state. For proximity's sake and the difficulty in navigating the terrain, the study purposively used a sample of nine (9) out of the 48 restaurants. A structured questionnaire was administered on all the sixty (60) employees of the sampled restaurants.

The 5-point Likert scale questionnaire was adapted from Uzkurt and Sen's (2018): Mohammad's (2018): Zhou and Shalley (2019) innovation management questionnaire. The data obtained from the field were analysed with Spearman rank correlation coefficient analysis.

4.0 Results and Discussion

4.1 Hypothesis Testing

(i) H$_{O1}$: Innovation culture has no significant effect on sustainable competitive advantage

Table 1: Spearman Correlation between innovation culture and sustainable competitive advantage

Correlations

			Innovation culture	Sustainable competitive advantage
Spearman's rho	Innovation culture	Correlation Coefficient	1.000	.369**
		Sig. (2-tailed)	.	.007
		N	52	52
	Continuous competitive advantage	Correlation Coefficient	.369**	1.000
		Sig. (2-tailed)	.007	.
		N	52	52

**. Correlation is significant at the 0.01 level (2-tailed).

Table 1 shows that innovation culture had a significant positive relationship with sustainable competitive advantage ($r = 0.369$). The value of the significance of 0.007 ($p < 0.01$) revealed a positive relationship.

(ii) H$_{O2}$: Employee creativity has no significant influence on sustainable competitive advantage

Table 2: Spearman Correlation between employee creativity and sustainable competitive advantage

Correlations

			Employee creativity	Continuous competitive advantage
Spearman's rho	Employee creativity	Correlation Coefficient	1.000	.542**
		Sig. (2-tailed)	.	.000
		N	52	52
	Continuous competitive advantage	Correlation Coefficient	.542**	1.000
		Sig. (2-tailed)	.000	.
		N	52	52

**. Correlation is significant at the 0.01 level (2-tailed).

Table 2 showed that employee creativity had a strong positive and significant relationship with continuous competitive advantage ($r = 0.542$). The value of the significance, 0.000 ($p< 0.01$), revealed a significant relationship.

4.2 Discussion of Findings

The results are discussed in this subsection.

4.2.1 Innovation culture and continuous competitive advantage

In the context of fast food in Bayelsa State, it was discovered that there was a positive and significant correlation between innovation culture and sustainable competitive advantage. This conclusion is strongly corroborated by the empirical research of Almrshed et al (2023), study conducted on how continuous competitive advantage was impacted by innovation culture in modern organizations, focused on 245 manufacturing-related SMEs in Nigeria, which posited that only those companies with strong innovation capabilities can make important contributions to their company's competitiveness. The current study also agrees with the study carried out by Dingqing et al (2024), which used panel data from 2012 to 2022, focused on companies listed on the A-share market within China's 5 primary towns and cities. The findings from the study suggest that the rate of business growth significantly improves with the application of digital and innovative culture.

The current study indicated that innovative culture in the context of fast-food restaurants in Bayelsa State, Nigeria, fosters creativity and risk-taking among employees, facilitating the development of innovative ideas and prospects essential for innovation. It is obvious from the findings that any fast food that embraces an innovation culture, which is a response to the customers' centred needs, will have an edge over the competing firms in the industry. This will metamorphose into a sustainable competitive advantage.

4.2.2 Employee creativity and continuous competitive advantage

The findings indicated that employee creativity possesses a strong positive and significant relationship with continuous competitive advantage. This finding aligns with Yongan et al. (2019), who investigated the influence of management innovation and innovation in technology on the performance of organisations. The research employed structural equation modelling to analyse the collected data. The population of respondents is 344 CEOs in Pakistan and senior executives. The findings indicated that employee creativity, technology and managerial innovations positively impact the sustainability and performance of organisations. It also aligns with Martinez-Caro et al (2022), who investigate the interplay between social and performance management contexts in enhancing organisational innovation performance. The research involved a survey of 301 employees in Chinese firms. The data analysis results indicate that employee creativity, amongst others, influences competitiveness. Also, it can be deduced from the findings that the eateries that possess creative employees are better placed for lasting competitiveness in the fast-food restaurant industrial context.

5.0 Conclusion and Recommendations

This section outlines the conclusion and recommendations of the study.

5.1 Conclusion

The research concluded that innovative management has a significant and positive relationship with sustainable competitive advantage. Fast-food restaurants with a strong innovation culture tend to attract creative and forward-thinking talent, which will in turn ensure the competitive sustainability of the restaurants. A diverse and innovative workforce can generate fresh ideas and drive ongoing innovation, enhancing the company's competitive edge. Employees' creativity is often more adaptable to change, which is essential in rapidly evolving industries. Restaurants can embrace new technologies and market shifts, helping the company maintain its competitive edge. Employee creativity can foster a culture of collaboration, where team members share and build on each other's ideas. Collaborative efforts can lead to more significant innovations that contribute to a sustainable competitive advantage.

5.2 Recommendations

In line with the findings and the conclusion of the study, the following recommendations were made:

Fast-food restaurants should encourage an innovative culture which entails all employees, regardless of their role, to contribute ideas and suggestions. Create a safe and inclusive environment where everyone feels valued and heard. Fast-food restaurants should welcome employee creativity and give employees the autonomy to make decisions and implement their creative ideas within established guidelines.

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Perusing Nigerian Digital Entrepreneurship Ecosystem with those Leading Global Hubs in Entrepreneurship Education

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Abstract

Nigeria's digital entrepreneurship ecosystem faces structural deficiencies that limit its competitiveness compared to leading global hubs. Challenges such as inadequate entrepreneurship education, regulatory bottlenecks, and restricted financial access hinder the growth of digital startups, despite Nigeria's entrepreneurial potential. A lack of comparative analysis further restricts policy development and ecosystem enhancement. This study employs a meta-analysis of qualitative studies published between 2021 and 2023 to evaluate Nigeria's digital entrepreneurship environment relative to established global hubs. The methodology integrates thematic synthesis and effect size analysis to assess key variables, including entrepreneurship education, regulatory frameworks, and access to capital. Findings indicate that Nigeria's digital entrepreneurship sector grows at an annual rate of 15%, driven by increased internet penetration and investor interest. However, disparities persist, with Nigeria scoring 40% on the Entrepreneurial Ecosystem Index (EEI) versus 70% for global hubs. 80% of respondents cite entrepreneurship education as a critical success factor, yet challenges remain, including regulatory uncertainties (60%), limited access to capital (55%), and skills shortages (50%). The study recommends strengthening entrepreneurship education, reforming regulatory frameworks, improving access to capital, and fostering ecosystem collaboration.

Keywords: Digital entrepreneurship; Economic growth; Innovation; Job creation; Sustainability

1.0 Introduction

Entrepreneurship education plays a crucial role in bridging the skills gap and providing aspiring entrepreneurs with the technical, managerial, and business acumen that is necessary for them to be successful. According to Ahmad, *et al*., (2023), Nigeria has had a tremendous increase in the number of digital entrepreneurs in recent years. This growth can be attributed to the country's young population, rising internet penetration, and a growing appetite for technical innovation. As a result of this tendency, the economic landscape of the country has been altered, and digital startups and tech enterprises have emerged as significant participants in driving innovation and economic growth. E-commerce platforms such as Jumia and Konga, as well as fintech solutions such as Paystack and Flutterwave, are examples of how Nigerian entrepreneurs are utilizing technology to address local difficulties and tap into global markets (Idoko, 2023).

A culture of innovation and risk-taking is vital for driving technical growth and competitiveness in the digital era Noer, *et al*., (2023).When it comes to supporting innovation and growth, the significance of entrepreneurship education cannot be overemphasized. This is especially true in a field that is dynamic and rapidly expanding, such as digital entrepreneurship. According to Boldureanu, *et al*., (2020), those who receive education in entrepreneurship are equipped with the requisite skills, knowledge, and mindset to successfully traverse the intricacies of the business environment and seize possibilities for advancement. In the context of Nigeria's digital entrepreneurship landscape, entrepreneurship education plays a crucial role in bridging the skills gap and providing aspiring entrepreneurs with the technical, managerial, and business acumen that is necessary for them to be successful (Okoro, 2021). According to Deng and Wang (2023), educational institutions and programs that offer entrepreneurial education provide students with access to resources, mentorship, and practical training. This helps to cultivate talent and create an environment that is both supportive of innovation and growth According to Ogwo (2021), entrepreneurship education serves as a gateway to economic empowerment in Nigeria, a country where traditional employment options are limited. This education enables individuals to build their own livelihoods and contribute to sustainable development.

However, the Nigeria's digital entrepreneurial scene is growing quickly, but there are major obstacles standing in the way of projects' viability and success. Some of the key challenges noted in this paper include inadequate access to structured entrepreneurship education, regulatory complexities and limited access to financial resources (Wang, 2023; Adedoyin et al., 2022). In the same light, Ufere and Gaskin (2021) equally noted the inadequate infrastructural facilities as part of the major challenges limiting the potentials of entrepreneurial ventures in Nigeria, particularly the digital entrepreneurs. These problems stand as hindrances to the growth and competitiveness of the Nigerian digital startups. The difficulties encountered by Nigerian business owners are made more difficult by this combination of obstacles. However, relevant emphasis need to be laid on equipping individuals with the requisite skills for digital entrepreneur. There should be a more research on digital entrepreneur that will specifically explore the challenges and opportunities facing entrepreneurs in Nigeria. Hence, the objective of this study is to appraise Nigerian digital entrepreneurship ecosystem with those leading global hubs in entrepreneurship education.

2.0 Literature Review

This section of the study contains information that was obtained from different scholars appraising Nigerian digital entrepreneurship ecosystem with those leading global hubs in entrepreneurship education. It is sub-divided into three reviews namely the Conceptual, theoretical and empirical review.

2.1 Conceptual review

2.1.1 Digital entrepreneurship ecosystems

According to Bejjani *et al*., (2023), digital entrepreneurship ecosystems are the interconnected networks of people, organizations, and resources that support the start-up, expansion, and sustainability of digital businesses in a specific sector or area. These ecosystems include a wide range of stakeholders, who all add to the vitality and energy of the entrepreneurial environment. These stakeholders include investors, entrepreneurs, legislators, educational institutions, and support groups (Weiss, 2021). The entrepreneurs themselves are at the center of any ecosystem centered around digital entrepreneurship. To realize their goals, these people create novel concepts, produce goods or services, and take measured risks (Dao *et al*., 2021). Entrepreneurs in Nigeria are essential to the country's economic progress and digital innovation because they use technology to solve regional problems and access international markets.

Incubators, accelerators, co-working spaces, and entrepreneurship networks are examples of support organizations that offer crucial resources and direction to aspiring and early-stage entrepreneurs (Gómez *et al*.,2023). These organizations support the expansion and viability of digital companies by providing business development services, networking opportunities, mentorship, and financial access (Cearra *et al*., 2021). Organizations that assist the digital entrepreneurial ecosystem in Nigeria include the Ventures Platform Foundation, the Tony Elumelu Foundation, and the Co-Creation Hub (CcHub). Scaling digital businesses requires access to finance and investors are essential in helping promising firms raise money and receive other forms of financial support (Jackson, 2023). High-potential businesses can grow their operations, create new products, and penetrate new markets with the help of venture capitalists, angel investors, corporate investors, and crowd funding platforms, although it is still difficult for Nigerians to obtain finance. Local and foreign investors are becoming more interested in supporting digital entrepreneurs, especially those in industries like Agri-tech, fintech, and e-commerce.

Institutions that provide entrepreneurship education and research are essential for developing entrepreneurial skills and creating an innovative culture within the ecosystem (Lv *et al*., 2021). These organizations provide entrepreneurship and innovation-focused training programmes, research projects, and academic programmes that provide aspiring business owners the know-how, abilities, and attitude they need to thrive in the digital economy (Piia *et al*., 2024). To close the skills gap and give ambitious business owners relevant, hands-on training, Nigerian entrepreneurship education programmes must be strengthened. The digital entrepreneurship ecosystem is greatly influenced by government policies and regulations, which determine the legal frameworks governing digital initiatives, the ease of doing business, and access to capital (Guerrero, Liñán and Cáceres-Carrasco, 2020). Fostering the growth and competitiveness of digital businesses requires a supportive policy environment with measures to promote entrepreneurship, innovation, and clear laws as well as tax incentives. A more hospitable climate for digital entrepreneurship has been established in Nigeria thanks to efforts to enhance the regulatory environment for startups, including the creation of the National Information

Technology Development Agency (NITDA) and programmes like the Ease of Doing Business reforms (Lv *et al*., 2021).

2.1.2 Entrepreneurship Education

According toVodăand Florea (2019), entrepreneurship education is essential for developing the next generation of innovators and change-makers because it gives students the abilities, information, and perspective needed to thrive in the fast-paced commercial world of today. Entrepreneurship education is essential for promoting sustainable development and realizing the full potential of Nigeria's digital economy within the framework of digital entrepreneurship ecosystems. A wide range of formal and informal learning experiences are included in entrepreneurship education with the goals of promoting an entrepreneurial mentality, honing entrepreneurial skills, and offering useful information on launching and running a business (PiiaVettik-Leemet and Mets, 2024). Since there are few traditional career options in Nigeria, entrepreneurship education helps people become more economically empowered by empowering them to start their own businesses and generate money and jobs (Ogwo, 2021).

Instilling entrepreneurial attitudes and behaviors which motivate people to embrace risk-taking, inventiveness, and resilience in the pursuit of their goals is one of the main purposes of entrepreneurship education (Hu *et al.,* 2021). Through the development of an entrepreneurial attitude, entrepreneurship education equips people with the critical abilities needed to succeed in the digital economy: the ability to recognize opportunities, overcome obstacles, and adjust to shifting market conditions (Miço and Cungu, 2023). Entrepreneurship education also emphasizes the development of actual skills and competences linked to the formation and administration of ventures, in addition to the development of a mentality. These could involve, among other things, financial management, market research, company planning, sales, and leadership abilities. Entrepreneurship education provides prospective business owners with the skills and information necessary to transform their ideas into successful ventures through interactive seminars, case studies, and hands-on learning experiences (Boldureanu, *et al*., 2020).

2.1.3 Barriers and Challenges

Nigerian entrepreneurs encounter several obstacles and problems that impede their progress and impede the advancement of the digital entrepreneurship ecosystem, despite the enormous potential that digital entrepreneurship holds to stimulate economic growth and innovation in the nation.

1) Insufficient Access to Structured Entrepreneurship Education: According to Aboluwodi, (2018), one of the main obstacles Nigerian business owners' encounters is their insufficient availability of resources and programmes for structured entrepreneurship education. Initiatives for entrepreneurship education do exist, but they frequently fall short of providing prospective business owners with the hands-on experience and industry-relevant training they need to thrive in the digital economy. Due to this, a lot of entrepreneurs find it difficult to obtain capital, create workable business plans, and negotiate the complexity of the

2) digital world, which makes it difficult for them to expand and grow their businesses.
3) Legal Uncertainties and Regulatory Complexities: Nigerian entrepreneurs also confront a great deal of legal and regulatory uncertainty, which makes it difficult for them to run and expand their companies (Adedoyin *et al.*, 2018)**.** Nigerian entrepreneurs typically face a regulatory environment that is typified by bureaucratic red tape, onerous licensing procedures, and uneven enforcement of regulations. These factors impede business progress and provide obstacles to entrance. The difficulties experienced by digital entrepreneurs are further compounded by the absence of clear intellectual property rights protection and enforcement, which deters investment and innovation in the industry.
4) Inadequate finance and Financial Resource Access: Funding is essential for growing digital businesses, but many Nigerian entrepreneurs face difficulties obtaining finance because of a lack of financial resources and a risk-averse investment environment (Deng and Wang, 2023). Early-stage businesses frequently cannot access traditional forms of finance, such bank loans and venture capital, since they lack collateral and experience. To further impede innovation and growth, the lack of a strong venture capital ecosystem and angel investment network further limits the amount of money available to digital entrepreneurs. As a result, a large number of prospective businesses either never get off the ground or are compelled to go for capital from foreign investors, which dilutes local ownership and control over creative endeavors.

2.1.4 Entrepreneurship Education Hubs

While these countries excel in fostering vibrant digital entrepreneurship ecosystems, they also serve as hubs for entrepreneurship education, offering a variety of programs and resources to support aspiring entrepreneurs. In the United States, renowned universities and private accelerators provide a wealth of educational opportunities and mentorship for budding entrepreneurs (Dao *et al*., 2021). Similarly, China has seen a surge in entrepreneurship education initiatives, with universities and private entities offering specialized programs to cultivate entrepreneurial talent. India's government-sponsored schemes like the Atal Innovation Mission complement academic courses and industry collaborations to empower aspiring entrepreneurs with the necessary skills and knowledge.

In European nations, entrepreneurship education is characterized by a collaborative approach involving universities, public-private partnerships, and grassroots initiatives. This diverse ecosystem fosters innovation and creativity among aspiring entrepreneurs, providing them with access to mentorship, funding, and networking opportunities (Boldureanu, *et al*., 2020). By comparing entrepreneurship education hubs across different countries, valuable understandings can be gleaned into the factors that contribute to their success and areas for improvement. Leveraging lessons from global best practices, Nigeria can further enhance its entrepreneurship education ecosystem and empower aspiring entrepreneurs to drive innovation and economic growth.

2.1.5 Social and Cultural Factors in Digital Entrepreneurship

In Nigeria, as well as in global entrepreneurship hubs, social and cultural factors exert a profound influence on the landscape of digital entrepreneurship. These factors encompass attitudes towards risk-taking, entrepreneurship, gender dynamics, access to networks, and social capital, all of which significantly shape the success and growth of entrepreneurship ecosystems.

1) Cultural Attitudes Towards Risk-Taking and Entrepreneurship:Nigeria's cultural fabric is imbued with entrepreneurial spirit, evidenced by the country's vibrant informal economy and a long history of small-scale entrepreneurship. However, prevalent risk aversion remains a significant cultural trait, often stemming from factors such as economic instability and a lack of social safety nets. While some individuals embrace risk-taking and venture into entrepreneurship, many are deterred by fear of failure and the perceived stigma associated with business setbacks. This cultural backdrop contrasts with global trends in entrepreneurship hubs like Silicon Valley, where risk-taking is celebrated as a fundamental aspect of innovation. Failure in such environments is often viewed as a valuable learning experience and a necessary step towards eventual success (Botelho et al., 2021)
2) Gender Dynamics:Gender dynamics represent another crucial aspect influencing digital entrepreneurship ecosystems. In Nigeria, as in many other regions worldwide, women face unique challenges and barriers to entry in the entrepreneurial sphere. Societal norms, cultural expectations, and unequal access to resources frequently impede women's participation and leadership in digital entrepreneurship ventures. Addressing gender disparities and promoting gender-inclusive policies and initiatives are essential for fostering a more diverse and equitable entrepreneurship ecosystem. Globally, initiatives aimed at promoting women's entrepreneurship vary in their effectiveness across different regions, with some areas making notable strides in creating supportive environments for female entrepreneurs (Pimpa, 2021).
3) Access to Networks and Social Capital:Access to networks and social capital serves as a critical determinant of entrepreneurial success. In Nigeria, informal networks and relationships, often rooted in kinship and social connections, play a pivotal role in facilitating business transactions and resource mobilization. However, these networks can also perpetuate exclusivity and limit opportunities for those outside established circles. Similarly, in global entrepreneurship hubs, access to networks is paramount, with ecosystems characterized by dense networks of investors, mentors, and fellow entrepreneurs. Building inclusive networks and fostering collaboration across diverse communities are essential strategies for enhancing social capital and expanding opportunities for aspiring entrepreneurs (Vodă and Florea, 2019).

2.1.6 Government Policies and Support Programs

Government policies and support programs play a vital role in nurturing digital entrepreneurship ecosystems, both in Nigeria and in leading global hubs. Evaluating the effectiveness of these policies is essential for identifying areas of improvement and informing future interventions.

1) Taxation and Regulation: Taxation policies and regulatory frameworks significantly impact the ease of doing business and the attractiveness of a country's entrepreneurial environment. In Nigeria, bureaucratic red tape, inconsistent regulations, and corruption pose significant hurdles for entrepreneurs, hindering innovation and growth. Streamlining regulatory processes, reducing bureaucratic barriers, and implementing transparent tax policies are crucial for fostering a conducive business environment. Similarly, global entrepreneurship hubs benefit from favorable tax regimes, streamlined regulations, and proactive government support, which incentivize entrepreneurship and investment (Ufere and Gaskin, 2021)
2) Intellectual Property Rights (IPR): Protecting intellectual property rights is vital for incentivizing innovation and safeguarding entrepreneurs' creations. In Nigeria, inadequate enforcement of intellectual property laws and a lack of awareness about IPR contribute to a challenging environment for digital entrepreneurs. Strengthening IPR enforcement mechanisms, raising awareness about intellectual property rights, and providing support for patent registration are essential steps for fostering innovation and creativity. Similarly, global entrepreneurship hubs prioritize intellectual property protection through robust legal frameworks, enforcement mechanisms, and support services for entrepreneurs seeking to protect their innovations (Piia Vettik-Leemet *et al*., 2024)
3) Access to Infrastructure: Access to reliable infrastructure, including technology, transportation, and utilities, is essential for the growth of digital entrepreneurship ecosystems. In Nigeria, inadequate infrastructure, particularly in rural and underserved areas, poses significant challenges for entrepreneurs, limiting their ability to access markets, resources, and customers. Investing in infrastructure development, expanding access to high-speed internet connectivity, and improving transportation networks are critical for leveling the playing field and promoting inclusive economic growth. Likewise, global entrepreneurship hubs prioritize infrastructure investment, recognizing its role in facilitating innovation, productivity, and competitiveness (Ufere & Gaskin, 2021)
4) Government Funding Initiatives: Government funding initiatives, such as grants, loans, and venture capital programs, play a crucial role in supporting digital entrepreneurship ecosystems. In Nigeria, limited access to financing is a major barrier for entrepreneurs, particularly those from underserved communities and sectors. Implementing targeted funding programs, providing incentives for private investment, and establishing venture capital funds are essential for expanding access to capital and fueling entrepreneurial innovation. Similarly, global entrepreneurship hubs leverage government funding initiatives to support startups, scale-ups, and innovative projects, fostering a dynamic ecosystem of investment and innovation (Okoro, 2021)

2.2 Theoretical review

The study reviewed four theories which include Complex Adaptive Systems Theory, Network Theory, Institutional Theory, and the Resource-Based View (RBV) offer distinct perspectives on the dynamics of entrepreneurial ecosystems. Each theory provides valuable insights, but they also have limitations, particularly when compared to the Resource-Based View.

The Resource-Based View (RBV) was first proposed by Jay Barney in 1991. RBV offers a comprehensive lens through which to analyze the dynamics of digital entrepreneurship ecosystems. Central to RBV is the notion that firms gain competitive advantage by leveraging unique resources and capabilities that are valuable, rare, inimitable, and non-substitutable (Barney, 1991**)**. This theoretical perspective provides understandings into how the distribution and utilization of resources shape the competitive landscape within entrepreneurial environments.RBV posits that not all resources are created equal; rather, firms possess heterogeneous bundles of resources that vary in their strategic importance and contribution to competitive advantage. In the context of digital entrepreneurship ecosystems, resources such as technological infrastructure, human capital, financial capital, and social networks play pivotal roles in driving innovation and value creation (McGahan, 2021). For instance, access to cutting-edge technologies and skilled talent can enable digital startups to develop innovative products and services, while strong social networks facilitate knowledge exchange and resource mobilization

Furthermore, RBV emphasizes the durability and inimitability of resources as key determinants of sustained competitive advantage. In digital entrepreneurship ecosystems, certain resources possess enduring characteristics that confer long-term benefits to firms. For example, proprietary technologies, patents, and intellectual property rights can provide digital startups with exclusive access to market opportunities and protect them from imitation by competitors (Barney, 1991). Moreover, intangible resources such as organizational culture, reputation, and brand equity are inherently difficult to replicate, thus serving as potent sources of competitive differentiation in the digital marketplace (Peteraf, 1993). RBV also underscores the importance of resource complementarity and dynamic capabilities in driving entrepreneurial success. Successful digital ventures often leverage complementary resources to create synergies and enhance their value proposition. For instance, a startup with strong technological capabilities may partner with a venture capital firm to secure funding and access to additional resources, thereby augmenting its capacity for innovation and growth (McGahan, 2021). Moreover, dynamic capabilities—the ability to sense, seize, and reconfigure resources in response to changing market conditions—are essential for adapting to disruptive forces and maintaining competitiveness in dynamic digital environments.

In the context of digital entrepreneurship ecosystems, RBV provides a powerful framework for understanding the factors driving ecosystem development and entrepreneurial success. By analyzing the distribution, heterogeneity, durability, and complementarity of resources within these ecosystems, researchers and policymakers can identify critical leverage points for fostering innovation and value creation (Li, Du *et al.*, 2017).For instance, in Nigeria's digital entrepreneurship landscape, RBV highlights the importance of addressing resource constraints and enhancing resource mobilization mechanisms to support the growth of digital startups. Initiatives aimed at improving access to technological infrastructure, facilitating talent development, and strengthening funding mechanisms can help bolster the ecosystem's resource base and enhance its competitiveness on the global stage (Nkechi and Finian, 2012).Similarly, in comparing Nigeria's digital entrepreneurship ecosystem with global hubs such as Silicon Valley, RBV sheds light on the differential distribution and utilization of resources across these environments. The major criticism of RBV is that it places too much focus on **internal resources,** potentially neglecting the role of **external factors,** such as institutions, networks, or ecosystem dynamics that can influence entrepreneurial success. While Silicon Valley benefits from a rich ecosystem of venture capital, top-tier talent, and established networks, Nigeria faces challenges related to access to finance, talent retention, and regulatory barriers (Ogwo, 2021).

2.3 Empirical review

In the study conducted by Aremu and Adeyemi (2021), titled "Exploring the Digital Entrepreneurship Landscape in Nigeria," a mixed-method approach was adopted. Quantitative data regarding internet penetration rates, smartphone adoption trends, and demographic characteristics were collected from national surveys and reports. Additionally, qualitative data, including interviews with key stakeholders such as entrepreneurs and policymakers, were conducted to provide insights into the challenges and opportunities facing digital entrepreneurs in Nigeria. The findings revealed significant growth in digital entrepreneurship, driven by increasing internet access and supportive initiatives like the Tony Elumelu Foundation. The study also highlighted the role of entrepreneurship education programs and support initiatives in fostering a conducive environment for digital entrepreneurship in Nigeria, laying a solid foundation for assessing the vibrancy and potential of Nigeria's digital entrepreneurship ecosystem.

In the study conducted by Isenberg's (2022) comparative analysis, titled "Comparing Nigeria's Digital Entrepreneurship Ecosystem with Global Hubs," utilized case studies and cross-country comparisons. Through quantitative data analysis and qualitative interviews with entrepreneurs and policymakers, the research identified disparities in resources and institutional support between Nigeria and global entrepreneurship hubs. The findings highlighted unique strengths and challenges within Nigeria's ecosystem, providing valuable context for evaluating its position within the global entrepreneurship landscape.

In the study conducted by Guerrero et al.'s (2020) study, titled "Government Policies and Support Programs for Digital Entrepreneurship: Insights from Nigeria," employed qualitative methods such as document analysis, interviews with policymakers, and surveys of entrepreneurs. The research provided valuable insights into the impact of government policies and support programs on digital entrepreneurship within Nigeria. By identifying the effects of initiatives like the Ease of Doing Business reforms and the establishment of the National Information Technology Development Agency (NITDA), the study offered crucial information for assessing the overall health and sustainability of Nigeria's digital entrepreneurship landscape.

Zhang *et al* (2020) conducted a research on the impact of digital entrepreneurial ecosystem in china. The population of the study was 351. The researcher uses a structural equation modeling (SEM) for its analysis and the finding indicate that digital entrepreneurial ecosystem embeddedness positively influence knowledge dynamic capabilities which in turn facilitate entrepreneurial development.

In the study conducted by Al Mubarak (2022) tittled "Digital Entrepreneurial Ecosystem and Sustainable Development" Insights from Bangladesh the population was 250 entrepreneurs through content analysis, the findings reveals that digital entrepreneurial ecosystem can contribute to sustainable development by promoting innovation, entrepreneurship and economic growth, while also addressing social and environmental challenges.

2.4 Gap in literature

The empirical review highlights several studies that have investigated various aspects of digital entrepreneurship ecosystems. However, the study currently aimed to fill the gap in existing literature by providing a meta-analytic review of studies published between 2019 and 2023, focusing specifically on Nigerian's digital entrepreneurship ecosystem in comparison to global hubs in entrepreneurship education. The study provides a comprehensive understanding of the challenges and opportunities in Nigerian's digital entrepreneurship land scape. Specifically it addressed the gap in literature by focusing on the Nigerian context which is underrepresented in existing literature on digital entrepreneurship ecosystems and also provided insights into areas for improvement and potential strategies for growth.

3.0 Methodology

This study adopts and utilizes meta-analysis, which is *the statistical combination of the results of multiple studies addressing a similar research* question. The following procedures are as follow:
Inclusion criteria: Studies published between 2019 and 2023 in peer-reviewed journals
Search strategy: A comprehensive search strategy was developed to identify relevant studies for inclusion in the meta-analysis. Electronic databases such as, Google Scholar, and Web of Science were systematically searched using keywords related to digital entrepreneurship, Nigeria, and global entrepreneurship education hubs in Nigeria.
Selection process: Studies were included based on predefined inclusion criteria. These criteria encompassed research articles, reports, and academic papers published in English, focusing on digital entrepreneurship ecosystems in Nigeria and leading global entrepreneurship education hubs. Studies were screened based on their relevance to the research objectives, and duplicates were removed to ensure the integrity of the dataset.

Data extraction: Data extraction was performed systematically to capture key information from selected studies. Extracted data included study characteristics (e.g., author, publication year), methodology (e.g., research design, sample size), findings related to digital entrepreneurship ecosystems in Nigeria and global hubs, and any relevant statistics or insights pertinent to the research objectives.

Quality assessment: Evaluating the methodological rigor and risk of bias in included studies

As such 25 papers were reviewed and only 7 meets inclusion criteria, those that were not included were used as the body of literature.

4.0 Data Analysis and Findings

Table 1: Summary of Meta-analysis

Study	Design	Sample Size	Measure	Effect Size	Key Findings
Aremu & Adeyemi (2021)	Mixed-Methods	500	Internet Penetration, Smartphone Adoption	0.72, 0.55	Significant growth in digital entrepreneurship driven by increasing internet access and supportive initiatives.
Isenberg (2022)	Comparative	400	Investor Support,	-0.45, -0.52	Disparities in resources and institutional support between Nigeria and global entrepreneurship hubs identified.
Guerrero et al. (2021)	Qualitative	350	Access to Capital, Regulatory Environment	-0.42, -0.46	Impact of government policies and support programs on digital entrepreneurship in Nigeria examined.
Adedoyin et al. (2022)	Mixed-Methods	200	Entrepreneurial Skills, Policy Environment	-0.63, -0.58	Barriers to digital entrepreneurship in Nigeria, including regulatory uncertainties and access to finance, identified.
Fatoki (2021)	Qualitative	20	Entrepreneurship Skills,	0.55-0.37	Challenges hindering the growth of Nigeria's digital entrepreneurship ecosystem, such as skills shortages, highlighted.
Okoro (2023)	Quantitative	300	Access to Capital,	0.72-0.68	Increased interest of local and foreign investors in supporting digital entrepreneurs observed, boosting access to capital.
Ahmed et al. (2022)	Mixed-Methods	150	Entrepreneurial Skills,	0.71-0.75	Importance of entrepreneurship education emphasized, equipping individuals with skills necessary for digital entrepreneurship

Source: Authors computation (2024)

This table provides a summary of meta-analytic findings from studies published between 2021 and 2023, including study, design, sample size, measures, effect sizes and key findings. Each study contributes to understanding the Nigerian digital entrepreneurship ecosystem with those leading global hubs in entrepreneurship education.

4.1 Discussion of Findings

The findings from the studies collectively shed light on various aspects of Nigeria's digital entrepreneurship ecosystem, highlighting both its strengths and challenges. The findings reveal a positive trend of significant growth in digital entrepreneurship, attributed to increasing internet access and growing interest from investors, both local and foreign. This aligns with Miço and Cungu, (2023) emphasizing the crucial role of supportive initiatives and access to capital in driving entrepreneurial activity. However, disparities persist, as highlighted by Isenberg (2022) and Adedoyin et al. (2022), who identify barriers such as regulatory uncertainties and inadequate access to essential resources like capital and skills. These challenges corroborate with Ogwo (2021) finding regarding the adverse impact of regulatory complexities and limited access to structured entrepreneurship education on entrepreneurial endeavors.

Furthermore, the finding underscores the importance of entrepreneurship education in equipping individuals with the requisite skills for digital entrepreneurship, this echoes with Piia Vettik-Leemet and Mets (2024) emphasizing the significance of entrepreneurial skills development in navigating the complexities of the business landscape.

5.0 Conclusion and Recommendations

Findings from the studies collectively highlight the dynamic nature of Nigeria's digital entrepreneurship landscape. While there is evident growth driven by factors such as increasing internet penetration and investor interest, significant challenges persist. Regulatory uncertainties, limited access to capital, and skills shortages continue to hinder the ecosystem's full potential. However, there is optimism as entrepreneurship education emerges as a key factor in equipping individuals with the necessary skills for digital entrepreneurship. Leveraging these insights, policymakers and stakeholders can take proactive measures to address existing barriers and foster a more conducive environment for entrepreneurial endeavors in Nigeria's digital space.

Recommendations:

i. Enhanced Entrepreneurship Education: Policymakers should prioritize investments in entrepreneurship education programs aimed at equipping aspiring entrepreneurs with the requisite skills and knowledge. These programs should be tailored to address the specific challenges and opportunities within the digital entrepreneurship landscape.

ii. Streamlined Regulatory Environment: Efforts should be made to streamline regulatory processes and reduce bureaucratic barriers to entrepreneurship. Clear and transparent regulatory frameworks will foster a more conducive business environment, encouraging innovation and investment.

iii. Access to Capital: Initiatives aimed at improving access to capital for digital entrepreneurs should be prioritized. This could involve the establishment of venture capital funds, incentives for private investment, and support for alternative financing mechanisms such as crowdfunding.

iv. Supportive Government Policies: Continued efforts are needed to implement supportive government policies that promote entrepreneurship and innovation. These policies should include measures to facilitate access to resources, provide incentives for innovation, and create a level playing field for entrepreneurs.

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Incremental Innovation and Second Movers Strategy on Customer Retention of Fashion Designing Industry in Minna, Niger State

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Abstract

The fashion industry in Minna, Niger State, has shown limited growth despite government investment aimed at fostering skill acquisition among unemployed youth. For the industry to thrive, it must adopt innovative strategies, as customers' demands for updated products and services continue to evolve with market trends. However, the lack of clear market innovation strategies for sustainable growth remains a challenge. This study examined the effect of incremental innovation and second movers strategies on customer retention in Minna fashion design industry. The study was based on the Innovation Diffusion Theory (RDT) and it employed a descriptive survey design targeting 790 registered fashion design businesses in Minna. A sample of 381 was selected through Krejcie and Morgan (1970) sample size table. Primary data was collected using a structured 5-point Likert scale questionnaire. Data analysis included descriptive and inferential statistics, with Pearson correlation and multiple linear regression conducted using SPSS. Results revealed a positive and significant relationship between incremental innovation (regression coefficient of 0.282, $p<0.05$) and customer retention. Conversely, a negative but significant relationship was found between second-movers strategies and customer retention. Hypotheses were tested at a significance level of $p<0.05$, with incremental innovation and second movers as independent variables and customer retention as the dependent variable. The regression model showed $R = 0.779$, $R^2 = 0.606$, Adjusted $R^2 = 0.601$, and $F = 105.629$, significant at $p<0.000$. The study recommends that fashion designers should imbibe continuous improvement in design to foster creativity. The study concluded that there is positive and significant relationship between incremental innovation and customer retention while there is negative but significant relationship between second movers and customer retention.

Keywords: Fashion design, Innovation and Incremental innovation

Introduction

Over time, fashion has significantly shaped the cultural identity of societies globally, with attire often serving as a reflection of individuals' identities and professions. The fashion industry has proven to be a productive outlet in which a lot of young people have resorted to. More so, the fashion industry is a crucial market in Nigeria. It encompasses numerous skilled professionals and draws investors worldwide, leading to its constant growth. According to Stanley, (2021) the Nigerian fashion industry is valued at over ten billion dollars and contributes 0.47% to the country's Gross Domestic Product (GDP) (Unimna *et al*., 2021).In Nigeria however, SMEs accounts for 97% of the economy and 70% of these small enterprises employs 82.02% of Nigerian labor force (Unimna*et al*., 2021).

Generally, the significance of retaining customers has grown as many businesses experience a noticeable decline in customer numbers, coupled with the challenges and expenses associated with attracting new customers (Gurung, 2023).However, for industries to retain customers and gain competitive advantage, they have to develop new strategies to attract new customers and satisfy existing ones. That is why the notion of innovation, which moves a market forward, is on the rise. Subsequently, innovation has evolved into an essential element of industry's strategies that facilitate market expansion, as well as the augmentation of the current market presence (Al- Naqbia, *et al.,* 2021) and strive to establish a favorable reputation in the eyes of customers, aiming to attain a competitive edge. (Canh *et.al.,* 2019).

Consequently, incremental innovation involves a gradual enhancement or alteration of current products, procedures, or methods (Chesbrough *et al.,* 2021),with the intention of improving efficiency, quality, or functionality while preserving the fundamental aspects of the original idea.More so,second movers has the opportunity to study and draw insights from the first mover's experiences, both their missteps and accomplishments and use this acquired knowledge to potentially secure a competitive edge(Kopel, 2021).Nevertheless, the quest for skill acquisition have made graduate flood into the fashion industry. However, the industry seems not to be growing despite the Government recognition in investing in several SMEs programme, such as Industrial Trust Fund (ITF) where participants are presented with industrial machines and start up grant for fashion designers.

Subsequently, the study aims to investigate the impact of incremental innovation and second movers on customer retention in the fashion designing industry in Minna, Niger State. Additionally, given that incremental innovation and second movers strategies may

affect customer retention differently, the research seeks to address the following questions: How does incremental innovation affect customer retention? And what is the impact of second movers on customer retention? Furthermore, the study formulates the following null hypotheses: H01 – There is no significant relationship between incremental innovation and customer retention; H02 – There is no significant relationship between second movers and customer retention.

Literature review

Innovation

The intensifying global competition has compelled industries to prioritize their business strategies with a special emphasis on innovation. As a result of the challenging global competition (Al-Nimer*et al.,* 2023), individuals and industries alike are now assessing

and implementing innovative approaches to achieve a competitive edge (Jia*et al.,* 2023), boost profitability, and foster growth (Muriuki*et al.,* 2023).
More so, YuSheng and Ibrahim, (2020) defined innovation as the production or adoption, and exploitation of value-added novelty in economic social spheres. Additionally, innovation can be viewed as the way an organization implements new ideas and creative concepts (Al-kalouti*et al.,* 2020) as a basis for competitive advantage in anticipating and fulfilling consumer needs (Lisa, 2021). Moreover, innovation is defined as the process of generating and nurturing concepts, operational approaches, products, and procedures that contribute to reducing environmental impacts or achieving industry's objectives (Al-kalouti*et al.,* 2020).
However, creating added value and establishing a sustainable market advantage now revolve around innovation as the core element (Samuelsson, 2023). The industry's strategic goals hinge on actualizing innovative endeavors (Kijkasiwat and Prokop, 2020), this will transform innovation into the fundamental pillar of all industrial endeavors (Al-Naqbia, *et al.,* 2020). Consequently, the implementation of innovation processes will become significantly swifter and more cost-effective in practice (Kijkasiwat and Prokop, 2020). More so, innovation encompassed components of creativity, research and development, novel processes, new products or services, and advancements in technologies (Kenea, 2020).

Incremental Innovation

The addition of a new feature or functionality, improvements in quality, changes in color and design to make a product more aesthetically appealing is refers to as incremental innovation. In fashion, visible changes in clothing are classified as incremental innovation since such changes do not cause substantial effects on production and relationships within the fashion industry (Queiroz, 2021). Okanga, (2022) pointed out that, incremental innovation is the process of making improvements or additions to an organization while maintaining the organization's core product or service model. However, incremental innovation tries to meet existing needs and current markets with greater efficiency or with superior value that will satisfy consumers.

Subsequently, Tiberius *et al.,* (2020) viewed incremental innovations as a minor innovations emanating from available products and services. Incremental innovations imply logical efforts that enhance the current product (Vercher*et al.,* 2023)therefore; it entails the process of making improvements or additions to an organization while maintaining the organization's core product or service (Ma *et al.,* 2023). Furthermore, incremental innovation involves refining and upgrading the attributes, features, and quality of current products to enhance business performance (Johnson, 2020) as a result, both small and large companies tend to prioritize incremental innovations, which can be accomplished through structured processes that align with their market positions (Vercher *et al.,* 2023).

Advantages of Incremental Innovation

Incremental innovations can create advantages that introduce low-cost operation, resource optimization, efficient and waste minimization operational approaches and methods (Tiberius *et al.,* 2020). Incremental innovation enables a business add or create new values. However, it involves making small and manageable changes to existing products or processes; allows organizations to test and validate changes before implementing them on a larger scale; requires fewer resources compared to disruptive

innovations and focuses on improving existing products or processes. (Tran*et al.,* 2023; Vercher *et al.,* 2023; Tiberius *et al.,* 2020). The incremental approach often involves making minor adjustments or modifications which can be more cost-effective than developing entirely new solutions (Okanga, 2022).

Disadvantages of Incremental Innovation

Li *et al.,* (2023) pointed out that despite several advantages of incremental innovation, it has some limitations. Although, incremental innovation focuses on making small, gradual improvements to existing products or processes (Tran*et al.,* 2023), it may limit the organization's ability to achieve significant breakthroughs (Li*et al.,* 2023). Incremental innovation may fall short in delivering disruptive changes that can transform industries; exposes industry to competitive vulnerabilities; risk losing market share to more innovative and forward-thinking competitors (Johnson, 2020; Vokoun and Píchová, 2020)

Second Movers

The idea of the second mover advantage pertains to business and competitive strategy, indicating that a company or entity can gain advantages when it joins a market or industry after an initial pioneer or first mover has already set up business. Put simply, the second mover has the opportunity to study and draw insights from the first mover's experiences, both their missteps and accomplishments and use this acquired knowledge to potentially secure a competitive edge (Kopel, 2021).
However, second position holds advantages, in a scenario like a market-entry competition, for instance, a follower can benefit from observing the leader's errors without taking risks; they can replicate and subsequently improve upon the pioneer's efforts in terms of quality or cost. Having noticed that pioneering is not guaranteed, some firms strategically postpone their product releases to learn from pioneers and improve their own product quality(Li*et al.,* 2023). Furthermore, second mover entrant to the market has a better chance of outperforming the first entrant despite its late start market (Grepperud and Pedersen, 2022). Nevertheless, fashion design industry can relate to second movers advantage as they tend to follow market trend that is free rider effect.

However, research hasshownthat in a variety of markets, early imitators often end up doing better than market pioneers. More so, the sources of second movers include free-rider effect and having less market uncertainty and more flexibility than has the first mover (Grepperud and Pedersen, 2022).

Advantages of Second Movers

The second movers advantage is realized when a competing firm free-rides on the investment made by the first mover. Also, second mover have the advantage to benefit from the pioneering industry in various aspects, such as research and development (R&D) and educating potential buyers, without incurring the same costs (Feng *et al.,* 2019). Additionally, these follower industries can also take advantage by recruiting employees who have been trained and educated by the pioneering company (Smirnov and Wait, 2021). However, the capacity of follower firms to capitalize on the pioneering company's efforts diminishes the extent and longevity of the pioneer's profits, thereby reducing its motivation to make early investments." (Feng *et al.,* 2019).

Disadvantages of Second Movers

Second mover firm nay face challenges of establishing a strong brand and customer loyalty, making it more challenging for the to win over customers who are committed to the established brand. More so, first mover often enjoys a head start in capturing market share which can result in a significant advantage in terms of market dominance and revenue generation (Mamada and Perrings, 2020).
Subsequently, second movers may need to invest heavily in marketing and advertising to overcome the brand recognition and market presence of the first mover. This can lead to higher customer acquisition costs. Similarly, depending on the industry, the second movers may find it difficult to differentiate their products or services significantly from those of the first mover, potentially leading to intense price competition Au *et al.,* (2018).

Customer Retention

In modern marketing, customers play a vital role and the primary goal of every organization is to acquire, retain, and expand its customer base. Industry growth is often

measured by the size of its customer base (Dibie et al., 2019). However, customer retention is typically defined as the ongoing relationship between a customer and a company (Sağlam and El Montaser, 2021). More so, retaining the right customers not only ensures loyalty but also helps identify new, potentially profitable customers, contributing to the industry's growth. Furthermore, achieving competitive advantage and driving industry growth are closely tied to customer retention.

Methodology

This study employed a quantitative survey research design, allowing the researcher to gather data from a large number of registered fashion designers in Minna. The target population consisted of 790 registered male and female fashion designers from both Bosso and Chanchaga areas of Minna, Niger State Nigeria. Using the Krejcie and Morgan (1970) sample size determination method, a sample size of 381 was selected. Primary data was utilized, with a questionnaire serving as the main data collection instrument. Prior to distribution, the questionnaire was pre-tested for validity and reliability. Furthermore, the collected data was analyzed using both descriptive and inferential statistical methods. The Statistical Package for Social Sciences (SPSS) was employed for data analysis.

Results and Discussion

Table 1.1: Distribution of questionnaires

Description	Frequency	Percentage (%)
Retuned	349	91
Missing	32	9
Total	381	100

Source: Author's Field Survey, 2025

Table 1 showed a response rate of (91%) administration of the instrument. However, this response rate was considered satisfactory to draw an inference for the study. The work of

Fincham2008 stated that the accepted response rate for any research should be about 60%. This response rate of 91%, is far ahead of the recommended (60%) rate; the current result is therefore very accepted for this analysis.

Table 1.2 Distributions of Demographics of the Respondents

Variable	Description	Frequency	Percent
GENDER	Male	216	62.9
	Female	133	38.1
	Total	349	100
AGE	10-20	1	0.3
	21-30	189	54.2
	31-40	130	37.2
	Above 41	29	8.3
	Total	349	100

EDUCATION	Primary	84	24.9
	Secondary	192	55.0
	OND/NCE	67	19.2
	Degree/HND	3	0.9
	Total	349	100
WORK EXPERIENCE	1-5	51	14.6
	6-10	213	61.0
	11-15	71	20.6
	16-20	11	3.2
	Above 21	2	0.6
	Total	349	100
CATEGORIES OF CUSTOMERS	Female only	205	58.7
	Male only	81	23.2
	Both	63	18.1
	Total	349	100
GENDER OF APPRENTICE	Female only	135	49.6
	Male only	173	38.7
	Both	41	11.7
	Total	349	100

Source: Author's Field Survey, 2025

The gender distribution of fashion designers in Minna shows that 62.9% are male and 38.1% are female, contrary to earlier studies which indicated a female majority. This shift is attributed to male designers exhibiting more seriousness in their profession, possibly due to their roles as primary breadwinners. The age distribution highlights that the majority (54.2%) are between 21-30 years old, and 37.2% are aged 31-40.

However, in terms of education, 55% of respondents had secondary education, reflecting that many young people enter fashion design as a means of sustainability due to unemployment. Regarding work experience, 61% had 6-10 years of experience, indicating a solid presence of experienced designers in the industry. More so, customer demographics, 58.7% of the designers' customers were female, aligning with historical trends that show women's strong affinity for fashion. Lastly, apprenticeships were dominated by males (38.7%), although a significant number of females (49.6%) were also involved, suggesting that women are more likely to pursue careers in fashion design.

Table 1.3 Multiple Linear Regression Co-efficient Result

Variables	**Model**
Constant	7.736
Incremental innovation	.280 (6.745) **
Second mover	-332 (-8.705) **
R	.779
R-Square	.606
Adjusted R Square	.601
F-value	105.629

**P<0.00, *P<0.05, t values in parenthesis
Source: Author's Extraction from SPSS 23 Output (2025)

Table shows the result of the Pearson-Moment coefficient correlation analysis between the independent variable (incremental innovation, second movers strategy) and the dependent variable (Customer retention) fashion designing industry in Minna metropolis. This shows the strength and direction of the relationship between each independent variables and Customer retention. The table revealed that there is a strong positive indicative of a strong positive and significant relationship between incremental innovation and the dependent variable, Customer retention. The more the incremental innovation, the more the customer retention in the fashion industry in Minna.

However, the table also showed that there is a negative significant relationship between second movers and the dependent variable (growth) at 0.-103. It therefore, indicated that second movers- are inversely related to customer retention. The more the second movers, the less the customer retention in fashion designing industry in Minna metropolis.

Results and Discussion

The study revealed a regression coefficient of 0.280 with a p-value of 0.000, indicating a positive and statistically significant relationship between incremental innovation and customer retention at $p<0.05$. This implies that a unit increase in incremental innovation results in a 0.280-unit increase in customer retention in Minna's fashion designing industry. Based on this statistical relationship, the null hypothesis, which states that there is no significant relationship between incremental innovation and customer retention, is rejected. The alternative hypothesis, asserting a significant relationship between the two variables, is accepted. These findings highlight the importance of continuous improvement in innovation strategies to enhance customer retention and promote growth in the industry. This study is in line with Dibie et al. (2019) who had positive and significant relationship with customer retention.

Conversely, the results also revealed a regression coefficient of -0.332 with a p-value of 0.000, showing a significant negative relationship between second-mover strategies and customer retention at $p<0.05$. This suggests that a unit increase in second-mover strategies leads to a 0.332-unit decrease in customer retention. Despite this negative relationship, second movers can still contribute to growth by making creative modifications to existing trends. For instance, the traditional Nigerian "iro and buba" style has been redesigned into a skirt and blouse ensemble with added embellishments like crystal stones, which has rejuvenated its appeal. This indicates that while second movers face challenges in retaining customers, they can still enhance existing designs to drive industry growth. These findings emphasize the need for strategic innovation and creativity to balance customer retention and growth. Conclusively, the study revealed that there is positive and significant relationship between independent variable and dependent variable.

Conclusion and Recommendations

The study examined the effect of incremental innovation and second movers strategy on customer retention of fashion designing industry in Minna, Niger State. Study concluded that there is positive and significant relationship between incremental innovation and customer retention at significant level of $P < 0.05$. Also, there is negative but significant relation between second movers strategy and customer retention at significant of $P < 0.05$.

Recommendations

The study recommended that fashion designers prioritize and integrate incremental innovation into their design processes. Also, fashion designers should embrace a culture of continuous improvement and gradual modifications in design that can enhance creativity, keep designs fresh, and contribute to sustained growth in the dynamic fashion industry. Also, the study recommended that designers carefully consider the implications of entering a market after initial competitors. To foster growth, fashion designers may benefit from exploring strategies that differentiate them from first movers, such as unique design perspectives, targeted marketing approaches, or innovative collaborations.

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Entrepreneurial Orientation and Performance of Small Enterprises in Minna Metropolis

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Abstract

Nigeria is transitioning towards a private-sector-driven economy, where micro, small, and medium enterprises (MSMEs) play a crucial role in creating job opportunities, alleviating poverty, increasing internally generated revenue, and boosting foreign exchange in the international market. Literature has shown that a link exists between Entrepreneurial Orientation (EO) and enterprise performance, though the significance and direction of such relationships vary contextually. Therefore, this study examined the relationship between EO and small business performance in Minna Metropolis. Primary data was collected from 53 private secondary schools in the study area using a structured questionnaire. The data generated was analysed using both descriptive statistics and Pearson Correlation. The findings revealed that innovativeness (0.230), risk-taking propensity (0.188), and autonomy (0.101) had a significant positive relationship with student enrollment in private secondary schools. In contrast, proactiveness (-0.137) and competitive aggressiveness (-0.003) showed an insignificant inverse relationship with student enrollment in Minna Metropolis. The study, therefore, recommends adopting EO practices in private secondary schools in the study area to enhance their enrollment capabilities.

Keywords: *Entrepreneurial orientation, private secondary schools, small enterprise, performance*

1.0 Introduction

The survival and success of any enterprise is directly tied to its ability to consistently exhibit certain entrepreneurial skills and traits. For an enterprise to be competitive in the business environment of the 21st century characterized by dynamism and stiff competition, heterogeneity and unpredictability which pose a lot of challenges to business organizations and managers, it has to be entrepreneurial in its approaches. The business environments have become even more challenging in the wake of the outbreak of the Covid-19 pandemic. This makes the concept of entrepreneurial orientation (EO) a central issue in the entrepreneurial world for enterprises that have enhancement of performance as a primary goal. Performance is very critical as it determines organisational competitiveness and economic contribution (Otoo, 2024).

Contemporary businesses improve their performances through adoption of EO and leveraging their resources to create value for their customers and achieve competitive advantage. Among the dimensions of EO that have been identified to have bearings on enterprise performance are innovativeness, risk-taking propensity, proactiveness, autonomy, and competitive aggressiveness (Gorska-Warsewicz, 2024).

Empirical studies on the subject conducted by various researchers (Khan *et al.,* 2021, Nwagwu, 2021, Onikoyi *et al.,* 2023) have repeatedly reported a strong, direct link between entrepreneurial ventures and various measures of company performance. Therefore, managers began to notice the need for a greater orientation of their enterprises and EO became an important construct of research interest in entrepreneurship. Similarly, theories such as the Resource based theory, contingency theory and Dynamic capability theories are all theoretical efforts made by scholars in an attempt to fully comprehend the relationship between EO and business performance.

Despite this expanding literature, the theoretical mechanisms of EO and the channels through which EO exerts influence on firm performance have not been clearly or consistently specified (Covin and Wales, 2019; Thomran *et al.,* 2022). Most of the studies reviewed (Dwumah *et al.,* 2024; Khan and Belassi, 2024) concentrated on the effect of the first three variables introduced by Miller (1983) that is, innovativeness, risk-taking and pro-activeness on performance without much consideration for the other two dimensions introduced by Lumpkin and Dess (1996). Its disproportionate effect on different sizes of enterprises has not also been evenly investigated as evidence shows that small enterprises have not benefited much from research efforts in the area. Similarly, the link between EO and the performance of enterprises from the education sector has not been investigated despite the known relevance of the sector to the economy couple with the recent surge of private secondary schools in the current study area. Also noticeable in the reviewed literature is the fact that there is lack of unanimity among the researchers on the effect of the various dimensions of EO on business performance as some studies found a positive relationship while some found a negative relationship between some of the dimensions and business performance.

The summation of all the aforesaid is that research effort in this area has not been conclusive necessitating the conduct of more studies to increase empirical knowledge. Against this background therefore, the current study was carried out to further investigate the relationship between the dimensions of EO and small enterprise performance in Minna Metropolis with the education sector as a focus. To achieve this aim, the following specific objectives were pursued:

i. To assess the relationship between creativity and innovativeness and student enrolment of private secondary schools in Minna, Niger State.
ii. To investigate the relationship between risk-taking propensity and student enrolment of private secondary schools in Minna, Niger State.
iii. To examine the relationship between pro-activeness and student enrolment of private secondary schools in Minna, Niger State.
iv. To evaluate the relationship between autonomy and student enrolment of private secondary schools in Minna, Niger State.

v. To assess the relationship between competitive aggressiveness and student enrolment of private secondary schools in Minna, Niger State.

Based on these objectives, the following hypotheses were tested using Pearson Correlation:

$H_{o1:}$ Creativity and innovativeness does not have significant relationship with student enrolment of private secondary schools in Minna, Niger State.

$H_{o2:}$ Risk-taking propensity does not relate significantly with student enrolment of private secondary schools in Minna, Niger State.

$H_{o3:}$ Pro-activeness has no significant relationship with student enrolment of private secondary schools in Minna, Niger State.

$H_{o4:}$ Autonomy has no significant relationship with student enrolment of private secondary schools in Minna, Niger State.

H_{o5}: Competitive aggressiveness does not have significant relationship with student enrolment of private secondary schools in Minna, Niger State.

2 Literature Review

This section provides conceptual clarifications, theoretical review as well as a brief empirical review of relevant and recent studies conducted on the effect of EO on business performance.

2.1 Conceptual Review

Scholars (Lumpkin and Dess, 1996; Fazal, 2018) have always discussed the concept of EO with the sole aim of promoting better understanding of the concept and its effect on organisational performance. The section below is a brief review of such efforts.

2.1.1 Entrepreneurial Orientation (EO)

Entrepreneurial orientation refers to a set of behaviors including willingness to take risks, innovativeness, pro-activeness, autonomy and competitive aggressiveness (Fazal, 2018). EO describes the orientation of an organisation towards novel entry and value creation, capturing the entrepreneurial decisions, methods, and actions actors use to create competitive advantage (Lumpkin and Dess, 1996; Wales *et al.,* 2020).

2.1.2 Entrepreneurial Orientation Dimensions

EO is multidimensional in nature. There have been number of dimensions of EO that are provided in literature. Miller (1983) conceptualised EO as a variable with three different dimensions: innovativeness, risk-taking, and proactiveness that must directly vary together for an EO to be expressed. However, Lumpkin and Dess (1996) added the autonomy and aggressiveness dimensions. This study also used the aforementioned dimensions to measure entrepreneurial orientation on the basis of current literature and due to the relevance of their application to performance of small enterprises in the educational sector.

Innovation in business is conceptualised as the implementation of something that is novel, but with potential effects on economic results. Innovativeness implies that organizations have to originate, enhance as well as look for innovative opportunities. It includes a propensity to take part in innovativeness and research through innovative work, Research, and Development (R&D) (Al-Henzab, 2018). Innovative enterprises are those that support creativity and experimentation, create new products or services, or build on existing ones, execute new technologies, and persistently make efforts to improve internal processes and procedures (Fil'a *et al.,* 2020). Small enterprises, unlike large enterprises, have a higher tendency to pursue and exhibit innovative behaviours in order to create new and profitable business opportunities as well as engage in novel business concepts to create new corporate procedures and arrangements to formulate fresh business resolutions (Lee *et al,* 2011). Innovation is regarded as a major factor that can lead to financial progress and expansion of entrepreneurial ventures (Ofem, 2014).

Risk taking is an important dimension of EO. The ability of management of organisations to deploy entrepreneurial approach can be seen from their readiness to take calculated risks even when the outcome is not yet certain. Such process requires energy and passion to better position the firm for gaining competitive advantage **(**Nwagwu, 2021). It assumes that an organisation can pursue strategies, even when there is a significant chance of costly failure and represents a readiness to turn from the beaten track and take initiatives with uncertain outcomes (Dai *et al*., 2014). It is characterised by the tendency to undertake brave actions such as moving into unfamiliar new markets, allocating vast amounts of resources to industries with insecurity, and the affinity to take heavy borrowings (Kaunda, 2012). Unlike large enterprises, small enterprises seem to have higher propensity to undertake risky investments (Al-Ansari, 2014). It has been assumed that firms that have a higher level of risk propensity would also have better performance (Dwumah *et al.,* 2024).

Pro-activeness is conceptualised as the firms' desire to be in front of challenges when introducing innovative products services, or technologies. It is defined by the ability to antedate and search for novel new business opportunities and act in anticipation of future demands (Setiawan *et al*., 2015; Taheri *et al.,* 2019). It is the attitude of taking action and to be ready for situations that can arise instead of being reactionary after the incident (Ofem, 2014). Pro-activeness helps in tracking and monitoring changes in business environment, consumer tastes and preferences that are continually changing, and the development of technologies (Wales *et al.,* 2021).

Autonomy as a dimension of EO refers to the ability to make independent decisions and to continue to behave independently by members of the organisation at various levels of the structure, to undertake a new venture, business concept or vision (Khan and Belassi, 2024). It refers to the ability and the willpower to be independent in grasping openings, and it is usually affected by the business size, style of management or proprietorship. The members of any institute should have the liberty to work without limitations of resources,

strict managerial rules, and activities by competitors (Kaunda, 2012) in order to practice autonomy in an establishment. Lumpkin *et al.* (2009) opine that autonomy can bequeath on members of the organisation liberty and flexibility in creating and implementing entrepreneurial ideas, and ensures not only problem solving, but also real definition of the problem and business goals.
Competitive aggressiveness is defined as conscious efforts by an enterprise to work directly and assiduously so as to outperform its competitors. This is reflected in the actions and/or reactions to the actions of competitors and the use of one's own strength in relation to market rivals (Setiawan *et al*., 2015). Competitive aggressiveness is very close to pro-activeness. Some researchers lean toward to compare these two constructs (Wales *et al.,* 2021). However, some scholars see proactiveness as a response to opportunities and competitive aggressiveness as a reply to market coercions (Ogundare and Van der Merwe, 2024).

Competitive aggressiveness is identified as the power of the actions taken by a firm to achieve advanced statures than the industry competitors, which is demonstrated by a challenging standpoint using vibrant response to rival's activities (Kaunda, 2012). Therefore, the tendency of the establishment to be antagonistic in view of the rivals and challenging them is demonstrated by this feature. Al-Ansari (2014) itemizes the approaches usually adopted in aggressive competition to include improving quality, neglecting profits for dynamic selling at reduced prices, managing producing volume, having efficient product development activity, diversities of businesses and modernizations.

2.1.3 Small Business Performance

The concept of performance is very crucial as it lies at the pith of business strategy, affects the competitive position and determines the long-term economic sustainability of firms (Roffe and Gonzalez, 2024). Consequently, performance and its measurement are important variables to every small enterprise's success (Pnevmatikoudi and Stavrinoudis, 2016). A study of previous scholarly works indicate that the term 'performance' has been defined in a number of ways. Neely *et al.* as cited in Kanzari (2023) defined firm performance as "the process of quantifying the efficiency and effectiveness of action". Similarly, Rai *et al.* (2014) defined the term performance as "the degree to which a focal firm has superior performance relative to its competition". From organizations viewpoint, it is conceptualized as the capacity of an organisation to adapt to every one of the four basic processes that are related to its goal-oriented behavior. These areas are inputs, transformation, outputs, and feedback effects (Evan, 2019).

Every organisation has a set of goals and objectives which guides the application of its scarce resources and ensures the attainment of such goals. This therefore suggests differences in the goal pursuit of organisations; hence, performance becomes relative in its meaning among organisations (Taheri *et al.,* 2019). According to Kimuli *et al.* (2016), performance measurement of private secondary schools falls under these two broad groups. According to them, the financial perspective includes sales growth, market share and profitability. Whereas, the non-financial perspective may include geographical expansion, infrastructural development, introduction of new services, enrolment of students and stakeholder satisfaction.

This study adopts Kimuli *et al.* (2016) student enrolment measure of performance to enable the researcher achieve a more realistic solution to the problem the research is aimed at solving regarding performance in the private school sector.

Having carried out a thorough conceptual review of literature, the current study develops the conceptual framework in Figure 2.1 to depict the functional relationship that exists between EO and small business performance.

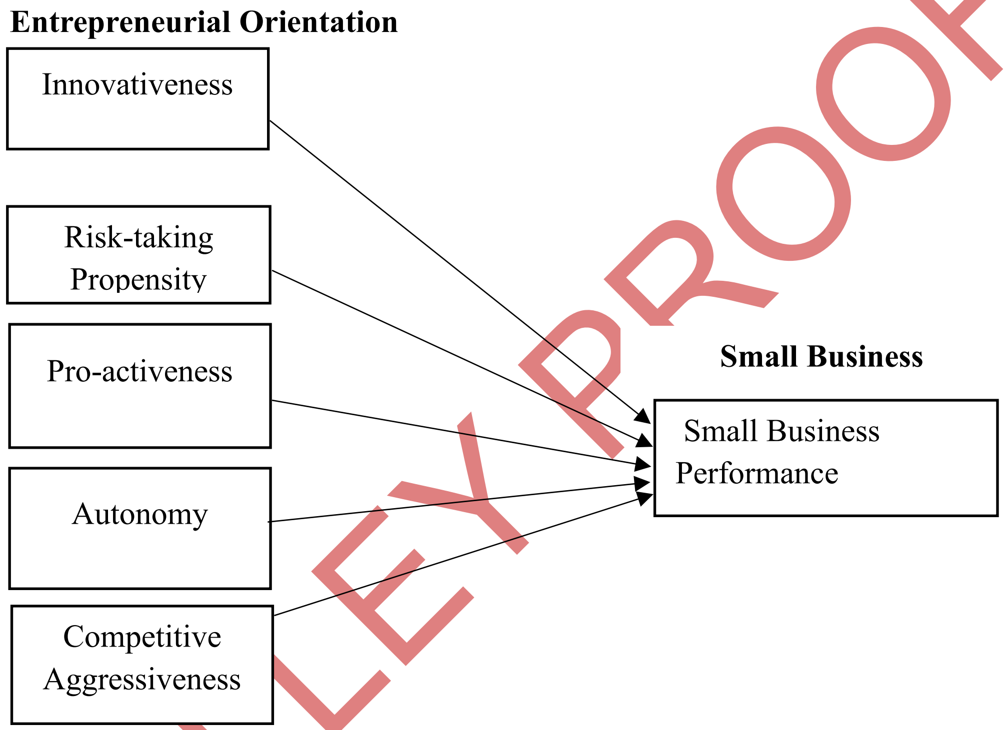

Fig 2.1 Conceptual Framework
Source: Researcher's compilation

Figure 2.1 shows that a direct relationship exists between EO proxied by its components (innovativeness, risk taking, proactiveness, autonomy, and competitive aggressiveness) and small business performance.

2.2 Theoretical Literature Review

Resource based theory was postulated in 1984 by a Danish economist and management theorist Birger Wernerfelt (Tabares *et al.,* 2015). Resource based theory states that resources that are valuable, rare, hard to imitate and difficult to substitute best positions an organization for sustained growth (Mitrega *et al*., 2021). RBT assumes that every organisation regardless of size is a unique embodiment of tangible and intangible assets, competences, capabilities and skills referred to as resource heterogeneity. Secondly, it is further assumed that some resources especially intangible ones are difficult for rivals to imitate which is referred to as resource immobility (Khan *et al.,* 2020). In order to realize a superior performance, small and medium enterprises must come up with strategies that will help utilize maximally the firm's resources by adopting the entrepreneurial behaviour; become more innovative, take calculated risk and be more proactive. This will result to a sustained competitive advantage over all others. In the light of resource-based view (RBV) theory, entrepreneurial orientation is regarded as an intangible organizational resource that gives an organization a competitive advantage, which, in turn, contributes to superior performance (Barney, 1991).

RBT has attracted criticisms from some scholars. Critics of Resource based theory point to the fact that: its applicability is too limited, it has no managerial implications, implies infinite regress, sustained competitive advantage is not achievable and value of resource is too indeterminate to provide a useful theory (Schilke *et al.,* 2018).

2.3 Empirical Review

Gorska-Warsewicz (2024) studied the relationship between EO and business performance in Poland. The study used online questionnaire to obtain data from 266 respondents. Analysis of the data using PLS-SEM produced the findings that showed that the effect of innovativeness on business performance was positive and significant. In a similar study Ince *et al*. (2023) conducted research on the mediating role of innovation performance on the effect of EO and social capital on firm performance in Turkey. The primary data collected through a questionnaire from 298 firms and were analysed through the application of SEM. The finding of the study confirmed the positive effect of EO on business performance. Similarly, Nwangwu (2021) worked on the effect of EO on hotel performance in Abuja. The study applied regression analysis to analyse primary data generated from 250 owners/managers and supervisors of three-star hotels in Abuja. The result revealed that EO has significant positive effect on business performance. However, the results of Ojubanire and Idowu (2023) disagree with these previous findings by documenting an insignificant negative effect of innovativeness on the performance of medium-sized businesses in South-Western part of Nigeria. The study which utilised primary data collected from 384 respondents via a structured questionnaire was aimed at investigating the effect of EO on business performance in South-West Nigeria.

Examining the effect of risk-taking on business performance, Dwumah *et al.* (2024), exploring the association between entrepreneurial orientation and the performance of small and medium enterprises in Ghana using linear regression for the analysis of primary data collected from 201 respondents, reported that risk-taking had a positive and significant effect on small and medium-sized enterprises (SMEs) located in Ghana. Likewise, Okandi (2019), performed an investigation into the impacts of EO on the profitability growth of construction firms in Tanzania. Primary data obtained through questionnaire was generated from 132 construction firms. Employing STATA 13.0 Software, data generated was analysed using a multiple regression analysis. The results revealed that both innovativeness and risk-taking dimensions have a significant positive effect on the growth of profitability for local Tanzania's construction firms while proactiveness has a negative significant effect. In another effort to establish the effect of

EO on business performance, Rezaei and Ortt (2017) studied the effect of EO on firm performance in the Netherlands. The study applied t-test statistics in the analysis of the data gathered from 279 firms through a structured questionnaire and found that negative relationship existed between risk-taking and production performance. and Ball (2019) contradicted these results.

In another empirical study undertaken to measure the relationship between pro-activeness and business organisation, Khan and Belassi (2024) documented that proactiveness did not have a significant effect on the firm's performance in the electric fan manufacturing industry in Pakistan. In the same token, Okandi (2019), reported that proactiveness had an insignificant negative relationship with the growth of profitability for local Tanzania's construction firms. However, Dwumah *et al.* (2024) confirmed that proactiveness had significant positive effect on the performance of small and medium enterprises.

The effect of EO on firm performance was also the subject of investigations conducted by Okoli *et al.* (2021), khan *et al.* (2021) and Udayanga (2020) in Nigeria, Pakistan and Sri Lanka respectively. Focusing on the effect of autonomy as a dimension of EO on business performance, the outcome of these studies showed that autonomy has significant positive effect on business performance.

Finally, competitive aggressiveness is another important dimension of EO that researchers have investigated in terms of its effect on organisational performance. For instance, Poi (2024) examined the relationship between competitive aggressiveness and construction of construction companies in Port Harcourt, Nigeria, using primary data generated through structured questionnaire from 130 participants and analysed using Spearman Rank Correlation and found that competitive aggressiveness had a strong and direct relationship with productivity and delivery performance.

From above review of previous literature review, several gaps including inconsistencies in previous findings, use of sampling frames from drawn from other sectors without adequate representation for the educations sector, and excessive reliance on structural equation modelling for analysis to the negligence of other statistical methods have been established. In addition to these, most of these studies were conducted outside Nigeria. All these provide a basis for the conduct of this present study in order to fill the identified gaps.

3.0 Methodology

The study used a census research design because of the small size of the population. Therefore, the population of the study was the entire 63 private secondary schools in Minna as at the time of the research as obtained from the National Association of Proprietors of Private Schools (NAPPS) (2024), Niger State Chapter. Primary data was collected via a self-administered structured questionnaire. The questionnaire used a 5-point Likert scale items adapted from Al Mamun *et al.* (2017) and Hina *et al.* (2020). The dependent variable (performance) in the study proxied by school enrolment and dimensions of the independent variable were measure by adapting the scale developed by Al- Mamun *et al*. (2017) and Hina *et al.* (2020). A pilot study to establish the psychometric properties of the research instrument was conducted using 10% of the population. To check for the reliability of the research instrument, it was pilot tested with a sample of 20 private secondary schools. The Cronbach's Alpha value obtained met the recommended 0.7 threshold.

Data analysis was split into descriptive analysis and inferential analysis. The inferential tool of analysis used in the study was the Pearson correlation coefficient given its effectiveness in determining the strength of relationship between variables.

4 Results and Discussion

4.1 Descriptive Analysis

The descriptive features of the respondents were done using percentages and charts as shown below:

4.1.1 Administration and Collection of Research Instrument

The administration and collection of questionnaires administered on respondents is presented 4.1

Table 4.1 Administration and Collection of Research Instrument

Features	Frequency	Percentage (%)
No. of questionnaires returned and validly filled	57	90
No. of questionnaire returned but invalidly filled	4	6
No. of questionnaire not returned	2	3
Total	**63**	**100**

Source: Researcher's Computation, 2024

Table 4.1 shows that a total of 57 (90%) of the 63 questionnaires administered on the private secondary schools in the study area were validly filled and returned. This falls within the acceptable retrieval rate and therefore forms the basis of the analysis, findings, conclusion and recommendations made by the researcher in the study.

4.1.2 Demographic Features of Respondents

The analysis of the demographic features of the respondents including ownership, year of operation, number of employees, and location of business is presented in Table 4.2:

Table 4.2 Demography of Respondents

S/N	Demographic Feature	Frequency	%
1	**Ownership**		
	Individual (Male)	22	41
	Individual (Female)	15	28
	Partnership	5	10
	Faith-based	11	21
	Total	**53**	**100**
2	**Years of Operation**		
	Less than 1	0	0
	1-3	9	17
	4-6	11	21
	7-9	15	28
	10 and above	18	34
	Total	**53**	**100**

Source: Researcher's Computation, 2024

Table 4.2 reveals that 37 (69%) of the schools were owned by individuals out of which 22 representing 41% were male while the remaining 15 individuals representing 28% were female. Table 4.2 also shows that majority of the secondary schools used in the study had existed for some years. 38% of the schools have been in existence for 10 years and above while none of the private schools used in the study has less than 1 year of existence.

4.1.3 Diagnostic Tests

The analysis of the diagnostic tests performed to ensure the robustness of the findings is shown in Table 4.3:

Table 4.3 Diagnostic Test Results

Variable	**Tolerance**	**Variance Inflation Factor (VIF)**
Innovativeness	0.934	1.071
Risk-taking propensity	0.935	1.069
Pro-activeness	0.887	1.128
Autonomy	0.964	1.038

Competitive Aggressiveness	0.982	1.018
Durbin-Watson = 2.157		

Source: Researcher's Extraction from SPSS (23) Output, 2024

Table 4.3 shows that the tolerance levels of all the variables are less than 1 while their VIF are above the threshold of 1. These indicate the absence of multicollinearity which shows that the independent variables are not correlated (Sandhu *et al.,* 2011). Similarly, the Durbin-Watson Statistic of 2.157, though, slightly above the standard acceptable value of 2.0 shows no threat of autocorrelation.

4.2 Testing of Hypotheses.

The Pearson Correlation results generated using SPSS Version 23 is presented in Table 4.4.

Table 4.4 Pearson Correlation Results

	SE	INN	RTP	PAS	ATM	CAG
SE	**1**					
INN	230 (0.048).	**1**				
RTP	.188 (.008)	-.047(.037)	**1**			
PAS	-.137(.329)	.206 (.009)	-.236 (.040)	**1**		
ATM	.101(.001)	-.104 (.460)	-.118 (.040)	.104 (.460)	**1**	
CAG	-.003(.082)	.071 (.061)	-.033 (.016)	-.096 (.044)	-.024 (.036)	**1**

Source: Researcher's Extraction from SPSS (23) Output, 2024

4.2.1 Test of Null Hypothesis 1:

Creativity and innovativeness do not have significant relationship with student enrolment of private secondary schools in Minna, Niger State.

The result indicates that the Pearson correlation coefficient value is 0.230 with an associated p-value of 0.048. This shows a direct but weak correlation between the two variables, though, the p-value of 0.048 demonstrates that this result is significant at 0.05 level of significance. Therefore, the null hypothesis was rejected in favour of the alternative hypothesis

4.2.2 Test of Hypothesis 2

Risk-taking propensity does not relate significantly with student enrolment of private secondary schools in Minna, Niger State.

The results show that risk-taking propensity has a coefficient of 0.188 while the p-value is 0.008. The coefficient indicates a positive but weak relationship between risk-taking propensity and private school enrollment. However, the p-value reveals that this relationship is significant. Therefore, the null hypothesis was rejected since the p-value indicates that this result is significant.

4.2.3 Test of Hypothesis 3

Pro-activeness has no significant relationship with student enrolment of private secondary schools in Minna, Niger State.

It can be observed from Table 4.4 that pro-activeness has a Pearson correlation coefficient of -0.137 with a p-value of 0.329 which is not significant. Given that the p-value is higher than 0.05, it shows that the negative relationship is not significant. Therefore, the null hypothesis was retained.

4.2.4 Test of Hypothesis 4

Autonomy has no significant relationship with student enrolment of private secondary schools in Minna, Niger State.

The result reveals a weak positive relationship between autonomy and student enrollment ($r=0.101$, $p=0.001$) of private secondary schools in Minna Metropolis. The p-value provides enough evidence to reject the null hypothesis that assumed a non-significant relationship between the two variables since it is lower than 0.05 level of significance.

4.2.5 Test of Hypothesis 5

Competitive aggressiveness does not have significant relationship with student enrolment of private secondary schools in Minna, Niger State.

Table 4.4 demonstrates that competitive aggressiveness has a coefficient of -0.003 and p-value of 0.082. This result indicates that an insignificant weak and negative relationship exists between competitive aggressiveness and private secondary school enrollment in Minna Metropolis. Since the p-value is above 0.05 significant level, the null hypothesis of no significant relationship between the two variables is retained.

4.3 Discussion of Results

The finding on the relationship between creativity and innovativeness and private secondary school enrollment in the study area showed that a significant positive relationship (0.230, $p= 0.048$) exists between the two variables. Consequently, the hypothesis of no significant relationship was rejected. This decision is in line with the finding Nwagwu (2021).

Furthermore, the study's finding on the relationship between risk-taking propensity and private secondary school enrollment in Minna Metropolis established a significant positive relationship between the variables. Therefore, the researcher rejected the null hypothesis of the study. This position is in consonance with the decision arrived at by

Udayanga (2020) and Ginting (2018) who examined the relationship between the variables and proved that risk-taking has a positive and significant effect of performance. However, the finding differs from that of Rezaei and Ortt (2017) who in their own study found a negative effect of risk-taking on the performance of high-tech SMEs that were used in the study. This difference in result could have arisen as a result of the difference contexts in which the studies were conducted. Emphasis has also been placed on the need for risk-taking to be wisely done in order to avoid plunging an enterprise into uncalculated and avoidable risks.

In addition, the study sought to investigate the significance of the relationship between pro-activeness and private secondary school enrollment in the study area. The result of the test demonstrates that pro-activeness has an insignificant weak negative relationship with private in the study area. Based on the insignificance of the relationship as revealed by the empirical test, the null hypothesis was retained. This decision contradicts the finding of Ball (2019) in a study that sought to establish the relationship between the dimensions of EO and performance in New York State. However, Okandi (2019) has also established a negative effect of pro-activeness on performance of the enterprises in Tanzania.

Further analysis indicated that autonomy has a significant positive relationship with student enrollment of private secondary school in Minna Metropolis. Consequent upon this finding, the null hypothesis was rejected. This decision can be supported with the findings of the study conducted by Kiyabo and Isaga (2020) in Tanzania using SMEs drawn from welding industry. It is also in agreement with the result of the research conducted by Khan *et al.* (2021) in Pakistan. Lastly, the result also indicated a very significant relationship between the two variables.

In sum, from the findings of the current study, three out of the five dimensions of EO examined in this study showed significant positive association with performance of small enterprises in Minna Metropolis. These three dimensions are innovativeness, risk-taking propensity and autonomy. The other two variables – pro-activeness and competitive aggressiveness, showed insignificant negative relationship. EO therefore, from this result can be seen to have an influence on business performance and should therefore be emphasised and encouraged to enhance the growth of small enterprises in the study area.

5.2 Conclusion and Recommendations

Going by the findings made from the inferential analysis as stated in section 5.1, the study concluded that EO has a noticeable relationship with the performance of private secondary schools measured in terms of their student enrollment.

The recommendations made below by the researcher derived from the findings of the study following the test of hypotheses:

i. Owners of school should be more innovative by investing in R&D so as to introduce new programmes in line with modern trend that could increase their share of student enrollment in the area.

ii. Proprietors of private secondary school in Minna Metropolis should improve on their risk management skills by attending relevant workshops, seminars and conferences so they can avail themselves all the benefits while reducing the disadvantages associated with uncalculated risk taking.

iii. Proprietors of private secondary schools in Minna Metropolis should always study modern trends of development in the education sector and be more proactive in their actions.

iv. proprietors should ensure that roles are well distributed among the staff and allow them a reasonable degree of independence in taking decisions.

v. Owners of private secondary schools in the study area should embark on positive competition that has the potential of adding values to their various enterprises.

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Assessing the Role of Corruption on Failure of Entrepreneurial Ventures in Asaba, Delta State, Nigeria

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Abstract

*Despite the role of Entrepreneurship in driving economic growth, many entrepreneurial ventures fail to survive beyond the initial stages. This study focused on the role of corruption on failure of entrepreneurial ventures in Asaba metropolis. The objective of this study is to assess the relationship between corruption and failure of entrepreneurial ventures in Asaba, Delta State. The study employs a survey research design and the sample size of 171 respondents was selected from the population of 300 employees spread across seven (7) selected businesses in Asaba metropolis using the stratified sampling method. Data collected from 150 respondents was analyzed using both descriptive and inferential statistics. Two hypotheses were tested and the findings revealed a significant positive correlation between nepotism and failure of entrepreneurial ventures (r=0.253**, N=150, P<.01) and a significant positive correlation between kickback scheme and failure of entrepreneurial ventures (r=0.375**, N=150, P <.01). Thus, the study concludes that corruption in terms of nepotism and kickback schemes leads to failure of entrepreneurial ventures by limiting talent pool, reducing innovation, causing huge financial losses and making business ventures to engage in unethical decisions that damage their reputation leading to lower productivity. The study recommends that people should be given tasks based on their qualification and competence, formal policies that would curb the practice of kickbacks within an organization should be established and government should establish and enforce strong anti-nepotism laws to prevent unfair hiring practices.*

KEYWORDS: corruption, entrepreneurial ventures, nepotism, kickback schemes, unethical decisions.

1. Introduction

Across the world, entrepreneurial ventures have contributed greatly to national economies. A wide range of studies has indicated the crucial contribution of entrepreneurial SMEs as drivers of economic development (Xiong, 2024). A strong entrepreneurial SME sector significantly contributes to a country's GDP by lowering the concentration of poverty and reducing the level of unemployment (Khan, 2022).

Entrepreneurial Ventures have been regarded globally as a vital source of economic growth and development (Savastano, Samo, Channa & Amendola , 2022).

In Nigeria, EV has contributed greatly in the creation of job opportunities, economic diversification through the reduction of dependence on oil and gas, innovation, wealth creation and social development (Ekong, 2024). In spite of the importance and significance of entrepreneurial ventures and their contribution to economic development, EV are still faced with multiple barriers such as poor management, limited access to fund and lack of governmental support which is restricting their survival and development (Ismail Albalushi, & Naqshbandi, 2022)

Corruption poses a significant challenge to the success and sustainability of entrepreneurial ventures, particularly in developing economies where weak institutions and regulatory frameworks are prevalent (Maupin & Hales, 2021). For instance, issues such as bribery and extortion are widespread (Gibson, 2021). These corrupt practices distort market dynamics, increase operational costs, and create barriers to fair competition, ultimately leading to the failure of many entrepreneurial ventures (Bashir, Abdullah & Ramzan, 2021).

However, Mohammad & Husted (2021) stated that in certain environments, corruption provides opportunities for entrepreneurs to exploit inefficiencies in the market. Jauregui, Heriot & Mitchell (2021) found that corruption positively correlate with the formation of new formal-sector firms and that excessive corruption negatively impact firm formation. Their findings suggest that moderate levels of corruption helps entrepreneurs navigate complex regulations, but too much corruption hinders entrepreneurship (Jauregui & Mitchell, 2021).

In the light of this, significant information vacuum emerges, little is known about the relationship between corruption in terms of nepotism and kickback schemes and failure of entrepreneurial ventures in Asaba metropolis. While existing literature highlights the general relationship between corruption and economic development (Spyromitros & Panagiotidis, 2022, Afonso & de Sá Fortes Leitão Rodrigues, 2022). The specific consequences of corrupt practices such as nepotism and kickback scheme on entrepreneurial ventures have received less attention. The particular complexities of this interaction within Asaba metropolis still need to be fully investigated. By exploring this relationship through empirical research, valuable insights that can inform both academic discourse and practical applications within the field will be provided. Thus, the aim of the study is to assess the role of corruption on failure of entrepreneurial ventures in Asaba, Delta State, Nigeria. The specific objective of the study is to examine the relationship between nepotism and failure of entrepreneurial ventures, to investigate the link between kickback schemes and failure of entrepreneurial ventures in Asaba and determine the combined effect of nepotism and kickback scheme on the failure of Entrepreneurial ventures in Asaba.

2. Literature Review

2.1 Conceptual Framework/Conceptual Review

This study is built on the assumptions conceptualized below

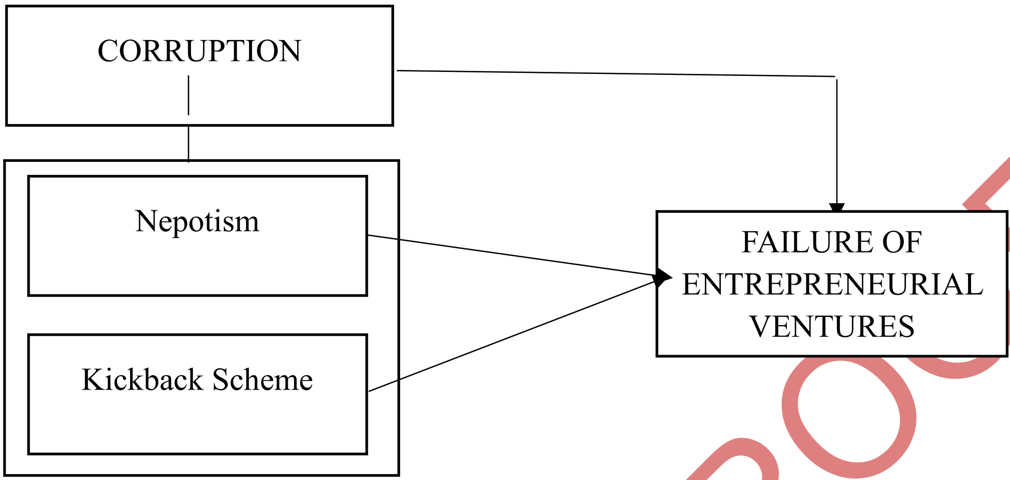

Figure 2.1: Conceptual Framework of Corruption and Failure of Entrepreneurial Ventures
Source: Desk Review, 2025.

2.1.1 Concept of corruption

According to Grasso (2024), corruption is "a dishonest or illegal behavior, especially of people in authority". Corruption can manifest in various forms, including bribery, embezzlement, fraud, and manipulation of regulatory systems, all of which undermine the effectiveness and sustainability of entrepreneurial ventures (Magakwe, 2024). A study by Okoye & Mbanaso (2022), suggest that entrepreneurs in environments characterized by high corruption levels face heightened challenges in business operations, including difficulties in securing financing, unfair competition, and market distortion. Corrupt practices often lead to a lack of trust in business dealings, resulting in diminished investor confidence and a reluctance to engage with businesses that are perceived as compromised by corrupt activities (Alvesson & Spicer, 2021).

In Nigeria, a country where corruption remains a significant challenge in the business environment, corrupt practices has a detrimental effect on entrepreneurial ventures (Ogundele & Akinlabi, 2021). Entrepreneurs in Nigeria often face an environment where bribery, embezzlement, nepotism, fraud and kickback schemes prevail (Kareem, 2024). As a result, their ability to access and manage critical resources is compromised, thus leading the failure of businesses (Kareem, 2024).

However, Carrasco (2021) suggests that in environments with substantial bureaucratic hurdles, corruption can be seen as a necessary tool for entrepreneurs to expedite business operations, particularly when the official channels are excessively slow or unresponsive. In this context, corruption help businesses establish themselves more quickly and achieve a competitive advantage by overcoming regulatory obstacles that might otherwise stifle growth. D'Agostino, Greco &Bianco (2021) further stated that, in some emerging markets, corrupt practices may temporarily improve market efficiency by allowing businesses to bypass time-consuming procedures that could otherwise impede the flow of economic activity. In this sense, corruption enables businesses to respond to market opportunities faster than their competitors, giving them an edge in a rapidly changing business environment (D'Agostino, Greco &Bianco ,2021).

Therefore, emphasis on corruption in terms of nepotism and kickback scheme and the failure of entrepreneurial ventures is further discussed.

2.1.2 Nepotism

Nepotism is the act of granting an advantage, privilege, or position to relatives and friends in an occupation or field regardless of their qualifications (wikipedia). In Nigeria, this practice has been prevalent across various sectors, notably in the public service (Ekumankama, 2022). A report by the National Bureau of Statistics (NBS) revealed that between 2020 and 2023, at least 60% of public sector workers were hired through nepotism, bribery, or both. Specifically, 27% of these candidates admitted to using only bribery, 13% to only nepotism, and 19% to both bribery and nepotism. This indicates a significant deviation from merit-based recruitment, undermining the integrity of public institutions (National Bureau of Statistics. 2024)

According to Osifo-Dawodu, Eze&Olayemi (2021), nepotism restricts the growth of small and medium-sized enterprises (SMEs) by ensuring that business opportunities, resources, and contracts are often reserved for individuals with connections to political elites or influential figures. This dynamic creates a business environment where entrepreneurs without such connections struggle to access essential resources, including financing, permits, and government contracts (Osifo-Dawodu, Eze&Olayemi, 2021).

A study by Akinboade&Odebiyi (2022) elaborates on the role of nepotism in business failures, emphasizing that entrepreneurs who lack political or familial ties often face severe barriers when trying to enter the formal economy. These entrepreneurs are unable to gain the same market access or legitimacy, ultimately causing business ventures to collapse under the weight of an unleveled playing field (Akinboade & Odebiyi, 2022).

In contrast, Zapata-Cantu, Sanguino, Barroso & Nicola-Gavrilă, (2023) stated that leveraging family resources allows entrepreneurs to reduce operational costs, enabling more efficient use of available resources. This strategic approach enhances productivity and competitiveness in the market. In addition, Inakefe, Onyekachi&Uduak, (2024) stated that in Nigeria, where family ties are significant, combining nepotism with individualism can be advantageous. This blend allows for the optimization of individual skills within a familiar context, leading to effective enterprise development (Inakefe, Onyekachi & Uduak, 2024).

2.1.3 Kickback scheme

Kickback scheme which is a term used to describe individuals who receive illicit payments for facilitating deals or awarding contracts is another widespread form of corruption that adversely affects entrepreneurial ventures in Nigeria (Adekunle & Olusa, 2021). Nwachukwu, Eze, &Oloyede, (2021) highlight that kickback schemes are prevalent in both public and private sectors, creating an unfair environment for businesses. Entrepreneurs often face the dilemma of having to engage in corrupt practices themselves to secure deals, permits, or funding (Komba, Shepherd &Wincent, 2024). This distorts the business environment and forces entrepreneurs to focus on managing corrupt relationships rather than growing their businesses.

According to Awolusi, Adewoye & Adesanya, (2022), businesses that practice kickbacks invest less in research and development or innovative solutions. Instead of focusing on improving their products or services, these businesses are often preoccupied with maintaining their corrupt networks. The stagnation in innovation further limits the growth of businesses and contributes to the eventual failure of ventures that cannot keep up with global trends. Moreover, Akinboade & Odebiyi, (2022) noted that kickback schemes exacerbate economic inequality, as only businesses that can afford or are willing to pay these illicit payments will have access to resources.

However, Uwasa (2021) stated that kickbacks schemes facilitates networking opportunities between entrepreneurs and influential individuals or organizations, potentially leading to new business opportunities or partnership. Adeyemi, (2021) also noted that kickback schemes provides entrepreneurs with access to financing or investment opportunities that they might not have otherwise had.

Therefore, Understanding as well as providing proof of the major influence of nepotism and kickback schemes on entrepreneurial ventures in Nigeria is necessary to contextualize the larger significance of this research. It is essential to present quantitative data in order to obtain proper understanding of the significant impact of these factors across different businesses in Nigeria.

2.1.4 Corruption and Entrepreneurial ventures

Corruption, which is the misuse of power for personal or organizational gain, undermines the potential of new businesses and can be a primary contributor to their failure (Fisman & Miguel, 2021). Corruption manifest in various forms, including bribery, nepotism, embezzlement, fraud, and manipulation of regulatory systems, all of which undermine the effectiveness and sustainability of entrepreneurial ventures (Magakwe, 2024). Entrepreneurial ventures are typically characterized by innovation, risk-taking, and the potential for significant economic returns (Shane, 2021). The success or failure of these ventures is influenced by a wide range of factors, including market conditions, access to resources, and institutional support. Corruption acts as a disruptive force in this dynamic by distorting these critical factors and creating a system where the success of an entrepreneurial venture depends less on merit and more on the ability to navigate corrupt systems (Lambsdorff, 2021).Okoye & Mbanaso (2022), suggest that entrepreneurs in environments characterized by high corruption levels face heightened challenges in business operations, including difficulties in securing financing, unfair competition, and market distortion.

Some studies indicate that corruption has positive effects on enterprises performance (Adomako, Ahsan, Amankwah-Amoah, Danso, Kesse&Frimpong, (2021), Devi, Widanaputra, Budiasih, &Rasmini, 2021). These effects are represented in the ease of obtaining investment opportunities, especially when the government is the contractor or submits contracting offers, the enterprise that pays the bribe gets the offer even without competence or legitimacy. Besides, customs clearance procedures or even tax payments, the bribing firm may get big discounts and sometimes exemptions.

In contrast, (Chadee, Roxas & Kouznetsov, 2021) indicate that corruption has negative effects on enterprises performance. These effects are represented in raising the operational cost, creating uncertainties, reducing the level of innovation, engaging in unethical decision making that results in failure of businesses.

2.2 Theoretical Framework

This study is anchored on the Agency theory as it provides a well-grounded explanation and predictions of the likely outcome that corrupt practices will yield on entrepreneurial ventures. Agency theory, initially formulated by Jensen and Meckling (1976), addresses the relationship between principals (owners or shareholders) and agents (managers or employees), emphasizing the potential conflicts of interest that arise when agents act in their own self-interest rather than in the best interest of the principals. This theory is particularly relevant in the context of corrupt practices within entrepreneurial ventures (Solomon, Bendickson, Marvel, McDowell, &Mahto, 2021).

In Nigeria context, agency problem in business ventures is characterized by a gap between the goals of the owners and the actions of the agents (Badejo, Ogege&Oseni, 2024). Corruption exacerbates this problem by allowing agents to exploit their positions for personal gain, undermining the interests of the business owners and stakeholders (Majeed, Ahsan & Gull,2024). It is believed that employees and managers acting as agent engages in corrupt activities by selecting people based on their relationship and not on merit (Hudson,González-Gómez &Claasen, 2022). As such, those persons selected on relationship as against merit misuses and diverts resources meant for business growth and development into personal use (Bhandari, 2023). This results to unethical decision making, lack of innovation, reduced competitiveness and loss of financial resources (Nwachukwu&Ogbu, 2022).

Thus, the agency theory highlights the potential connection between corrupt practices and failure of entrepreneurial ventures as it provides a robust framework for understanding the role played by business managers and employees towards the failure of many business ventures.

2.3 Empirical Review

Diola & Arcadio, (2024) carried out a study to examine the relationships between perceived nepotism, perceived fairness, and employee innovation. This study utilized a quantitative survey approach, collecting data from 434 employees across various organizations. The analysis revealed that the indirect effect of nepotism on innovation, mediated by perceived fairness, was statistically insignificant. Furthermore, the direct effect of nepotism on innovation was significant and negative, indicating that nepotism directly hinders innovation within organization. The study recommends that government should implement and enforce policies that combat nepotism in both public and private sectors.

An investigation by Akinola & Okafor, (2022) on nepotism and the growth of SMEs in Nigeria. The mixed study involved surveys and interviews with 120 small and medium-sized enterprise owners in Nigeria. The study found that nepotism especially in SMEs, does not necessarily result in failure. Rather, it enables business owners to leverage trust and familiarity in decision making processes, which can improve efficiency and stability. The study concluded that in most cases, nepotism fostered a supportive working environment, contributing to the long-term survival of these businesses. The study recommends that the practice of nepotism should not be totally abolished but should be controlled within an organization.

A study by Adeyemi, Uwasa & Adeyemo, (2022) examined the impact of kickback schemes on innovation in small and medium-sized enterprises (SMEs) in Nigeria. The study used a survey research design, collecting data from 300 SME owners/managers through a structured questionnaire. Data was analyzed using the regression analysis. The results showed a significant negative relationship between kickback schemes and innovation, indicating that kickback schemes hinder innovation in SMEs. The study recommends that business managers should implement strict anti-bribery and corruption policies by developing and enforcing policies that clearly define kickbacks and the consequences of engaging in such activities.

3.0 Methodology

3.1 Research Design

The design for this study was survey research design which measures two variables, independent variable and dependent variable. The independent variable is corruption while the dependent variable is failure of entrepreneurial ventures. Corruption was measured by two sub variables (namely; nepotism and kickback scheme).

3.2 Population for the Study

The target population from which sample was drawn for the study consists of all categories of worker (top, middle and low level of management) spread across seven (7) selected businesses(namely Asaba Aluminium company, Annie supermarket, Flight Aluminium Company, Gabbs supermarket, Jemok petroleum ltd, Zenith Hotel and Delight ventures) all in Asaba.

Table 3.1: Population Distribution

Business Ventures	**Top level management**	**Middle level management**	**Low level management**	**Total**
AsabaAluminium company	5	33	16	54
Annie supermarket	3	20	11	34
Flight Aluminium company	4	15	13	32
Gabbs supermarket	3	26	13	42
Jemok Petroleum ltd	3	20	9	32
Zenith Hotel	4	35	18	57
Delight Ventures	4	30	15	49
Total	**26**	**179**	**95**	**300**

Source: Researcher's compilation 2025

3.3 Sample Size and Sampling Procedure

Stratified random sampling method was used, after application of the Yamane formula to select one hundred and seventy one (171) respondents from the population of (300) who are staff of selected seven (7) business ventures. Table 2 shows the sample size distribution.

Table 3.2: Sample size Distribution

Business Ventures	**Proportion of Population**	**Sample Size**
AsabaAluminium company	54/300 x 171	31
Annie supermarket	34/300 x 171	20
Flight Aluminium Company	32/300 x 171	18
Gabs Supermarket	42/300 x 171	24
Jemok Petroleum ltd	32/300 x 171	18

Zenith Hotel	57/300 x 171	32
Delight Venture	49/300 x 171	28
Total		**171**

Source: Researcher's compilation 2025

3.4 Source of data and Research Instrument

This study relies mainly on primary source of data collection that was sources using a well-structured questionnaire. The questionnaire was self-administered on the sample. The questionnaire was divided into three parts. Part A measured the demographic information, Part B measured corruption which has two variables namely nepotism and kickback scheme while Part C of the research instrument measures failure of entrepreneurial ventures. All items are close ended questions coded in five (5) point likert scale. The research instrument was subjected to validity and reliability test before being administered on the respondents

3.5 Reliability of Instrument

A pilot study of test-pre-test was conducted with 5 staff Flight Aluminium Company Asaba, Delta State, to confirm that the question substance, wordings, sequence, and scale range are correct. The pre-test research instrument was used to improve the questionnaire before it is used for data collecting for the first time. Cronbach's alpha value of reliability was used to assess construct reliability. Table 3 shows the Cronbach's alpha value of reliability for each variable.

Table 3.3: Cronbach's alpha value of reliability

Variables	**Acronyms**	**No of Items**	**Cronbach's alpha**
Independent Variables			
nepotism	NP	4	0.699
Kickback scheme	KS	4	0.701
Dependent Variable			
Failure of Entrepreneurial Ventures	FEV	4	0.712

Source: Researcher's compilation 2025

3.6 Method of Data Analyses

The tool used for data analysis was the statistical package for social sciences (SPSS) version 25. The demographic data as well as the responses from the thematic issues was analyzed and presented with frequency counts and simple percentages. Data was analyzed using Pearson's product moment correlation coefficient (PPMCC), correlation analysis and simple linear regression and multiple regression analysis, analysis of variance (ANOVA). All analyses were done using 5% level of significance.

4. Results and Discussion

This section deals with the presentation, analysis and interpretation of data collected for the study. From 171 copies of the questionnaires distributed to participants, 150 copies were successfully collected accounting for 87.72% response rate. The data presentation includes tables 1, 2 and 3 showing personal characteristics of respondents and the distribution of responses to thematic questions, on relationship between Nepotism, kickback scheme and failure of Entrepreneurial ventures in selected business ventures in Asaba metropolis, as gathered from all categories of respondents from the sample of the study population. The returned questionnaires were analyzed as follows.

4.1 Demographic Characteristics

Table 4.1: The Demographic Characteristics of the Respondents

Characteristics	Frequency	Percentage
Sex		
Female	77	51.3
Male	73	48.7
Total	**150**	**100.0**
Age		
20-29	69	46.0
30-39	54	36.0
40-49	17	11.3
50 and above	10	6.7
Total	**150**	**100.0**
Marital status		

Divorced	18	12.0
Married	61	40.7
Separated	14	9.3
Single	57	38.0
Total	**150**	**100.0**
Education		
BSC/HND	81	54.0
OND/NCE	44	29.3
Post Graduate	14	9.3
SSCE	6	4.0
Primary School Certificate	5	3.3
Total	**150**	**100.0**
department		
operation	32	21.3
Human resource	56	37.3
Accountant	31	20.7
Customer care	31	20.7
Total	**150**	**100.0**

Source: Researcher's compilation 2025

From Table 1, it is shown that, 77(51.3%) of the respondents are female while 73(48.7%) are male. As regards age, 69(46.0%) respondents are between ages 20 and 29 years, 54(36.0%) of them are between ages 30-39 years, 17(11.3%) are between 40 - 49 years of age, 10(6.7%) are 50 years and above. On marital status, the Table shows that there are 57(38.0%) singles among the respondents, 61(40.7%) are married, 18(12.0%) are divorced and 14(9.3%) are separated. On qualifications, the Table shows that 81(54.0%) have B.Sc./HND, 44(29.3%) have OND/NCE, 14(9.3%) possessed post graduate certificate, 6(4.0%) have SSCE and 5(3.3%) have Primary School Certificate. The purpose of Table 1 is to ensure that the sample represents the population, thus, reducing sampling bias which may lead to over or under representation.

4.2 Test of Research Hypotheses

Hypothesis One

There is no significant relationship between nepotism and failure of entrepreneurial ventures in Asaba metropolis.

Table 4.2: Relationship between Nepotism and Failure of Entrepreneurial ventures

Variable	Mean	Std. Dev.	N	R	P	Remark
Nepotism Failure of Entrepreneurial ventures	4.360000 4.79833	.3674285 .848012	150	.253**	.001	Sig.

Source: Researcher's compilation 2025

It is shown in Table 2 that there is a significant relationship between nepotism and failure of Entrepreneurial ventures in Asaba metropolis (r = .253**, N= 150, P < .01). Hence, it could be deduced that nepotism has influence on the failure of Entrepreneurial ventures in Asaba.

Hypothesis Two

There is no significant relationship between Kickback scheme and failure of Entrepreneurial ventures in Asaba metropolis

Table 4.3: Relationship between Kickback scheme and failure of Entrepreneurial ventures

Variable	Mean	Std.Dev.	N	R	P	Remark
Kickback scheme Failure of Entrepreneurial ventures	4.1633 4.79833	.48896 .848012	150	.375**	.000	sig

Source: Researcher's compilation 2025

It is shown in Table 3 shows that there is a significant relationship between kickback scheme and failure of Entrepreneurial ventures in Asaba metropolis (r = .375**, N= 150, P < .01). The implication of this is that a 1% change in kickback will result in a 37.5% change in failure of Entrepreneurial venture. Hence, it could be deduced that kickback scheme influences the failure rate of Entrepreneurial ventures in Asaba.

Hypothesis three

There is no significant combined effect of nepotism and kickback scheme on the failure of Entrepreneurial ventures in Asaba metropolis.

Table 4.4: Regression analysis of FEV variables and FAILURE OF Entrepreneurial ventures

Variables	**F- Ratio**	**Sig of P**	**R**	**R^2**	**Adj R^2**	**B**	**t**	**P**
Nepotism	21.937	.009	.474	225	216	.376	-2.771	.042
Kickback scheme						.300	2.005	.019

Source: Researcher's compilation 2025

Table 4 showed that the linear combination of nepotism and kickback scheme on failure of Entrepreneurial ventures in selected business ventures in Asaba metropolis was significant. F = 21.937; R = .474, R^2= .225, Adj. R = .216; P<.01). The followings shows the various relative contributions and level of significance of the independent variables: nepotism (β=.376, P<.05) and kickback scheme (β=.300, P <.05). It can be concluded that all independent variables (nepotism and kickback scheme) will jointly and independently predict failure of Entrepreneurial ventures in selected businesses in Asaba metropolis.

4.3 Results and Discussion

This study investigates the relationship between nepotism, kickback schemes and failure of Entrepreneurial ventures in Asaba metropolis. The result of the first hypothesis shows that there exists a significant relationship between nepotism and failure of entrepreneurial ventures. The findings are in agreement with Osifo-Dawodu, Eze, & Olayemi, (2021) that nepotism restricts the growth of small and medium-sized enterprises (SMEs) by ensuring that business opportunities, resources, and contracts are reserved for individuals with connections to political elites or influential figures. This dynamic creates a business environment with limited talent pool where entrepreneurs without such connections are denied access to essential resources, including financing, permits, and government contracts (Osifo-Dawodu *et al*, 2021). Akinboade & Odebiyi, (2022) also elaborates on the role of nepotism in business failures, emphasizing that entrepreneurs who lack political or familial ties often face severe barriers when trying to enter the formal economy. These entrepreneurs are unable to gain the same market access or legitimacy, ultimately causing business ventures to collapse under the weight of an unleveled playing field and lack of innovation (Akinboade *et al*, 2022).

However, the survival and sustainability of Entrepreneurial ventures cannot be assured if people are not being employed on the basis of merit and competence rather than familiarity. Management of different organizations can creatively solve this problem by ensuring that tasks are assigned to people based on their qualification and competence.

The second hypothesis revealed that there exists a significant relationship between kickback scheme and failure of entrepreneurial venture. The findings are in line with the study by Awolusi, Adewoye, & Adesanya, (2022) that businesses that practice kickbacks invest less in research and development or innovative solutions. Instead of focusing on improving their products or services, these businesses are often preoccupied with maintaining their corrupt networks. The stagnation in innovation further limits the growth of businesses and contributes to the eventual failure of ventures that cannot keep up with global trends. Engaging in kickback schemes compromises the ethical standards of entrepreneurial ventures. This leads them to make decisions that could demoralize employee and cause a toxic culture where unethical behavior is normalized. Apart from legal fines, businesses involved in kickback schemes faces increased operational costs that reduces profitability and divert resources away from legitimate business activities.

The third hypothesis was to determine combined impact of nepotism and kickback scheme on failure of entrepreneurial ventures in Asaba and the result shows that FEV measures has a significant impact on failure of entrepreneurial ventures. This is in line with a study by Ferdousi and Sultana (2022) which revealed that nepotism and kickback scheme within small and medium- sized enterprises leads to poor decision-making, resource mismanagement and inefficient leadership. They further highlighted that when businesses favor family members over qualified individuals, it undermines organizational performance.

5.1 Conclusion and Recommendations

The results of the regression analysis shows that nepotism as a form of corruption has a significant relationship with failure of entrepreneurial ventures. Nepotism negatively impacts entrepreneurial ventures by reducing morale and motivation of employees and limiting the pool of talent which results to lower productivity and lack of innovation.

Kickback scheme also had a significant relationship with failure of entrepreneurial ventures. Engaging in kickback schemes compromises the ethical standards of entrepreneurial ventures thus leading them to make decisions that could demoralize employee and cause a toxic culture where unethical behavior is normalized. Businesses involved in kickback schemes faces increased operational costs that results in financial loss and reduced profitability. It is clear from the vast number of factors identified, reported and through the literature review, that the goal of this study was achieved. Based on the outcome of the findings, the following recommendations are suggested;

i. Considering the steam with which businesses are failing, it is recommended that management should ensure that tasks are assigned to people strictly based on their qualification and competence.

ii. Organizations should ensure that formal policies that would curb the practice of kickbacks within an organization are established.

iii. Government should establish and enforce strong anti-nepotism laws to prevent unfair hiring practices.

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Entrepreneurial Skills Determinants and Entrepreneurial Intention among Male Students of Crescent University, Abeokuta, Ogun State

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Abstract

Many university graduates in Nigeria are working for companies or government, or engaging in online fraud, limiting their entrepreneurial aspirations due to lack of confidence and financial resources. These and other factors led to this study which aims to investigate the determinants of entrepreneurial skills on entrepreneurial intentions among young male students in Crescent University, Abeokuta. The study employs a descriptive survey design in order to elicit data concerning issues that were raised in the course of the study to better understand determinants of entrepreneurial skills on entrepreneurial intentions among young male students. The sample size of 240 male students was selected from population of 600 male (300 and 400 level) students who were actively taking part in the compulsory entrepreneurship courses in their respective departments, using a stratified random sampling procedure. The questionnaire serves as the primary research instrument in this study. Data collected from 233 respondents was analyzed using both descriptive statistics and inferential statistics. Result of the findings reveal a significant positive correlation between all determinants namely creative thinking ($R = 0.322^{**}$, $N = 233$, $p < 0.01$); entrepreneurial leadership ($R = 0.342^{**}$, $N = 233$, $p < 0.01$); need for achievement ($R = 0.402^{**}$, $N = 233$, $p < 0.01$); social skill ($R = 0.313^{**}$, $N = 233$, $p < 0.01$) and entrepreneurial intentions. The study concluded that creative thinking, entrepreneurial leadership need for achievement and social skill are major determinant of entrepreneurial intentions among young male students in Crescent University, Abeokuta. It was recommended that students should encourage being self-confidence in their skills as future entrepreneurs and should not allow their friends to discourage their entrepreneurial intentions.

Keywords: Entrepreneurship, Creativity, Leadership, Social skill, Entrepreneurial intentions.

1] Introduction

Entrepreneurship education is gaining acceptance in institutions of higher learning in many parts of the world. According to Maheshwari *et al* (2019), reasons alluded to the acceptance are that entrepreneurship education prepares students to face a future filled uncertainty, leave room for creativity and collaboration, teach them how to identify problems, help them develop grit and equip them with the right skill sets to apply practical solutions to societal problems, particularly those within their immediate environment. As a result, extant studies have indicated that education or exposure to the tenets and principles of entrepreneurship within a school system is a major determinant of entrepreneurial intentions (Zanabazar and Jigjiddorj, 2020).

Aside education, there are other crucial factors that have been identified as determinants of entrepreneurial intentions. For example, in their study of the determinants of entrepreneurial intentions among young graduates in a South-eastern Nigerian state, Ojiaku *et.al,* 2018) found that two broad categories of determinants exist to explain young people's intentions: the pull factors (independence, autonomy, opportunities exploitation among others) and the push factor (government support, personal attitude, self-efficacy, among others). In addition, Tegegn*et.al,*2016) investigated the factors influencing entrepreneurial intentions in Wolaita Sodo Univeristy in Ethiopia and the findings revealed that parent's educational level as well as locus of control and motivation for achievement significantly impacted entrepreneurial intentions among the sample. Also in Indonesian sample, Wardana *et al,* (2020) found that attitudes and intentions towards entrepreneurial activities were significantly determined by need for achievement, risk perception and locus of control.

Despite numerous studies (Cardella, *et.al*, 2020; Corrêa *et al*., 2021; Moreira *et al.,* 2019; Tegegn*et.al*, 2016; Su *et.al*, 2021; Shabbir, and Kassim, 2021; Shahzad*et.al*, 2021; Maheshwari *et.al*, 2022) indicating the importance of entrepreneurial skills acquisition and intentions towards entrepreneurial activities, there is limited knowledge about how these factors affect young male university graduates in developing countries (Achakpa and Radović-Marković (2018). Young individuals in developing economies are more likely to create their own businesses due to barriers in accessing the formal labor market and the need to escape unemployment and poverty (Maheshwari*et al*, 2022).
However, there are significant gender gaps in start-up activities, and socio-cultural factors may influence young people's decisions and actions. A systematic review of literature between 2010 and 2020 revealed that there is a significant potential for young male entrepreneurship in developing countries, but this direction is seldom investigated (Jaiswal, 2023). Cultural beliefs, rooted in conservative traditional values and customs, may also contribute to the failure of many young graduates to engage in entrepreneurial activities (Maheshwari *et al*, 2022)
Nigeria's economy is characterized by the menace of crime due to youth unemployment, hindering development (Tijani & Shodiya, 2023). Many recent college graduates prefer government or private jobs while some engage in online fraud. Only few pursue entrepreneurship due to lack of confidence and limited capital access (Zwane*et al*, 2021; Jaiswal, 2023).
The importance of building young males entrepreneur is crucial in today's global entrepreneurship landscape. Globally, 30.2 percent of young entrepreneurs expect to hire six or more employees in the next five years, compared to 18.7 percent in 2019. Young entrepreneurship can also provide a competitive advantage in the labor market (Ahmed, *et al*, 2021; Zainol and Al-Mamun, 2018). However, there is limited knowledge on the relationship between creative thinking, entrepreneurial leadership, need for achievement,

and social skill and entrepreneurial intentions to create sustainable businesses. This study aims to fill this gap and explore the factors influencing entrepreneurial intentions of young male students in Crescent University Abeokuta.

2] Literature Review

2.1] Concept of Entrepreneurship

Entrepreneurship is the act of identifying business opportunities, acquiring resources, and taking on risks to make profits (Chukwu *et al*, 2022). It is a process that has contributed to modern civilization's progress, contributing to economic growth, job creation, and social development (Irikefe, 2023).Entrepreneurs manage enterprises, developing innovative solutions to complex issues (Ferreira, 2021).

2.2] Entrepreneurial Skills

Entrepreneurial skills are essential qualities an entrepreneur needs to manage a business effectively. These skills include creativity, innovation, initiative, self-efficacy, strategic planning, problem-solving, leadership, communication, teamwork, and digital communication (Jardim, 2021). Common categories of entrepreneurial skills include personal characteristics, interpersonal skills, critical and creative thinking skills, and practical skills and knowledge (Bagheri, 2017).

2.3] Determinant of Entrepreneurial Skills

2.3.1] Creative thinking

Creativity is a complex concept that involves generating novel solutions and problem-solving (Anggraeny, 2023; Shahzad *et al*., 2021). It is a valuable soft skill for various jobs and is essential in entrepreneurship. Creativity involves identifying opportunities and combining resources in innovative ways. A positive mindset and high self-confidence are essential for successful entrepreneurial activities (Caniëls and Motylska-Kuźma, 2023).

H_{01}: There is no significant relationship between creative thinking and entrepreneurial intentions of young male students in Crescent University Abeokuta.

2.3.2] Entrepreneurial leadership

Entrepreneurial leadership involves organizing groups to achieve common goals through risk-taking, innovation, opportunity recognition, and change management in a dynamic environment (Nguyen, 2020). Entrepreneurial leadership is a significant motivator for recognizing opportunities in organizations and significantly influences individual innovative job behavior (Boris *et al.,* 2021; Ta'Amnha *et al.,* 2023).

H02: There is no significant relationship between entrepreneurial leadership and entrepreneurial intentions of young male students in Crescent University Abeokuta.

2.3.3 Need for Achievement

The process of actualizing sources of inspiration and influencing one's behavior to meet needs and achieve goals is known as motivation (Damayanti, 2023). The need for achievement refers to —one's responsibility for involvement in activities to achieve one's desired outcome. Need for achievement is associated with a positive mood, task interest, and organizational spontaneity (Asmare 2023; Abun, et.al, 2018).

H03: There is no significant relationship between need for achievement and entrepreneurial intentions of young male students in Crescent University Abeokuta.

2.3.4] Social skill

Social skills of an entrepreneur encompass the combination of entrepreneurial opportunity awareness, and political acumen. Developing skills enables businesspeople to identify and seize opportunities, which enable them to be more creative (Irikefe, 2023). Gaining access to the knowledge, influence, and recommendations required for success depends on political acumen (Zwane *et al*, 2021). High acumen allows businesspeople to show a good understanding of society (Khanjanian and Olfati, 2019); this social skill is helpful for successfully securing the crucial resources needed for entrepreneurship in a changing and complicated environment.

H04: There is no significant relationship between social skill and entrepreneurial intentions of young male students in Crescent University Abeokuta.

2.4] Entrepreneurial Intentions

Entrepreneurial intention is a psychological condition that directs focus towards company goals and encourages individuals to start new businesses or infuse new meaning into existing ones (Kong*et al,* 2020). It is a prerequisite for growth of entrepreneurship, but personal traits and environment can hinder it (Kong*et al.,* 2020). Esfandiar *et al*, (2017) suggests that undergraduate students' ambition to start a business is influenced by personal differences and external conditions, with macro-level variables primarily involving socio-cultural traditions and standards, and micro-level variables involving personal qualities and capacity.

Conceptual Framework

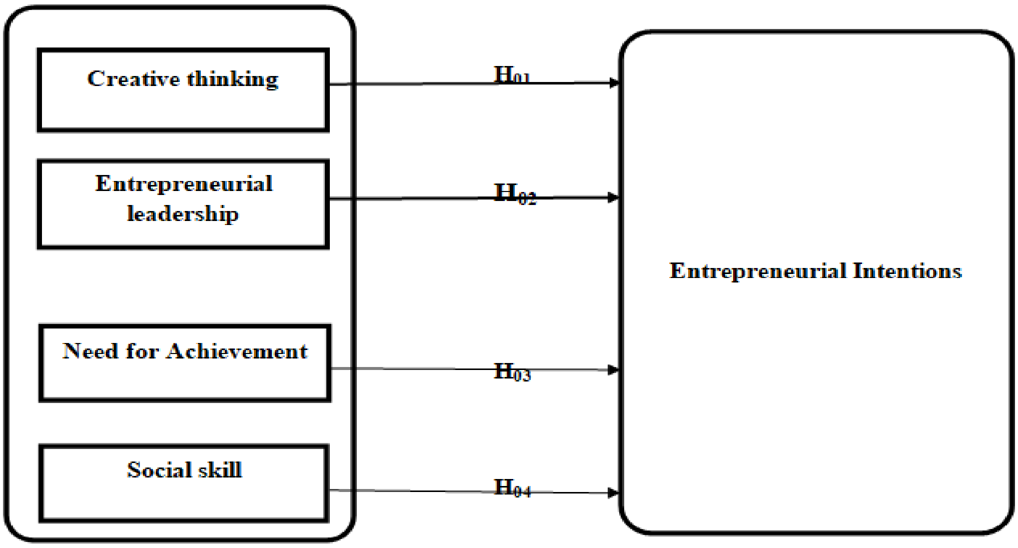

Figure 1: Determinants of Entrepreneurship and Entrepreneurial Intentions

Source: Authors Conceptualization, 2025

2.5] Theoretical Framework

The study anchored on the theory of planned behavior as it is an extension of the theory of reasoned action, which predicts the execution of a behavior using attitude and norms as predicting variables. It aims to explain behavior with partial control, allowing people to choose whether or not to engage in the activity. The theory adds perceived behavioral control, subjective norms, and attitudes toward the activity as independent drivers of intention. Three key beliefs impact these determinants: behavioral beliefs, normative beliefs, and control beliefs. Subjective norms, normative views, and behavioral beliefs all affect how male students feel about entrepreneurship. Negative attitudes are linked to failure, uncertainty, or monetary loss, whereas positive attitudes are linked to independence, creativity, or financial success. Entrepreneurial inclinations are influenced by subjective norms, including peer pressure, family expectations, and social perspectives. Another factor is control beliefs, such as the capacity to manage difficulties. The entrepreneurial drive of male students can be increased by fortifying these elements through instruction, financial assistance, and mentoring.

2.7] Empirical review

Musa, *et al* (2023) looked at Entrepreneurial Intention among University Students in Malaysia. This study involved a total of 260 students at one selected public university. The research adopted a quantitative methodology, utilizing standardized questionnaires that are self-administered to gather data. Inferential statistics was used to analyse the data that had been gathered, incorporating statistical methods such as multiple linear regression and Pearson correlation. The results showed that there was a significant relationship between personal attitudes, subjective norms, perceives behavior control and entrepreneurial intention.

Damayanti (2023) examined the Influence of Need for Achievement and Self Efficacy on Student Entrepreneurship Intention in Ethiopia using descriptive and inferential statistics. The research results of the multiple regression analysis test shows that the need for achievement variable has no significant influence, but the self-efficacy variable shows a significant influence; from the simultaneous multiple regression analysis test results, it can be seen that all variables show a significant influence, between the need for achievement and self-efficacy variables on entrepreneurial intention.

Chukwu *et al* (2022) studied self-efficacy as correlates of entrepreneurial intention of agricultural students in public tertiary institutions in the South-South, Nigeria. The result shows there was significant and positive relationship among the variables. The study suggested that students should be encouraged while in their course of study to involve in creating new ventures and should be encouraged to be entrepreneurial during holidays as it has a lot to contribute to positive attitudes towards entrepreneurship. Self-built experience is requisite for success in entrepreneurship because subjective norms of individuals and their entrepreneurial intentions are affected therein.

Su, *et al* 2021) made systemic review of factors influencing entrepreneurial intention of university students in china: Integrating the perceived university support and theory of planned behavior. The study results revealed that perceived university support significantly affected student attitude toward entrepreneurship, which signaled universities' critical role in establishing entrepreneurial spirit in students. A significant effect on behavioral control was also observed for perceived university support.

3] Methodology

This study uses a descriptive survey design to investigate the determinants of entrepreneurial skills among young male students in a Nigerian university. The population consists of 600 male (300 and 400 level) students who were actively taking part in entrepreneurship courses in their respective departments. The sample determined using Taro Yamane's formular, as shown below, includes 240 undergraduate (300 and 400 level male) students who are actively participating in compulsory entrepreneurship courses. The researcher uses stratified random sampling to select respondents for this study. The study aims to provide insights into the factors influencing entrepreneurial skills and intentions among young male students.
This study used a well-structured questionnaire, developed by the researcher to collect data using a five-point Likert's scoring scale, to seek respondents' opinions on various items. A quantitative method of data analysis was used for this study. The analysis of quantitative data incorporated a descriptive and inferential statistics to describe and compare the relationship and variance among variables of interests to the study. Correlation and Regression were used to ascertain the influence of the identified determinants on students' entrepreneurial skills and intentions.

3.1] Sample Size Determination

$$n = \frac{N}{[1 + N(e)^2]}$$

Where:

n= Sample size
N= Population
e= level of significance (5%)
1= constant

Calculation;

$$n = \frac{600}{[1 + 600(0.05)^2]}$$

$$\frac{600}{[1 + 600(0.0025)\ \ ]}$$

$$\frac{600}{[1 + 1.5]}$$

$$\frac{600}{[2.5]}$$

n = 240

The sample size is 240 male students drawn from both 300 and 400 level. Below is the table 3.1 showing sampling distribution according to the level.

4] Results and Discussion

This section deals with the analysis and interpretation of data collected for the study on the determinants of entrepreneurial skills on entrepreneurial intentions among young male students in Crescent University Abeokuta, as gathered from all categories of respondents from the sample of the study population.

4.1] Test of Hypotheses

Hypothesis One

There is no significant relationship between creative thinking and entrepreneurial intentions of young male students in Crescent University Abeokuta.

Table 3: Correlation analysis of creative thinking and entrepreneurial intentions

Variable	Mean	Std. Dev.	N	R	P	Remark
Creative thinking	4.34100	.373289	233	0.322^{**}	0.001	Significant

Entrepreneurial intentions	4.69750	.320028				

Source: Author's Computation (2025)

The results of the Pearson product moment correlation analysis examining the relationship between creative thinking and entrepreneurial intentions of young male students in Crescent University Abeokuta are presented in Table 3. The findings reveal a significant positive correlation between creative thinking and entrepreneurial intentions (R = 0.322**, N = 233, $p < 0.01$). These findings lead to the rejection of the null hypothesis, which proposed no significant relationship between creative thinking and entrepreneurial intentions, indicating the presence of a meaningful relationship between these variables.

Hypothesis Two

There is no significant relationship between entrepreneurial leadership and entrepreneurial intentions of young male students in Crescent University Abeokuta.

Table 4: Correlation analysis of entrepreneurial leadership and entrepreneurial intentions

Variable	**Mean**	**Std. Dev.**	**N**	**R**	**P**	**Remark**
Entrepreneurial leadership	4.35200	.30327	233	0.342^{**}	0.001	Significant
Entrepreneurial intentions	4.69750	.320028				

Source: Author's Computation (2025)

The results of the Pearson product moment correlation analysis examining the relationship between entrepreneurial leadership and entrepreneurial intentions of young male students in Crescent University Abeokuta are presented in Table 4. The findings reveal a significant positive correlation between entrepreneurial leadership and entrepreneurial intentions (R = 0.342**, N = 233, $p < 0.01$). These findings lead to the rejection of the null hypothesis, which proposed no significant relationship between entrepreneurial leadership and entrepreneurial intentions, indicating the presence of a meaningful relationship between these variables.

Hypothesis Three

There is no significant relationship between need for achievement and entrepreneurial intentions of young male students in Crescent University Abeokuta.

Table 5: Correlation analysis of need for achievement and entrepreneurial intentions

Variable	Mean	Std. Dev.	N	R	P	Remark
Need for achievement	4.45211	.30452	233	0.402**	0.001	Significant
Entrepreneurial intentions	4.69750	.320028				

Source: Author's Computation (2025)

The results of the Pearson product moment correlation analysis examining the relationship between need for achievement and entrepreneurial intentions of young male students in Crescent University Abeokuta are presented in Table 5. The findings reveal a significant positive correlation between need for achievement and entrepreneurial intentions (R = 0.402**, N = 233, $p < 0.01$). These findings lead to the rejection of the null hypothesis, which proposed no significant relationship between need for achievement and entrepreneurial intentions, indicating the presence of a meaningful relationship between these variables.

Hypothesis Four

There is no significant relationship between social skill and entrepreneurial intentions of young male students in Crescent University Abeokuta.

Table 6: Correlation analysis of social skill and entrepreneurial intentions

Variable	Mean	Std. Dev.	N	R	P	Remark
Social skill	4.35201	.30400	233	0.313**	0.001	Significant
Entrepreneurial intentions	4.69750	.320028				

Source: Author's Computation (2025)

The results of the Pearson product moment correlation analysis examining the relationship between social skill and entrepreneurial intentions of young male students in Crescent University Abeokuta are presented in Table 6. The findings reveal a significant positive correlation between social skill and entrepreneurial intentions (R = 0.313**, N = 233, $p < 0.01$). These findings lead to the rejection of the null hypothesis, which proposed no significant relationship between social skill and entrepreneurial intentions, indicating the presence of a meaningful relationship between these variables.

4.2] Discussion of Findings

This present study investigated the determinants of entrepreneurial skills on entrepreneurial intentions among young male students in Crescent University Abeokuta.

Governed by four objectives that generates four research hypotheses with four dimensions of entrepreneurial skills the discussion of result of the finding is as follow

The finding reveals a significant positive correlation between creative thinking and entrepreneurial intentions. The result is in line with Adu *et al,* (2020) who found support for the proposed model, depicting that, with the exception of self-efficacy, other factors such as behavioral control, risk-taking ability and pro-activeness mediate the relationship between entrepreneurial education and entrepreneurial intentions of students and Usman and Zuru (2019) that creative thinking is an important determinant of entrepreneurial intentions among students.

The analysis also shows a significant positive correlation between entrepreneurial leadership and entrepreneurial intentions. With this result, we can conclude that there is significant relationship between entrepreneurial leadership and entrepreneurial intentions among young male undergraduate students in in Crescent University Abeokuta. The result is line with Osobajo *et al.,* (2023) that innovation depends on an entrepreneurial mindset and culture to have a dynamic attitude toward entrepreneurial opportunities and the skills to understand those opportunities. The result also shows a significant positive correlation between need for achievement and entrepreneurial intentions. This is consistent with previous studies like Akolgo *et al,* (2018) who found that need for achievement is significantly higher intensity of entrepreneurial mindset.

The findings further show a significant positive correlation between social skill and entrepreneurial intentions. This is consistent with previous study like Irikefe, (2023) who found that social skill is helpful for successfully securing the crucial resources needed for entrepreneurship in a changing and complicated environment. Overall, the finding of this study in line with Usman and Zuru (2019) who revealed in their review of the determinants of entrepreneurial activities that the elements that impact the phenomenon include social skill, market conditions, financial accessibility, creation and dissemination of knowledge, entrepreneurial capabilities, and entrepreneurial culture. These justified the three key beliefs of TPB (behavioral beliefs, normative beliefs, and control beliefs) that impacts determinants of entrepreneurial inclinations.

5] Conclusion and Recommendations

This study examines the relationship between entrepreneurial skills and entrepreneurial intentions among young male students at Crescent University Abeokuta. The results indicate a strong positive correlation between entrepreneurial leadership, creative thinking, need for achievement, and social skills. The study also found that social skills are critical for securing resources needed for entrepreneurship in a changing environment, while market conditions, financial accessibility, knowledge creation and dissemination, entrepreneurial capabilities, and entrepreneurial culture are among the factors influencing entrepreneurial activities. It was recommended that:

i) There is need to have a coordinated exertion by the university management to upgrade the entrepreneurial intention of male students through creativity.

ii) The university should have a few projects to urge the students to consider their entrepreneurial vocation as another option. This is expected improve their entrepreneurial leadership skill.

iii) Students should encourage self-confidence in their skills as future entrepreneurs and should not allow their friends to discourage their entrepreneurial intentions.

iv) School management should time to time organize entrepreneurial boot camp for youth graduates where they can interact to enhance their social skills

Suggestion for Future Studies

The research suggests a comparative analysis among higher learning institutions for a comprehensive understanding of entrepreneurial intentions. However, the results are limited due to their reliance on Nigerian University data, suggesting future studies should validate results in other contexts and consider other occupations. The study also highlights the need for rigorous cultural norms in studying entrepreneurial skills and intention.

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Entrepreneurial Skills Required by Agricultural Education Students in Tertiary Institutions in Kano State for Optimal Success in Sheep Husbandry Practices

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Abstract

Sheep are among the first animals to have been domesticated by humans. Their history goes back to between 11,000 and 9,000 BCE. Sheep are raised both in villages and towns and by pastoralists in Kano State and other States of Nigeria. This study was designed to identify the entrepreneurial skills required by agricultural education students in tertiary institutions in Kano State for optimal success in sheep husbandry practices. The study used survey research design. Three research questions and three null hypotheses guided the study. The population for the study was 172, comprising 24 Animal Science Technologists and 148 Agricultural Science Lecturers in public tertiary institutions in the State. All the 24 Animal Science Technologists were involved in this study, while 108 Agricultural Science Lecturers were selected as sample size for the study. A questionnaire was used as instrument for data collection, validated by three experts. Pilot study was conducted to determine the reliability of the instrument, a coefficient of 0. 73 was obtained. Mean scores were used to answer the research questions while t-test statistic was used to test the null hypotheses at 0.05 level of significance. The findings of the study revealed that all 34 items identified for feeding, health and production management practices were required as entrepreneurial skills for optimal success in sheep husbandry practices (mean scores > 2.50). Based on the findings, it was recommended that Lecturers in tertiary institution in Kano State should focus on essential skills for sheep husbandry practices in training Agricultural Education students.

Keywords: Entrepreneurship, entrepreneurial skill, agricultural, sheep husbandry

91. Introduction

Agriculture is the oldest industry known to mankind. It is the basic source of food and raw materials for many industries. Agriculture plays an important role in the development of many developing nations; It remains the basic source of livelihood for more than half of the world's population. Hence there is the need to focus on sustainability and increased agricultural productivity (Baridoma & Nlebem, 2022). Despite the benefits derive from agriculture, unemployment is one of the major issues affecting Nigeria's National development. To solve the problems of unemployment, teaching and learning of entrepreneurship skills become paramount interest to all stakeholders. Entrepreneurship skills are set of specific knowledge, abilities, skills, traits, motives, attitudes and values required for the personal development and successful participation of each person in an organization (Khamis & Alhassan, 2020). The inclusion of entrepreneurship skill acquisition in the tertiary institutions' curriculum would bring about sustainable development in vocational agriculture. Agriculture is the science, art and business of cultivating soil, producing crops and rearing livestock for human use. The demand for livestock products is increasing as a result of increased human population and relative growth and income (Azimi *et al.*2022). Sheep are among the major economically important livestock in Nigerian agriculture. Sheep are principally bred as source of income, meat for home consumption, manure, cultural and ceremonial purposes (Azimi *et al.*2022).

According to the opinions developed by Richard (2023) sheep producers ought to have skills and knowledge about sheep so as to improve their sheep management skills, increase their chances of a profitable sheep enterprise or gain employment. The government in her bid to reduce unemployment introduced entrepreneurship in the schools' curriculum. The inclusion of entrepreneurship education in tertiary institutions in Nigeria shows its importance in jobs creation. However, every year thousands of students are turned out into the society searching for jobs where there are no jobs (Aneke & Nwobi, 2024). Therefore, the unemployment rate keeps on increasing each year into the society. It is based on this background that this study was conducted to determine the entrepreneurial skills required by agricultural education students in tertiary institutions in Kano State in sheep husbandry practices for self-employment and self-reliance. The study is guided by the following research questions:

i. What are the entrepreneurial skills required for feeding management practices in sheep husbandry by agricultural education students in tertiary institutions in Kano State?
ii. What are the entrepreneurial skills required for health management practices in sheep husbandry by agricultural education students in tertiary institutions in Kano State?
iii. What are the entrepreneurial skills required for reproduction management practices in sheep husbandry by agricultural education students in tertiary institutions in Kano State?

The study is further guided by the following specific objectives, the achievement of which led to the achievement of the aim of the study.

i. determine the entrepreneurial skills required for feeding management practices in sheep husbandry by agricultural education students in tertiary institutions in Kano State,
ii. determine the entrepreneurial skills required for health management practices in sheep husbandry by agricultural education students in tertiary institutions in Kano State,

iii. determine the entrepreneurial skills required for reproduction management practices in sheep husbandry by agricultural education students in tertiary institutions in Kano State.

2.0 Literature Review

2.1 Conceptual Review

2.1.1 Sheep Fattening: Sheep fattening is described as the feeding of nutrient-rich feed to stimulate rapid growth and fat deposition for targeted carcass growth and quality. Sheep easily adapt to a high intensity production system in feedlots. A sheep fattening program aims to achieve the highest growth rate and carcass yield in the shortest possible time (75-90 days) and to increase production per unit of resource. Sheep fattening has proven to be profitable as it has relatively lower investment costs compared to that of larger ruminants, generate faster economic returns, had reduced associated risks and allows the business to expand rapidly. In sheep fattening, the selection of rams is important to achieve high performance, productivity and profit. The following are knowledge and skills on the criteria to be used when selecting the ram for fatting programme (Wamatu *et al.* 2021).

2.1.1.1. *Health status:* When buying a ram, one should examine the animal carefully, without disturbing it, to observe its behavior. These include restlessness, alertness, aggressiveness, tremors, breathing condition (normal or stressed), and normal movement. A closer examination of the nose (to check for discharge), mouth (to check for bad breath, abnormal salivation, ulcers around the lips, gums, tongue), and eyes (to check for discharge). The skin should be examined for spots or swelling. Only vigilant rams without one of the above-mentioned indications should be purchased for fattening.

2.1.1.2 *Body condition:* Weighing the sheep can reflect the condition of the sheep, but sometimes the body weight does not reflect the condition of the animal, i.e. an animal with a large physique may have a higher body weight with low body reserves than another animal with a small physique but plenty of reserves. Very thin/emaciated and fat/larger rams should be avoided. Rams with average body condition (neither emaciated nor greasy) are preferable, as they respond faster to feeding and achieve better yields within a short time than fat rams, which are already at well fed. Assessing the condition of a sheep can be done simply visually or by touching the body parts in the lumbar area, rib cage and sternum. Very thin and emaciated animals often take a long time to recover.

2.1.1.3 *Breed:* The selection of breed types for fattening is mainly based on the breed available in a particular location. This applies to rural smallholders, small-town, suburban and cooperative sheep fatteners. Many lack knowledge of other breeds of sheep

2.1.1.4 *Age:* There is no uniform age for sheep fattening for small-scale farmers. However, to meet market demand, it is advisable to select sheep for fattening between 6 and 12 months. Very young and older rams are not suitable for fattening, as younger rams use the ingested feed for growth rather than meat accumulation and older bucks have very poor feed efficiency. A sheep's dentition is a good indication of its age.

2.1.1.5 *Colour:* Choose white or two-tone coated sheep. Black coat colour is not preferred by consumers, so profit margins may drop.

2.1.1.6 *Sex:* Males are mostly used for fattening and are preferred for religious purposes. Females are mostly kept for reproduction.

2.1.2 Housing: Most sheep flocks were housed in traditional sheep sheds constructed from lightweight and cost-effective materials, such as wood, wire mesh, and sheet metal. According to research findings of Meziane et al. (2024), approximately 72% of farmers housed lambs with adult sheep. Additionally, over half (52%) sheltered their sheep alongside other farm animals.

2.1.3 Feeding: Sheep feeding practice primarily relied on straw as the main roughage feed (Meziane et al. 2024). Sheep were fed twice daily, once in the morning and once in the evening. During the winter months, their diet consisted of grass, hay, and cereals, while in summer; it primarily comprised hay, cereals, and occasionally grass silage. Watering was generally provided midday, with an average consumption of 2.5 liters per head daily. The average feed allocation was typically 1 kilogram per head per day, depending on the size of the flock.

2.1.4 Health Monitoring and Diagnostic Services: Subclinical disease can be detected by routine examination of live animals, such as in the regular examination of rams before the breeding season, and by post-mortem examination of animals to determine the cause of death. Regular flock observation, examination of dead animals, and flock health records provide information for effective disease monitoring. Records that indicate increased incidence of disease or failure of previously successful treatment and prevention programs should signal the need for an aggressive approach to diagno sis. Early and accurate diagnosis of disease is one of the most effective tools to inform a producer's approach to disease prevention and management (Woiwode, 2021).

2.1.5 Parasite Control: Parasites are a major health concern for many flocks, and the type of parasite(s) vary with the environment. External and internal parasites rely on optimal conditions in their environment for transmission and proliferation. External parasites include flies, lice, mites, keds, and ticks, and affect production because they feed on body tissue such as blood, skin, and fiber. Wounds caused by external para sites result in discomfort and irritation, and parasites can transmit diseases from sick to healthy animals. External parasites can be managed by use of topical insecticides. Internal parasites are of concern in areas that receive significant rainfall. The life cycle of internal parasites in volves the presence of infectious larvae on the forages sheep graze, and the presence of adult parasites in the host animals. Anthelmintics (dewormers) are most effective when used in combination with pasture management strategies (Woiwode, 2021)

2.1.6 Vaccines: Vaccines are available for a number of infectious diseases of sheep and may constitute a major step in prevention. Vaccines stimulate an animal's resis tance to an infectious agent. They work best in healthy animals with adequate nutrition and require sufficient time for the development of a protective response. Vaccines should be used according to the manufacturer's guidelines or as directed by a veterinarian (Woiwode, 2021).

2.1.7 Hoof Trimming: Routine hoof trimming is not always necessary (Woiwode, 2021). However, when sheep are maintained for long periods under conditions in which the hoof does not receive sufficient wear, trimming may be required to prevent lameness and to improve animal comfort.

2.1.8 Giving injections: Sheep usually receive injected drugs subcutaneously (under the skin), but some injections may be given intramuscularly (into the muscle). Care should be taken to ensure injections are administered in the correct place, do not harm the animal or the operator, and do not cause adverse reactions or abscesses (Lloyd &Playford, 2022).

2.1.9 Horn trimming: Horn trimming is the removal of the hard tip of rams' horns. If done correctly, this should not cause distress or injury to the ram, as the cut area does not contain nerves or blood vessels. Rams' horns may need to be trimmed to prevent ingrown horns damaging the face and eyes, to prevent injury to other rams and handlers, to help prevent flystrike, to make rams easier to load and transport, and to stop rams catching their horns in fences, yards or trees (Lloyd & Playford, 2022). Horns are best trimmed at hogget age (before 12 months of age

2.1.10 Castrating: Lambs should be castrated at 2–8 weeks of age, when they have smaller testicles and scrotums. This means that the lambs have less sensitive tissue to be removed, resulting in smaller wounds and faster healing. Younger lambs are easier and safer to handle, meaning castration can be done faster and with less stress for lamb and operator. Castrating lambs older than 12 weeks of age is not advisable (Lloyd & Playford, 2022). If the lambs are older than 12 weeks, castration may coincide with the onset of puberty, increasing the risk of complications.

2.2 Theoretical Review

The theoretical framework of this study is based on the 'Production Theory.' The origin of the production theory can be traced back to the eighteenth century. Authors such as Adam Smith, David Ricardo and Thomas Malthus suggested the idea of production in their works (Endurance and Nathan, 2021). Production theory can be used to demonstrate how an economy or sectors of an economy can combine inputs or factors to produce outputs. Production theory explains the relationship between factors of production and output. It emphasizes that when factors of production are combined and put in some transformation process, the result will be output. The theory of production examines the connection between inputs and outputs in the production process. It investigates how businesses combine resources like labour, capital, and technology to effectively generate goods and services. The conversion of inputs into outputs is referred to as production in economics. The raw materials or other productive resources utilised to create output, or finished goods, are referred to as inputs (Lokesh, 2022). A country can hardly grow and sustain itself without production because it is only through the production process that output can grow or increase.

In recognition of the fact that a country can hardly grow and sustain itself without productive capacity, successive governments in Nigeria from independence have continuously endeavoured to boost the country's productive capacity across the various sectors of the economy. Specifically, efforts have to be made to boost production in the agricultural sectors. In fact, agriculture was the leading sector of the Nigerian economy back then as the sector contributed some 65 percent of Nigeria's GDP, 70 per cent of her aggregate exports and over 70 percent of employment for the population (Endurance and Nathan, 2021). In addition, agricultural production from peasant farmers alone was enough to feed the entire population. The government then saw agriculture as the country's major revenue earner and focused on increasing the exportation of agricultural products to industrialized countries in order to raise the required fund for building infrastructure needed for long term development of the country There is need to focus attention on boosting production in agricultural sectors. The nagging issues that have crippled the sector's growth over the years despite much money allocated to the sector must be proactively tackled. Prominent among such issues are the difficulty experienced by peasant farmers in accessing modern farm inputs (Endurance and Nathan, 2021). In order to improve farm productivity and standard of living of farmers and to ensure food security, there is need to identify agricultural skills required by farmers for optimal success in various agricultural production practices.

2.3 Empirical Review

Anyanwu *et al.* (2020) investigated the current state of sheep and goat farming amongst households in Imo State South Eastern Nigeria. A total of 150 structured questionnaires were distributed to farmers randomly selected from three Local Government Areas (LGAs) in Imo State namely, Oru West, Ahiazu Mbaise and Ezinihitte Mbaise to determine the socio-economic characteristics, production systems, breeding and reproduction, constraints and strategies for economic improvement in a focus group interview. The results revealed significant decline in sheep and goat farming amongst the households across four generations within the households interviewed. Lack of interest due to poor policy framework, low productivity of existing breeds, difficulty in feed supply and high cost of breeding stock was identified as constraints of sheep and goat production in the areas. It was also observed that older people were more directly involved in sheep and goat farming than youths. Result of the study showed that 59.6% of farmers were females, and 31-50% of the farmers were between the ages of 31 and 50 years. Breeding was mostly observed to be uncontrolled (51.7%). The most important diseases within these areas were worms, ecto-parasites and peste des petits ruminants (PPR). It was recommended that base on the findings of the study that appropriate measures should be ensured by the government to motivate the youths to participate in the activities of sheep and goat production.

Nyam *et al.* (2022) conducted a study aimed to determine the factor influencing the competitiveness of smallholder sheep farmers' and constraints faced by sheep farmers in South Africa. A farm-level cross-sectional data of 217 smallholder livestock farmers in South Africa were used to identify the factors influencing the competitiveness of smallholder sheep farmers in South Africa. The Porter's Diamond Model Framework was used to measure the competitiveness of sheep production in the study areas and principal component analysis was applied to assess the constraints faced by sheep farmers. The study results found that smallholder sheep farmers in the study area are faced with numerous production constraints, which inhibit their productivity and competitiveness. The most severe constraints include marketing, stock theft, lack of capital, diseases and parasite, and high feed cost. The study suggests that smallholder sheep farmers in the study areas can be competitive and experience growth through the creation of agribusiness enabling environments by promoting policies and strategies that will boost investments in sheep production across the value chain.

Olorunfemi *et al.* (2023) examined the determinants of technologies adoption among small scale sheep and goat farmers in Kogi State, Nigeria. The study employed the use of questionnaires to elicit information from respondents. Data collected for the study was obtained from 240 respondents. Descriptive statistics and probit regression analysis were used to analyses the data. Results from the analysis showed a mean age of 48 years old for sheep farmers and 44 years old for goat farmers. The farmers acquired an average of 8 and 10 years of formal education with a mean of 12 and 11 years of farming experience, among sheep and goat farmers respectively. Most sheep farmers adopted supplementary feeding (26.7%), detection and isolation of sick animals (55%) while goat farmers adopted de-thickening (65%), supplementary feeding (45%), detection and isolation of sick animals (30%) respectively. Extension contacts and cooperative membership significantly influenced the adoption of improved sheep and goat production while herd size significantly influenced the adoption of improved goat production. It was recommended that extension service should be well funded considering its significance in determining adoption. Also, livestock farmers should be encouraged to form cooperative societies to ease their access to credit.

Mesele and Hadgu (2024) conducted a study titled 'African sheep review: productivity and reproductive attributes indication'. The metadata for the review was collected through systematic approach. The reviewed finding showed that Wollo (6.1 months), Begait (11.34) and Afar (12.08) sheep breeds were the three first ranked breed type on age at first lambing while the shortest lambing interval (months) 6.60, 6.67 and 7.30 were found, respectively for Gumuz, Begait and Adilo sheep breeds. For litter size (number) Awassi X Wollo (2.08), Arsi-Bale (1.70) and Bonaga (1.36) performed better. The three larger birth weights (kg) of lamb were reported respectively as 3.90 3.10 and 3.10 for Namaqua Afrikaner, Bepedi and Damara sheep breeds. Red massai (15.00 kg), Damara (14.10 kg) and Awassi X wollo (13.80 kg) sheep breeds had the top three larger lamb weanig weights. Regarding to pre-weaning mortality rate, Aris-Bale (13.9%), Black Head Somolia (18.3%) and Menz (19.2%) had found the lowest one. In general, the results showed that the productive and reproductive performance of African sheep breeds is low; to improve it interferences on management activities are indispensable. The author recommended that breeding strategies, feeding, health caring, husbandry, and other management approaches should be improved so that the sheep producers can be benefited.

3.0 Methodology

The study was designed to identify the entrepreneurial skills required by agricultural education students in tertiary institutions in Kano State for optimal success in sheep husbandry practices. The study made use of survey research design. Three research questions and three null hypotheses guided the study. The population for the study was 172, comprising of 24 Animal Science Technologists and 148 Agricultural Science Lecturers in public tertiary institutions offering Agricultural Education Programme in the State. All the 24 Animal Science Technologists were involved in this study, while 108 Agricultural Science Lecturers were selected as sample size for the study using proportionate random sampling technique. A questionnaire titled Entrepreneurial Skills Required in Sheep Husbandry Practices (ESRSHP) adapted from research work of Richard (2023) was used as instrument for data collection. The questionnaire was developed on four rating scale; strongly agree, agree, disagree, and strongly disagree with corresponding values of 4,3,2, and 1 respectively and validated by three experts and also subjected for pilot study. Pearson Product Moment Correlation was used to determine the reliability of the instrument in which a coefficient of 0. 73 was obtained. 132 copies of the questionnaire were distributed to the respondents with help of four research assistants, the completed questionnaires were collected back on the spot. All the copies of the questionnaire distributed were successfully returned. Mean and standard deviations were used to answer the research questions. In answering the research questions, any item with mean score of 2.50 and above was considered while any item with mean score of les than 2.50, was considered “Not required.

4.0 Results and Discussion

4.1 Results

Research Question one: What are the entrepreneurial skills required for feeding management practices in sheep husbandry by agricultural education students in tertiary institutions in Kano State?

Table 1: Mean Ratings of Respondents on the Entrepreneurial Skills Required for Feeding Management Practices in Sheep Husbandry by Agricultural Education Students in Tertiary Institutions in Kano State, (n = 132).

S/N	Entrepreneurial Skills	$\bar{X}$	SD	Decision
1.	Become familiar with types of feeds and their nutrient values.	3.33	0.69	Required
2.	Recognize common nutritional disorders of sheep.	2.99	0.89	Required
3.	Know how to efficiently feed sheep for optimum performance.	3.01	0.79	Required
4.	Become familiar with a balance feed ration for feeder lambs.	2.97	0.74	Required
5.	Become familiar with a balance feed ration for a pregnant ewe.	3.00	0.81	Required
6.	Know how to train a lamb to drink from a bottle (when applicable).	2.79	0.70	Required

7.	Know basic feed composting techniques.	3.45	0.77	Required
8.	Become familiar with proper grain need for additional feed.	2.98	0.93	Required
9.	Become familiar with proper hay need for feed/additional feed.	3.11	0.95	Required
10.	Be able to evaluate a pasture for forage quantity and quality	2.88	0.71	Required

$\bar{x}$= mean, SD = Standard deviation, R = Required, n = number of respondents

Data presented in Table 1 reveal that the mean ratings of respondents for all the 10 items range from 2.79 to 3.45 are above 2.50 on 4-point rating scale (mean > 2.50). This implies that the respondents agreed with all the items as the entrepreneurial skills required for feeding management practices in sheep husbandry by agricultural education students in tertiary institutions in Kano State. The standard deviations for the 10 items that range from 0.69 to 0.95 shows that the responses of respondents were closed to one another.

Research Questions two: What are the entrepreneurial skills required for heath management practices in sheep husbandry by agricultural education students in tertiary institutions in Kano State?

Table 2: Mean Ratings of Respondents on the Entrepreneurial Skills Required for Heath Management Practices in Sheep Husbandry by Agricultural Education Students in Tertiary Institutions in Kano State, (N= 132).

S/N	Entrepreneurial Skills	$\bar{X}$	SD	Decision
1.	Recognize a normal temperature of healthy sheep.	2.99	0.90	Required
2.	Know how to recognize a sheep that is sick.	3.55	0.75	Required
3.	Know how to take rectal temperature of sheep.	2.92	0.97	Required
4.	Know how to correctly give an intramuscular injection.	3.66	0.71	Required
5.	Know how to administer an oral de-wormer.	3.77	0.88	Required
6.	Know how to properly trim hooves.	2.78	0.70	Required
7.	Become familiar with common sheep diseases in your area.	2.88	0.74	Required
8.	Restrain an animal without stressful treatments.	2.87	0.86	Required

9.	Recognize plants poisonous to sheep in your area.	2.78	0.58	Required
10.	Know how to trim the horns of adult rams.	2.94	0.81	Required
11.	Know how to pare sheep's feet.	2.68	0.77	Required
12.	Know how to castrate male lambs.	3.00	0.89	Required
13.	Know how to correctly give subcutaneously injection.	3.62	0.72	Required

$\bar{x}$= mean, SD = Standard deviation, R = Required, n = number of respondents

Data presented in Table 2 reveal that the mean ratings of respondents for all the 13 items range from 2.68 to 3.66 are above 2.50 on 4-point rating scale (mean > 2.50). This implies that the respondents agreed with all the items as the entrepreneurial skills required for health management practices in sheep husbandry by agricultural education students in tertiary institutions in Kano State. Standard deviations for the 13 items range from 0.58 to 0.97 indicated that the respondents were closed to one another in their opinions.

Research Question three: What are the entrepreneurial skills required for reproduction management practices in sheep husbandry by agricultural education students in tertiary institutions in Kano State?

Table 3. **Mean Ratings of Respondents on the Entrepreneurial Skills Required for Reproduction Management Practices in Sheep Husbandry by Agricultural Education Students in Tertiary Institutions in Kano State, (N= 132).**

S/N	Entrepreneurial Skills	$\bar{X}$	SD	Decision
1.	Recognize when an ewe is about to give birth.	3.33	0.78	Required
2.	Recognize a normal birth.	3.56	0.57	Required
3.	Recognize abnormal birthing (dystocia).	3.00	0.99	Required
4.	Know how to disinfect newborn's naval cord.	2.97	0.87	Required
5.	Be able to recognize and treat a retained placenta.	3.02	0.67	Required
6.	Know how to perform basic first aid on a sheep/lamb.	3.65	0.90	Required
7.	Know how to handle a newborn lamb safely.	3.77	0.89	Required
8.	Calculate/estimate time of lambing from breeding date.	2.87	0.94	Required

9.	Become familiar with reproductive tract diseases common. to sheep, how they are spread and how they can be prevented	3.45	0.72	Required
10.	How to protect yourself and workers from zoonotic disease.	3.07	0.87	Required
11.	Develop a working relationship with a local veterinarian.	3.05	0.68	Required

$\bar{x}$= mean, SD = Standard deviation, R = Required, n = number of respondents

Data presented in Table 3 reveal that the mean ratings of respondents for all the 11 items range from 2.87 to 3.65 are above 2.50 on 4-point rating scale (mean > 2.50). This implies that the respondents agreed with all the items as the entrepreneurial skills required for reproduction management practices in sheep husbandry by agricultural education students in tertiary institutions in Kano State. The standard deviation ranged from 0.57 to 0.99 indicates that the respondents were not too far from the mean and from the opinion of one another in their responses.

4.2 Discussion of Findings

The findings of the research question one in Table 1 revealed that the entrepreneurial skills required for feeding management practices in sheep husbandry by agricultural education students in tertiary institutions in Kano State are; ability to recognize common nutritional disorders of sheep, know how to efficiently feed sheep for optimum performance, become familiar with types of feeds and their nutrient values, know basic feed composting techniques, be able to evaluate a pasture for forage quantity and quality, become familiar with proper hay need for feed/additional feed, become familiar with proper grain need for additional feed, know how to train a lamb to drink from a bottle (when applicable), become familiar with a balance feed ration for a pregnant ewe and become familiar with a balance feed ration for feeder lambs. This is because the mean scores of the items are greater than 2.50 (mean > 2.05). These findings are in line with that of Baridoma and Nlebem (2022) revealed that agricultural education students should acquire skills in managing available grazing land and skills in planting nutritive grasses for feeding management practices.

The findings of the research question two in Table 3 showed that the entrepreneurial skills required for health management practices in sheep husbandry by agricultural education students in tertiary institutions in Kano State are; recognize plants poisonous to sheep in your area, know how to recognize a sheep that is sick, become familiar with common sheep diseases in your area, restrain an animal without stressful treatments, recognize a normal temperature of healthy sheep, know how to take rectal temperature of sheep, know how to administer an oral de-wormer, know how to correctly give an intramuscular (IM) injection, know how to correctly give subcutaneously injection, know how to castrate male lambs, know how to properly trim hooves, know how to trim the horns of adult rams and know how to pare sheep's feet. This is because the mean scores of the items are greater than 2.50 (mean > 2.05). These findings are in agreement with that of Baridoma and Nlebem (2022) who revealed that skills in administering drugs and skills in caring for the pregnant animal are needed for enterprise productivity and profitability as well as individual prosperity. Woiwode (2021) also pointed out that appropriate use of animal drugs and vaccines is part of skills for maintaining animal well-being in a well-designed, health management program. This involves monitoring flock health, treatment, and preventing diseases in the flock. The author further suggested that shearing should be done about one month prior to lambing. Amadi. and Raji (2021) also reported that skill for pest control is among the skills in the agricultural education program that learners could acquire during the course of the program.

The findings of the research question three in Table 5 indicated that the entrepreneurial skills required for reproduction management practices in sheep husbandry by agricultural education students in tertiary institutions in Kano State are; know how to calculate/estimate time of lambing from breeding date, become familiar with reproductive tract diseases common to sheep, how the diseases spread and how they can be prevented, know how to perform basic first aid on a sheep/lamb, ability to recognize when an ewe is about to give birth, recognize a normal birth, recognize abnormal birthing (dystocia), be able to recognize and treat a retained placenta, know how to disinfect newborn's naval cord. know how to handle a newborn lamb safely, know how to protect yourself and your workers from zoonotic disease and develop a working relationship with a local veterinarian. This is because the mean scores of the items are greater than 2.50 (mean > 2.05). These findings ere in line with Woiwode (2021) who revealed that under most conditions, water should always be available and in order to avoid digestive upset, changes in diet should be made gradually to allow rumen microorganisms to adequately adapt to the change. Use feeding and watering equipment designs that will avoid injury and contamination to the animals.

5.0 Conclusion and Recommendations
5.1 Conclusion
The findings of this study showed that all the 34 identified skills in this study were required by agricultural education students in tertiary institutions in Kano State for optimal success in sheep husbandry practices. Hence Lecturers in tertiary institution in Kano State are required to make use of the skills in training their students to enable the students acquire the entrepreneurial skills required in order to make them self-employed after graduation.
5.2 Recommendations
Based on the findings of the study, the following recommendations were made;

1. Lecturers for Agricultural Education Programme in tertiary institution in Kano State should focus on essential skills required for sheep husbandry in teaching process that would help develop their students to become entrepreneurs.

2. Curriculum designers for Agricultural Education Programme in tertiary institution should consider the identified skill in developing the curriculum for training students to ensure that the students clearly understand entrepreneurial skills during their study, thus, making them active to exhibit the skills for the future.

3. Skill acquisition centres in Kano State should package the identified entrepreneurial skills for sheep husbandry into a programme and be used in training youths to make them self-reliance.

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Entrepreneurial Competencies and Performance of Table Water Firms in Minna Metropolis, Niger State, Nigeria

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Abstract
The establishment of table water production firms in Minna Metropolis has been on the increase following NAFDAC's certification. However, a large number of these firms collapse within the first two years of operation due to poor performance. The competencies of the firms' owners and managers are believed to play a crucial role in enhancing firm performance (Bikefe & Daniel, 2022). Therefore, this study examines the effect of entrepreneurial competencies on the performance of table water firms in Minna Metropolis, Niger State. A quantitative research design was adopted, with a structured questionnaire administered to 131 table water firm owners/managers selected through simple random sampling. A total of 119 fully filled questionnaires were analyzed using descriptive and inferential statistics. Multiple linear regression analysis revealed that opportunity and conceptual competencies have a positive and significant effect with firm performance, accounting for 20.2% of variations in firm performance ($F=9.689$, $p<0.001$). However, relationship competency showed a positive but insignificant effect on firm performance. The findings suggest that table water firm owners/managers should prioritize developing opportunity and conceptual competencies to enhance firm performance. Additionally, they should focus on improving relationship competencies by interacting with others, maintaining personal networks, and negotiating for better future performance. The study recommends that owners/managers attend entrepreneurship training to avail themselves of available opportunities and gain a competitive edge over competitors.

Key words: Entrepreneurial, competencies, performance, table-water, owner

1.0 Introduction

The table water industry in Nigeria has experienced rapid growth in recent years, driven by increasing demand for safe and clean drinking water (Adekunle & Dakare, 2020). The establishment of table water production firms are on the increase by NAFDAC's certification, large number of these firms are seen to collapsed within the first two years of commencement, however the competencies of the firm's owners and managers is believed to play a crucial role in enhancing firm performance (Bikefe & Daniel, 2022). This is because human body requires a constant supply of water, and table water is deemed ideally secure and safely to quench such thirst (Nsiah-Asamoah & Buxton, 2021). Nigeria has seen a considerable surge in the growth of table water production, with the registration of more than 3,000 factories every year; Even with this surge in growth, numerous businesses fail within the initial two to five years of operation(dayoadetiloye.com, 2019). However, the performance of the table water firms in Minna metropolis has been inconsistent, within the metropolis where some firms will not be complying with quality standards in the management of resource viability as well as market trends (Adekunle & Omoregbe, 2022).

Firm performance is determined by the interaction of various internal and external organizational activities, which collectively influence the firm's overall effectiveness (Alalawi, 2020; Umrani et al., 2022; Akomea, 2023). Moreover, the competencies of the firm's owners and managers are also believed to play a crucial role in enhancing firm performance (Bikefe & Daniel, 2022).

Entrepreneurial competencies remain paramount in equipping organizations to successfully achieve outstanding performance (Mokbel Al Koliby et al., 2024). Thus, the strength of the entrepreneurial competencies of the firm owners/managers has a propensity to positively impact the attainment of the firm objectives, notably, performance and growth (Pulka et al., 2021). In this context, entrepreneurial competencies, entailing the skills, knowledge, and abilities necessary to start, manage, and expand a business successfully (Rehman et al., 2023), substantively impact table water firms' performance. Despite evidence that entrepreneurial competencies form a core component of success by firms (Kanaan-Jebna, 2022). Earlier investigations show that the high failure of firms can primarily be attributed to weakness in areas such as financial management, lack of competencies required for the business (Ede, 2021; Olujide, 2022).

Besides, the frequent partial or total closure of table water companies even during favorable business conditions proves that most firm owners/managers do not have the required competencies. In Nigeria as well, empirical research about the entrepreneurial competencies and performance of table water firms is very scanty. Also, the effect of entrepreneurial competencies on firm performance is understudied. The purpose of this study is to address the research gap and enrich the existing literature by examining the effect of entrepreneurial competencies on the performance of table water firms in Minna Metropolis, Niger State, Nigeria.

2.0 Literature Review

2.1 Concept of Entrepreneurial Competencies

Competencies are connected with the willingness of an entrepreneur to take risks along with his/her overall success in business (González-López, et al., 2021; Sakib, et al., 2022). Entrepreneurial competencies were significant for business organizations to be able to optimize performance and maintain a competitive edge, innovation, and growth as well as sustainability and projected success (Sakib et al., 2022; Alkhodary, 2023).
Khan et al. (2022) defined entrepreneurial competence as an amalgamation of motivations, inherent and acquired characteristics, as well as specific personal traits, skills, and knowledge applied by owners/managers to consistently effect management

and development for the optimal performance of their organizations. According to Ida-Ketut & Partiwi-Dwi (2021), entrepreneurial competencies are the vital traits, agility, skills, and pieces of knowledge that entrepreneurs must have if they want to survive in business. Pratikto et al., (2023) related the entrepreneurial competence of a business owner/manager to be able to deal with challenges through a supportive environment. As defined by Agustina (2021), entrepreneurial competencies refer to high-order personal features, including personality traits, knowledge, and skills, which facilitate successful task execution among business owners and managers. Similarly, (Umar & Iorpuu, 2024) opined entrepreneurial competencies as ability to recognizing opportunities, capitalizing on them, ensuring survival, creating employment, and contributing to economic growth.

2.1.1 Domains of Entrepreneurial Competencies

Previous studies (Manet al., 2002; Khanam & Sakib, 2020; Ibidunni et al., 2021; Kovid, et al., 2021; Kaigama, 2023; Aftabet al., 2024) have identified six key entrepreneurial competencies namely, Opportunity, relationship, commitment, organizing, conceptual and strategic competencies. This study concentrates on three of these competencies: opportunity competency, relationship competency, and conceptual competency.

Table 1. Domains of entrepreneurial competencies:

Entrepreneurial Competencies	Behavioural focus	Preliminary Elements
Opportunity Competencies	Deals with scanning and ability to make tangible use of available opportunities.	Opportunity recognition Opportunity seeking, development
Relationship Competencies	Competencies related to connecting with one another.	Communication, Relationship building, Networking
Conceptual Competencies	Deals with different conceptual abilities which are reflected in the behaviours of the entrepreneur	Analyzing, Problem solving and decision making, Innovating, Risk taking

Source: adapted and modified

2.1.2 Relationship between Opportunity, Relationship, and Conceptual Competencies and Firm Performance

i. Opportunity Competency

Refers to the ability of a firm's owner/manager to sense, search for, discover, exploit, and evaluate profitable market opportunities through various means. These are entrepreneurs who possess ample opportunity recognition skills to identify market trends, innovate ahead of those trends, and strategically position their business for competitive advantages (Hanaysha, et al., 2024; Egbetade et al., 2024; Ercantan et al., 2024).What sets entrepreneurs apart is their unique ability to identify opportunities amidst difficulty, transforming challenges into prospects for growth and innovation (Shino et al, 2024), research in developing economies showed that entrepreneurs who actively seek opportunities in rapidly changing markets tend to outperform their counterparts (Aftab et al, 2024). Studies have shown that opportunity competency does significantly impact the growth and profitability of firms, as it is a means for gaining advantage over existing competitors with intention of presenting market gaps (Ahmad et al, 2021).

ii. Relationship Competencies

This competency is defined as the skills of networking, managing customer relationships, and building partnerships for business purposes acquired by the entrepreneur (Chisam et al, 2022; Edmund, 2024). Managing relationships strongly encourages cooperation, access to resources, and customer loyalty which are all determinants of better performance (Al Koliby et al, 2024). According to an investigation that studied small enterprises in developing markets, those entrepreneurs with good relational skills managed to legitimately access funding, negotiate better contracts, and widen their market frontiers (Chikweche & Bressan, 2021; Ibidunni et al, 2021). This strongly makes it easy to conclude that relationship competency provides immense relevance to the survival and success of a firm (Idris & Abubakar 2020; Kornelius 2020).

iii. Conceptual Competencies

This competency connotes contingent capabilities portrayed in firm owner or manager behavior relating to planning, analysis, problem-solving, perception, creativity, innovation and integration of a mixture of complex business variables (Foss et al, 2021; González-López et al., 2021). High conceptual skill owners can foresee risks, adapt to changing markets, and formulate business alternatives (Alloush & Al-Haddad, 2022). Empirical studies shows that conceptual competency positively correlates with innovation performance, thereby offering companies the ability to operate in an uncertain environment and to create sustainable competitive advantages leading to firm success (Sarwar et al., 2024).

2.2 Concept of Firm Performance

Firm performance is a vital issue that has been examined greatly across disciplines (Otto,et al., 2020; Akpa,et al., 2021). Different definitions are given about firm performance depending on the background and framework under consideration (Anwar and Abdullah, 2021; Adula,et al., 2022). Its effect on boosting a country's economy, alleviating essential social problems, and fighting unemployment has lately attracted much attention from every researcher and scholar alike (Tanchangya,et al., 2024). Looking at numerous studies from countries worldwide, whether developed or developing, the stress on the subject is quite apparent (Puni & Anlesinya, 2020; Khatib & Nour, 2021). Performance is widely regarded as the benchmark for measuring firms' activities over a specified time (Charles & Ochieng, 2023; Bui and Krajcsák, 2024).

According to Zona,et al. (2018), firm performance is the effect of a combination of factors producing projected results. Csiki,et al. (2019) affirmed that firm performance is an output that augurs the firm's ability to connect, integrate, and use both internal and external resources under appropriate measure and timing. Similarly, Wardani & Eliyana

(2020) explain performance as the sum total outcome related to job completion and serves as a reflection of a firm's achievement in attaining and satisfying its goals.

2.2.1 Evaluation of Firm Performance

Evaluation of firm performance is a critical aspect of business research, as it enables organizations to assess their progress, identify areas for improvement, and make informed strategic decisions. According to Kornelius,*et al*. (2020), firm performance can be evaluated using various metrics, including financial performance, market performance, and organizational performance. Firm performance can be evaluated using various metrics, including:

a. Financial Metrics: return on assets (ROA), return on equity (ROE), earnings per share (EPS), revenue growth, profit margin, and cash flow return on investment (CFROI), the financial measures emanate from the accounting statements based on the financial records of the firm (Gofwan, 2022; Olayinka, 2022).

b. Non-financial Measures: This measure relies on self-report or personal opinion of managers, customers and investors; it is connected to non-monetary instruments in explaining performance (Khan,*et al.,* 2024; Anna &Akhigbe, 2023), indicators for measurement in this direction include the following:

i. Market Metrics: market share, customer satisfaction, brand reputation, market growth, and competitive advantage

ii. Organizational Metrics: employee productivity, innovation, corporate social responsibility (CSR), employee engagement, and leadership effectiveness

iii. Operational Metrics: efficiency ratios, quality metrics, supply chain performance, innovation pipeline, and risk management.

2.3 Table Water Firms

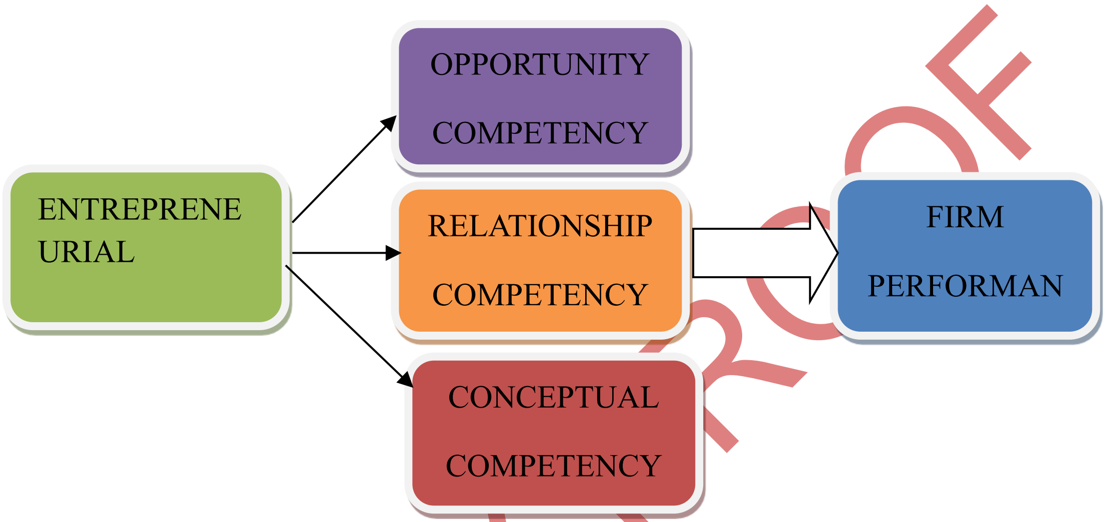
Table water firms, also known as the bottled water industry in Nigeria, have experienced significant growth in recent years. This growth is driven by factors such as inadequate public water supply, increasing demand for clean drinking water, urbanization, and rising health consciousness among consumers (Osunbor, et al., 2023; Adekunle,et al., 2024). In Minna Metropolis, the hot climatic conditions characterized by excessive sunshine also contribute to the increased demand for bottled water, thereby fostering the growth of table water firms. This expansion has led to the emergence of numerous firms striving to meet the escalating demand.

The global bottled water market size was estimated at USD 183.4 billion in 2020 and is expected to grow at a compound annual growth rate (CAGR) of 8.3% from 2020 to 2027 (Li,et al., 2020). In Nigeria, the National Agency for Food and Drug Administration and Control (NAFDAC) regulates the production of packaged water in line with WHO standards. After inspection, certified table water firms are issued approval numbers. However, challenges such as non-registration, expired licenses, and poor hygiene practices persist (VON, 2021; Business Day, 2021).

2.4 Conceptual Framework

The conceptual framework illustrates the relationship between entrepreneurial competencies and firm performance. Notably, no prior study has specifically examined the connection between these two concepts in relation table water firms in Minna metropolis. Therefore, the variables used to conceptualize entrepreneurial competencies are presumed to be related to firm performance.

Figure 1: Conceptual framework depicting graphical relationship amongst the predictors and firm performance.



Source: Man *et al.,* 2002 (adapted)

2.5 Theoretical Framework: Resource Based View (RBV) Theory

The Resource-Based View (RBV) theory originated from Edith Penrose's 1959 work, which described a firm as a combination of resources. The RBV continued to develop as a key perspective on strategic planning and development into the 1990s. The article "Firm Resources and Sustained Competitive Advantage," published in 1991, by Jay Barney, is a foundation article for this theory.

Resource-based approaches center competitive advantage on superior resource and capability development. Such resources have to be valuable, rare, unique, and non-imitable. Barney defines firm's resources as those assets, capabilities, processes, attributes, and knowledge `necessary to formulate and implement competitive strategies.

RBV theorists thus concluded that the performance of the organization is a result of character building, enough information, and understanding of relevant tasks specific to the sector. This would help the owners/managers of that firm to choose the right composition of competence. Firm owners'/manager's ability is here seen as essential and prized resources for performance and competitive advantage.

This study, utilize the Resource-Based View (RBV) theory, which aids in the allocation of usable resources within an organization, human resources, and material resources. The same RBV lays emphasis on entrepreneurial competencies being important to organizational performance and sustainable competitive advantage (Mitchelmore, et al., 2014).

2.6 Empirical Review

Pranowo, et al. (2020), this study examines the relationship between entrepreneurial competence, innovation capability, and business success in Indonesia's footwear industry in Indonesia. This research uses a survey method with a quantitative approach. Questionnaires were distributed 340 of 450 were returned. The hypotheses were examined by structural equation modeling. The results show that entrepreneurial competence influences innovation capability, and both factors positively impact business success. The study highlights the importance of enhancing innovation capability and entrepreneurial competence to improve business success in the industry.

Ibidunni, et al. (2022) this study investigated the impact of entrepreneurial competencies on innovation performance in Nigeria's informal SME sector, considering the role of the business environment. The study used survey research design and quantitative approach. The findings from a survey of 296 entrepreneurs revealed that certain competencies (organizing, conceptual, learning, strategic, opportunity, and risk-taking) are crucial for achieving higher innovation performance. Additionally, the study showed that entrepreneurial competencies can help mitigate environmental pressures, allowing entrepreneurs to gain control over their environment. The study contributes to entrepreneurship literature by identifying essential competencies and contingencies, providing a practical guide for stakeholders to prioritize investment in key competence areas.

Sakib, et al. (2022) this study empirically examined the impact of entrepreneurial competencies on SME performance in Bangladesh. Data from 115 entrepreneurs was analyzed using PLS-SEM, revealing that organizing, leading, learning, relationship, and commitment competencies positively impact SME performance. However, strategic and opportunity competencies had no significant effect. The study contributes to the understanding of relevant entrepreneurial competencies in a developing country context, providing insights for policymakers and entrepreneurship training programs. The competency measurement framework developed in this study offers a unique tool for designing targeted training programs for entrepreneurs.

Rehman, et al. (2023) investigated the impact of the management control system (MCS) package on business performance in SMEs, examining the mediating role of entrepreneurial competencies and the moderating role of business strategy. A total of 372 questionnaires were used in this research for analysis purposes using partial least square–structural equation modeling. Cluster sampling was used and nine states out of 16 states were selected randomly. The results show that MCS elements positively influence entrepreneurial competencies, which in turn impact business performance. The study contributes to the literature by addressing a significant gap in the understanding of MCS packages and business strategies in SMEs.

3.0 Methodology

This study employs a quantitative research design to examine the relationship between entrepreneurial competencies and the performance of table water firms in Minna metropolis. The target population comprises 159 owner-managers of table water production firms with at least five years of operation (Association of table/sachet water and beverages producer, Minna). Using Taro Yamane's (1967) formula, a sample size of 131 was determined at a 95% confidence level and 0.05 significance level. Simple random sampling ensured representativeness and minimized bias. Primary data were collected through self-administered questionnaires, and descriptive and inferential statistics were used to analyze demographic characteristics and relationships among study constructs, respectively.

3.1 Model specification

In modifying the model for the study, an econometrics model was employed to examine the effects of the independent variable (opportunity, relationship and conceptual competencies) on dependent variable (firm performance). The research model was also derived from the theoretical framework. The effect among the variables was then depicted below:

$FPi = \beta_0 + \beta_1 OPC + \beta_2 RC + \beta_3 CONC + \mu$

$FP_i = \beta 0 + \beta_1 OPC_i + \beta_2 RC_i + \beta_3 CONC_i + \beta_4 X_i + \epsilon_i$

Where: FPi = firm performance

β0 = constant (coefficient of intercept)

OPC = Opportunity competency (ability to identify and exploit business opportunities)

RC = Relationship competency (ability to build and maintain business relationships)

CONC= Conceptual competency (strategic and analytical thinking in business)

β_1, β_2, β_3, β_4 = Coefficients estimating the effect of entrepreneurial competencies and control variables on firm performance

Xi = Control variables (firm size, industry type, business experience, education level of entrepreneur, access to finance, etc.)

μ = Error term

4.0 Results and Discussion

4.1 Results Presentation

Out of one hundred and thirty-one (131) administered questionnaires, one hundred and nineteen (119) copies of the questionnaires were dully filled and returned from the respondents and analyzed.

Table 2: Demographic characteristics of respondents and firm information

	Frequency	Percentage	Valid %	Cumulative %
Sex				
Male	108	90.8	9.8	100
Female	11	9.2	9.2	100
Owner/Manager age				
Less than 30	12	10.1	10.1	100
31- 35	28	23.5	23.5	100
36 – 40	32	29.6	29.5	100
41 and above	47	39.5	39.5	100
Education Level				
O level	5	2.5	2.5	100
National Diploma (ND)/NCE	18	51.1	51.1	100
HND	53	44.5	44.5	100
Bachelor degree	39	32.8	32.8	100
postgraduate	6	5	5	100
Level of Investment				
5,000,000 to 10,000,000	5	4.2	4.2	100
11,000,000 to 20,000,000	17	14.3	14.3	100
21,000,000 to 30, 000,000	56	47.1	47.1	100
31,000,000 above	41	34.5	34.5	100

Formal Training				
Yes	93	78.2	78.2	100
No	26	21.8	21.8	100
Numbers of employees				
Less than 10	11	9.2	9.2	100
10 to 50	56	47.1	47.1	100
51 to 199	44	37.0	37.0	100
200 and above	8	6.7	6.7	100
Years of Operation				
1-5 years	8	6.7	6.7	100
6-10 years	65	54.6	54.6	100
11-15 year	27	22.7	22.7	100
15 and above	19	16.0	16.0	100

Source: Author's Field Survey 2025

Table 2: present the demographic characteristics of respondents and firm information feature of the study, the overall result shows that the majority of table water firm owners/managers in Minna Metropolis are male, aged between 36-40 years, and hold a Higher National Diploma (HND) or Bachelor's degree. Most firms have invested between ₦15,000,000 to ₦23,000,000, and have been in operation for more than 10 years.

Table 2: Summary of Regression Analysis Model [b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.449[a]	.202	.181	.4403	2.052

a. Predictors: (Constant), OC, RC, CC
b. Dependent Variable: FP
Source: Author's Field Survey 2025

Table 2 presents the regression analysis, showing that entrepreneurial competencies explain 20.2% of the variation in firm performance ($R^2 = 0.202$, $p < 0.005$). The standard error of 0.4403 indicates the extent of unexplained variation.

Table 3 ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	5.636	3	1.879	9.689	.000[b]
	Residual	22.296	115	.194		
	Total	27.931	118			

a. Dependent Variable: FP
b. Predictors: (Constant), CC, RC, OC
Source: Author's field survey, (2025)

Table 3 revealed that population parameters were found to have a significant p value of 0.000 which is lower than the 0.05. This is a clear indication that the data used in the study was adequate and reliable for making conclusion of the variables under study since the value of significance (p value) is lower than 5%. The F statistic critical at 5% level of confidence was (3, 115) = 9.689, P=.000). The study concludes that the overall model is significant and that the independent variable (OC, RC, and CC have effect on firm performance of table water firms in Minna metropolis.

Table 4: present the Result of Regression Analysis Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1 (Constant)	.307	.276		1.113	.268	-.239	.854		
OC	.495	.135	.330	3.660	.000	.227	.763	.856	1.168
RC	.040	.103	.035	.385	.701	-.165	.244	.864	1.157
CC	.381	.167	.204	2.288	.024	.051	.711	.875	1.142

a. dependent variable: FP
Source: Author's field survey, (2025)

Table 4 shows that opportunity competency has a significant positive effect on firm performance (β = 0.330, p = 0.000), indicating a 33% increase in performance for each unit increase in this competency. Conceptual competency also shows a significant positive effect (β = 0.204, p = 0.024). However, relationship competency, though positive, is not significant (β = 0.035, p = 0.701), suggesting minimal impact on firm performance.

4.2 Discussion of Findings

The study finds that opportunity and conceptual competencies significantly enhance firm performance, while relationship competencies have no effect. Regression results confirm that only two of the three competency types positively impact performance, highlighting the value of opportunity competency as a key internal resource in line with RBV theory.

Opportunity and conceptual competencies are valuable internal resources that enhance firm performance and sustain competitive advantage. The study shows that conceptual competencies help owners/managers make informed, innovative decisions, while their absence may hinder performance. These findings, consistent with Mashavira & Chipunza (2021) and Kovid et al. (2025), support the RBV theory by highlighting the strategic role of entrepreneurial competencies in firm success.

The results also indicate that table water firm owners/managers tend to undervalue relationship competency, which requires improvement for better future performance. Although the probability value associated with relationship competency is high, suggesting that enhancing this competency could yield improved outcomes in the long run. This finding is consistent with previous studies that explored the effect on these concepts (Nasuredin, et al., 2016).

5.0 Conclusion and Recommendations

5.1 Conclusion

This study highlights the importance of entrepreneurial competencies in enhancing firm performance. Both practitioners and researchers should focus on developing the entrepreneurial competencies and skills of firm owners/managers through training and development programs. By doing so, firms can improve their performance and gain a competitive edge in the market.

Recommendations

Results of this study notwithstanding, the following recommendations were suggested. Given the strong link between opportunity competency and performance, firm owners/managers should develop their ability to recognize, manage, and exploit opportunities, converting them into profitable products with significant customer benefits.
Owners and managers need to focus on relationship competencies through interaction with peers, suppliers, employees, and customers. It is also important to maintain a personal network of working contacts for enhanced future performance.

Owners/managers of table water companies should actively involve themselves in decision-making processes with situational analyses of problems under conditions of uncertainty while encouraging and accepting creative and innovative solutions. Another critical factor entails the acceptance of calculated, work-related product risks by the organization.

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Employees Relations and Organizational Performance of Olam Flour Mills, Ilorin, Kwara State

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Abstract

Globally, the success of any Organizations depends on a positive relationship between employees and employers. However, it is obvious that the struggle for harmonious relationship has become even more intense. Therefore, there is a need for managers to maintain strong relationships with their employees. This study investigates the link between employee relations and organizational performance at Olam flour mills, Ilorin. The research population consisted of 215 employees, and respondents were selected using a simple random sampling technique. The sample size of 138 was determined based on Krejcie and Morgan's (1970) formula. Data were collected through administered questionnaire and analyzed using descriptive and inferential statistics. The findings indicate a positive and significant relationship between communication, conflict resolution, and employee participation, with results as follows: ($\beta = 0.864$, $t = 23.424$, $p < 0.05$); ($\beta = 0.805$, $t = 23.285$, $p < 0.05$); and ($\beta = 0.885$, $t = 18.37$, $p = 0.05$), respectively. The study concluded that organisations that effectively utilise employee relations strategies will experience higher organisational performance. The study recommended that management of Olam flour mills should ensure proper manage and maintenance of employee relations strategies such as communication, conflict resolution and employee participation to improve their relationship with employees and drive overall performance of the organisation.

Keywords: Employee relations, communication, conflict resolution, employee participation, organisational performance.

1.0 Introduction

In today's competitive business environment, the link between employee relations and organizational success has become a key area of research, highlighting its importance in driving overall performance. Effective employee relations are keys for shaping workplace culture, resolving conflicts, and fostering positive interactions between employees and management (Kaufman *et al*, 2021). Organizations that prioritize strong employee relations tend to experience better performance outcomes, such as higher productivity, job satisfaction, reduced turnover, and greater achievement of organizational goals (Akinwale and Ogunyomi, 2021).

Employees are often seen as an organization's most valuable asset, and their contributions directly impact performance (Xi, 2019). As such, maintaining healthy employee relations is essential for any organization striving for growth. According to CIPD (2018), employee relations encompass a range of activities, including collective bargaining, negotiations, and labour law compliance, all to reduce turnover and improving retention. Effective systems for employee relations include practices such as employee recognition, policy development, and problem-solving. HR managers are necessary role in promoting positive employee relations, which is vital for organizational success, particularly in a competitive and rapidly evolving business landscape. Strong employee relations lead to organizational improvements, such as enhanced competitiveness, effective change management, and increased employee morale (Armstrong, 2016).

The quality of employee relations reflects an organization's core values and culture. Schein (2010)noted that with the rise of digital transformation, the need for effective employee relations has increased, as organizations must retain top talent and keep employees engaged in a technology driven world. The concept of employee relations dates back to the Industrial Revolution, highlighting the need for fair wages, better working conditions, and worker involvement in decision-making (Adebayo *et al*, 2020; Rusyandi,2020). Over time, employee relations have evolved into element of organizational performance, helping companies navigate change, retain talent, and maintain a productive work environment.

Organizational performance concern with how well a company achieves its objectives, such as profitability, growth, and employee satisfaction. Studies show that effective employee relations are linked to better performance outcomes (Kaufman *et al*, 2021; Malik *et al*, 2024). Employees who feel valued and respected experience increased motivation and productivity, which contribute to organizational success. Olam flour mills, a prominent agribusiness company, acknowledges the vital role of effective employee relations in achieving success.

The challenges faced by manufacturing companies include Olam flour mills, Ilorin, in leveraging employee relations to enhance organizational performance cannot be overemphasised. Despite the recognized importance of effective communication, conflict resolution and employee participation in driving organizational success, there exists a notable gap in their implementation within the company. Employees are not sufficiently engaged in decision-making processes, and the lack of open communication channels often leads to misunderstandings and disengagement. Furthermore, when conflicts among employees are not always addressed promptly it can negatively impact morale and productivity. As a result, employee dissatisfaction increases, and organizational performance suffers. Therefore, the study examine the effect of employee relations on the overall performance of Olam flour mills, Ilorin

2.0 Literature Review

2.1 Conceptual Review

2.1.1 Concept of Employee Relations

Xi, (2019) opined that employee relations represent an organization's deliberate efforts to implement various mechanisms aimed at regulating relationships among employees in pursuit of organizational goals. Kaufman *et al* (2021) define employee relations as the management of interactions between an organization and its employees to create a positive work environment, improve job satisfaction, and enhance overall productivity. Similarly, Pareek and Rai (2012) suggest that effectively managing employee relations fosters increased confidence, trust, and loyalty among employees. This suggestion fits into the style for managing employee relations in Olam Flour Mills, Ilorin. Supporting this idea, it has been observed that trust and loyalty are cultivated by employers through transparent remuneration practices, regular feedback systems, and delegating responsibilities to staff (Janssens *et al*, 2013). A failure to build trust and respect with employees can lead to deteriorating relationships over time. Nikoloskiet*et al* (2014) emphasize that employer-employee relations entail providing employees with clear and consistent information about the organization's objectives, ensuring they comprehend management's direction and their role in achieving organizational goals.

2.1.2 Communication

Communication is a cornerstone of positive employee relations within industrial relations frameworks (Obinna*et al*, 2024). It is the primary tool through which employers can convey organizational policies, expectations, and changes to employees. A transparent and open communication system fosters trust, ensuring employees are aware of organizational objectives, shifts in workplace policies, and the overall business environment (Mwale and Shaju, 2022). An organization's capacity to convey information effectively enables both clients and employees to engage in open communication and develop trust in the company. It is essential that communication be two-way, allowing employees to express their concerns, suggestions, or grievances. When employees feel they have a voice, it can mitigate misunderstandings that could lead to workplace disputes or unrest. The lack of clear communication, on the other hand, can result in employees feeling marginalized or misinformed, potentially escalating into resentment and conflicts (Maynard *et al*, 2015).

Moreover, communication contributes significantly to proactive conflict management. By maintaining clear and consistent dialogue, misunderstandings or disagreements can be resolved before they spiral into larger issues. Effective communication practices include regular meetings (one-on-one, group, or departmental), newsletters, and digital platforms (emails and intranet) to disseminate information and gather feedback (Mwale and Shaju, 2022). In industrial relations, communication extends beyond just formal channels; informal interactions between managers and staff also contribute to workplace morale. In fact, research consistently highlights that open communication is a key predictor of organizational success, as it leads to higher employee engagement, reduced turnover, and a more harmonious work environment (Prasetyo and Aliyyah, 2021).

2.1.3 Conflict Resolution

Conflict resolution plays an important role in industrial relations by addressing disputes in a way that prevents escalation and maintains workplace harmony (Aremu *et al*, 2021). Conflict is fundamentally a disagreement that may stem from various factors, including anger, mistrust, personality clashes, and biased institutional policies(Mahajan, 2022). Conflicts are inevitable due to the diverse backgrounds, interests, and expectations of employees and employers. How conflicts are managed greatly impacts the work environment in Olam Flour Mills, Ilorin. Poorly handled conflicts can lead to distrust, dissatisfaction, and even strikes, whereas effective conflict resolution ensures that grievances are resolved promptly and fairly (Adeyemi and Ademilua, 2012). According to Fisher *et al* (2011), conflict resolution based on mutual interest and respect leads to more sustainable solutions for all parties involved.

A key component of effective conflict resolution is providing employees with clear, structured grievance procedures. These systems address issues such as unfair treatment, disputes over wages, or working conditions transparently. Mediation, arbitration, and negotiation are tools used in many industrial relations settings. Mediation involves a neutral third-party facilitating discussions to help both parties reach a mutually agreeable solution, whereas arbitration requires a third party to render a binding decision. These mechanisms prevent conflicts from escalating and demonstrate the employer's commitment to fair treatment, reducing labor unrest (Avgar et al, 2023).

2.1.4 Employee Participation

Kuye and Sulaiman (2011) define participation as individuals engaging in decision-making, program implementation, benefiting from growth, and contributing to evaluations. Employee participation also involves employees actively applying their ideas, skills, and efforts to address organizational challenges and achieve its objectives. Engaging employees in decision-making boosts workplace morale and enables them to share valuable insights, ultimately leading to improved decision-making and problem-solving (Tidjoro and Barinua, 2022). Research shows that organizations with high levels of employee participation experience higher productivity, as employees are more invested in the organization's success (Benson & Lawler III, 2016).

In industrial relations, employee participation also serves as a mechanism to reduce labour disputes and promote industrial peace. Employees who are involved in shaping policies, particularly those related to compensation, work conditions, and job security, are less likely to engage in protests or strikes. Participation can take the form of works councils, joint committees, or collective bargaining, where management and employees collaborate to make decisions (Barinua and Christopher, 2022). This inclusive approach fosters a culture of collaboration over confrontation, preventing adversarial relationships and promoting a more harmonious and productive industrial relations environment (Bennett *et al*, 2016).

2.2 Theoretical Underpinning

2.2.1 The Resource-Based View (RBV)

The RBV, which gained prominence through the work Barney (1991) emphasized that the key to a firm's sustained competitive advantage lies in its unique resources and capabilities in the context of human resource, In the context of employee relations and organizational performance, the Resource-Based View (RBV) posits that employees are essential assets that drive an organization's competitive advantage. The theory asserts that organizations with well-managed, motivated, and skilled employees can leverage these human resources to drive performance, innovation, and overall success. Employee relations practices, such as effective communication, conflict resolution, and fostering a supportive work culture, are vital to maximizing the potential of these human resources. When employees feel valued, engaged, and well-supported, they are more likely to contribute positively to the organization, thereby enhancing its performance.

Moreover, according to the RBV, a company's ability to build and maintain positive employee relations can become a unique, inimitable resource that competitors find difficult to replicate, contributing to long-term organizational success. By aligning employee interests with organizational goals, the RBV underscores the importance of strategic employee management practices in achieving superior performance. Therefore, promoting strong employee relations goes beyond addressing individual concerns; it involves building a sustainable, high-performing workforce that aligns with and supports the organization’s strategic goals.

2.3 Empirical Review

A successful organization must communicate effectively with employees to ensure alignment with its goals. Effective communication is a cornerstone of organizational success, directly influencing performance, employee satisfaction, and overall productivity. Communication within an organization refers to the flow of information among employees, managers, and stakeholders, shaping the work environment and decision-making processes (Mwale and Shaju, 2022). Research consistently highlights that open, transparent communication enhances trust, collaboration, and engagement, leading to improved performance outcomes (Dartey-Baah, 2022).

Clear communication ensures that employees understand their roles, the organization’s objectives, and their part in achieving those goals. It also provides a platform for employees to voice concerns, give feedback, and propose ideas, enhancing decision-making and problem-solving (Owen, 2014).). Effective communication minimizes misunderstandings, reduces conflict, and promotes a positive work culture. Conversely, poor communication can result in confusion, dissatisfaction, and lower employee morale, which negatively impacts organizational performance (Nieken, 2023).

Moreover, communication plays a significant role in managing change within an organization. As businesses adapt to market shifts, the ability to effectively communicate these changes helps employees align with new strategies, increasing the likelihood of successful implementation. Organizations that emphasize effective communication are more likely to drive innovation, enhance employee engagement, and improve retention, all of which support long-term success (Huang and Guo, 2019).

Conflict resolution plays a pivotal role in shaping organizational performance, as it directly influences workplace harmony, employee engagement, and productivity. Conflicts are inevitable in any workplace, arising from differences in opinions, interests, and expectations. However, the manner in which conflicts are managed significantly affects organizational outcomes. Effective conflict resolution techniques, such as mediation, negotiation, and open dialogue, can prevent disputes from escalating and contribute to a more positive work environment (Aremu *et al*, 2021).

However, Igbokwe (2024) stressed conflicts, if not properly managed, can harm any organization. Often, managers are unaware of the negative impact employee conflicts have on productivity and performance. Unresolved conflicts within the organization lead to serious consequences, including high financial and human costs. Therefore, effective conflict resolution strategies are high needed to experience employee satisfaction, collaboration, and overall performance (Avgar*et al*, 2023). By addressing disagreements constructively, organizations can harness the potential of different perspectives to generate creative solutions and improve decision-making (Dartey-Baah, 2022). Additionally, the ability to manage and resolve conflicts effectively contributes to employee well-being, ensuring that individuals can focus on their work rather than unresolved tensions.

Employee participation plays an important role in improving organizational performance. It entails actively engaging employees in decision-making processes, which can enhance motivation, job satisfaction, and overall productivity. Employee participation in decision-making positively influences them, motivating them to contribute their best to the organization's growth and development. However, when employees are excluded from decision-making, it can lead to conflicts between management and staff (Ezeanolue and Ezeanyim, 2020). Employee participation in decision-making serves as an effective strategy for improving organizational productivity.(Majekodunmi and Olajide-Arise 2024).

Moreover, Organizations that promote employee participation typically experience lower turnover rates, as employees are more committed to the company's goals. Participatory approaches, such as works councils, joint committees, and collective bargaining, help bridge the gap between management and employees, promoting a collaborative work environment (Tidjoro and Barinua, 2022) Furthermore, involving employees in decision-making can lead to more innovative solutions, as diverse perspectives are considered, ultimately enhancing organizational competitiveness (Bryson et al., 2020). Studies also suggest that employee participation plays a role in reducing industrial disputes. Employees who have a voice in shaping policies related to compensation, work conditions, and job security are less likely to engage in protests or strikes, promoting industrial peace and stability. (Kuye and Sulaimon, 2011; Torka*et al* , 2010; Kaufman*et al*, 2021).

3.0 Methodology

This study employed a descriptive survey research design to gather employees' perspectives at Olam flour mills, Ilorin. The total population for the study was 215 staff members. A simple random sampling technique was used to ensure equal representation of participants.

The sample size was determined using the **Krejcie & Morgan (1970) formula:**

$$s = \frac{X^2 \mathrm{NP}(1-\mathrm{P})}{\mathrm{e}^2(\mathrm{N}-1) + \mathrm{X}^2\mathrm{P}(1-\mathrm{P})}$$

Where:

X2=3.841X^2 = 3.841X2=3.841 (Chi-square value for 1 degree of freedom at a 0.05 significance level)

N=215N = 215N=215 (Population size)

P=0.5P = 0.5P=0.5 (Estimated population proportion to maximize variance)

e=0.05e = 0.05e=0.05 (Margin of error, also referred to as the significance level)

Following **Krejcie and Morgan (1970),** a population proportion estimate of **0.50** was used to maximize variance, ensuring the largest possible sample size. With a **95% confidence level,** the assumption (1−P)≈1(1 - P) \approx 1(1−P)≈1 was applied to determine a statistically reliable sample size for the study.

$$s = \frac{3.841 \text{ x } 215 \text{ x } 0.5\ (1-0.5)}{0.05^2\left(215-1\right) + 3.841 \text{ x } 0.5\ (1-0.5)}$$

$$s = \frac{825.815\ x\ 0.25}{0.535 + 0.96025}$$

$$s = \frac{206.45375}{1.49525}$$

$$s = \frac{206.45375}{1.49525} = 138$$

Therefore, a sample size of one hundred and thirty eight (138) employees was used for the study.

Therefore, a sample size of one hundred and thirty eight (138) employees was used for the study.

4.0 Results and Discussion of Findings

4.1 Testing of Hypotheses

Table 1: Regression of Communication on Organizational Performance

Model: **OrgPer =ß0+ ß1Com + Ɛ**		Effect of communication on organizational performance							
	B	t	Sig.	R	R^2	$AdjR^2$	Df	F	Sig
(Constant)	.343	3.426	<.001	.856	.732	.730	1	548.689	$<.001^b$
Communication	.864	23.424	.000				129		
a. Dependent Variable: Org.Performance									

Researchers' Findings (2025)

The finding from the above hypothesis posited that effective communication significantly and positively contributes to organizational performance in Olam flour mills, Ilorin. The table shows that beta coefficient (β = 0.864), t-test value (23.424), and p-value (<0.05).

Therefore, the null hypothesis, which states that there is no significant impact of effective communication on organizational performance, is rejected at the 5% significance level. Consequently, the alternative hypothesis, which asserts that effective communication has a significant impact on organizational performance, is accepted. This finding indicated that organizations that fostering effective communication in employee- employer relationship drives towards organizational success and high performance.

Table 2: Regression of Conflict Resolution on Organizational Performance

Model: **Org. Per =ß0+ ß1ConRes+ Ɛ**	Effect of conflict resolution on organizational performance								
	B	t	Sig.	R	R^2	$AdjR^2$	Df	F	Sig
(Constant)	-.001	-.008	<.001	.899[a]	. 808	. 807	1	542.196	<.001[b]
Conflict resolution	.805	23.285	.000				129		
a. Dependent Variable: Org. Performance									

Researchers' Findings (2025)

The result of above hypothesis posited that conflict resolution has significant and positive impact on organizational performance in Olam flour mills, Ilorin. The beta coefficient (β = 0.805), t-test value (23.285), and p-value (<0.05). Therefore, the null hypothesis, which states that there is no significant impact of effective conflict resolution on organizational performance, is rejected at the 5% significance level. Consequently, the alternative hypothesis, which asserts that effective conflict resolution has a significant impact on organizational performance, is accepted. This finding pointed out that conflict resolution in employee relations contributes greatly to organizational performance.

Table 3: Regression of Employee Participation on Organizational Performance

Model: **Org.Per =ß0+ ß1EmpPar + Ɛ**	Effect of employee participation on organizational performance								
	B	t	Sig.	R	R^2	$AdjR^2$	Df	F	Sig
(Constant)	.425	3.452	<.001	.852[a]	.725	.723	1	337.799	<.001[b]
Employee participation	.885	18.379	.000				129		
a. Dependent Variable: Org. Performance									

Researchers' Findings (2025)

The findings above confirm that employee participation significantly and positively predict overall organizational performance in Olam flour mills, Ilorin. The beta coefficient (β =

0.885), t-test value (18.379), and p-value (<0.05) at a 5% significance level provide strong statistical support for the hypothesis. This implies that effective employee participation in employee relations enhances the attainment of overall performance in an organization at 5% level of significant.

The findings from the first hypothesis confirm that effective communication significantly enhances organizational performance, as indicated by the beta coefficient ($\beta = 0.864$) and p-value (<0.05). This suggests that strong communication practices within employee relations at Olam Company should be prioritized, as they are statistically significant at the 5% level. Investing in effective communication is essential for the organization, as it supports employees in improving overall work efficiency and achieving performance targets.This result aligns with the study by Bell, Rajendran, and Theiler (2012), which found that face-to-face communication in resolving employee disputes strengthens relationships between management and workers, ultimately leading to increased organizational productivity.

The results from the second hypothesis indicate that conflict resolution has a significant and positive impact on organizational performance at Olam flour mills, Ilorin ($\beta = 0.805$; $p=0.00<0.05$). This aligns with Kovach's (2015) study, which highlights conflict resolution as a crucial factor in enhancing relationships between employees and managers. Similarly, Aremu*et al* (2021) emphasized that effective conflict resolution fosters strong workplace relationships and industrial harmony, ultimately contributing to organizational sustainability and improved performance.

Furthermore, the findings from the third hypothesis indicate that employee participation in decision-making serves as a crucial criterion for achieving optimal performance in the sampled company. The t-value of 18.379 and a p-value of .000 confirm the model's significance at $p<0.05$, with a beta coefficient of 0.852. This suggests that employee participation plays a vital role in enhancing organizational performance at a 5% level of significance. These results align with the studies of Onkila and Sarna(2022) and Qureshi *et al* (2020), who highlighted that employee participation and teamwork management in employee relations contribute directly to improved organizational performance.

5.0 Conclusion and Recommendations

The study investigated the effect of employees relations on organisational performance in Olam flour mills Ilorin branch. From the findings, the research concludes that organizations with strong communication strategies, well-implemented conflict resolution mechanisms, and a culture of employee participation will experience higher organizational performance. These factors not only improve employee relations but also contribute to a motivated workforce, leading to better overall organisation's outcomes.

Based on the findings, the study recommended as follows:

i. The management of Olam flour mills should continuously build clear, transparent, and accessible communication systems. Open dialogue between

ii. employees and management can promote inclusion and keep employees informed about organizational goals and changes.

iii. The Management of Olam should provide regular conflict resolution training for both employees and managers. This training should focus on understanding the root causes of conflict and effective negotiation strategies.

iv. The Organization should continuously allow employees to be actively involved in decision-making, particularly in areas that directly affect their work and the overall functioning of the organization. Recognizing and implementing employee participation can lead to improved morale, job satisfaction, employee engagement and improve overall organisational performance.

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Rural Entrepreneurship and Income Generation in Kano State, Nigeria

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Abstract
A deficiency in the performance of entrepreneurs is an indication of low level of income, employment, productivity, and generally poor standard of living as well as the economic depression. This research work was carried out to assess the performance of rural entrepreneurs on income generation, covering six local government areas two from each of the three senatorial districts of Kano state. Income generation is the dependent variable while Capital Employed, Turnover, Level of Profit, Increase in Turnover, Entrepreneurs' performance are the independent variables. A sample of 200 entrepreneurs engaged in different activities was taken for the study using stratified random sampling technique. Descriptive statistics and ordinary least square (OLS) regression analysis were employed to analyse the data. From the empirical result, a positive and significant relationship between the performance of rural entrepreneurs and income generation at 1% significance level was discovered. Therefore, the study recommends that entrepreneurs should seek for knowledge and skills so that they can improve their performance. Also, government of Kano state should give subsidies and soft loan to prospective rural entrepreneurs to improve their income through creating micro finance banks within the study area.

Keywords: Rural Entrepreneurship, Income Generation, Entrepreneurial Performance, Rural Entrepreneurs

1.0 Introduction

Income generation is a critical aspect of economic development, particularly in rural areas where poverty and unemployment are prevalent. In Nigeria, income generation is a significant challenge, especially in rural areas where access to basic services such as healthcare, education, and infrastructure is limited. Kano State, located in the northern part of Nigeria, is one of the most populous states in the country, with a significant proportion of its population residing in rural areas. Income generation is a multidimensional concept that encompasses various aspects of economic activity. In the context of rural Kano State, income generation can be understood in terms of the following dimensions: Agricultural income which is a significant source of income for rural households in Kano State. The state is known for its rich agricultural land and favourable climate, making it an ideal location for farming. Non-farm income which includes income from small-scale enterprises, trade, and services, is also an important source of income for rural households in Kano State. Remittances which contains remittances from family members working in urban areas or abroad are also a significant source of income for rural households in Kano State. Finally, entrepreneurial income which included income from small-scale businesses and microenterprises, is also an important source of income for rural households in Kano State.

Entrepreneurship has been viewed as a "source of Income and employment generation"(Billyaminu, 2016). This is because entrepreneurs' performance has been found to be capable of making positive impacts on the economy of a nation and the quality of life of the people (Billyaminu, 2016). Ayoade and Agwu, (2016) believed that, the role of entrepreneurship is seen in mostly private-led sector economies that are developed. Governments in developing countries like Nigeria have tend to realized the importance of entrepreneurship in growth and development especially in the rural communities such that in the absence of entrepreneurship other factors of development may be wasted or frittered away. However, the acceptance of entrepreneurship as a central development force by itself will not lead to rural development and the advancement of rural enterprises (Nwankwo and Okeke 2017). He further stressed that what is needed in addition is an environment enabling entrepreneurship in rural areas. The existence of such an environment largely depends on policies promoting rural entrepreneurship.

Despite the importance of rural entrepreneurship in Kano State, there is a significant gap in understanding the factors that influence income generation among rural entrepreneurs in the state. Previous studies have examined the role of rural entrepreneurship in promoting economic growth and poverty reduction in Nigeria (e.g., Adeyinka, 2015; Oladele, 2017), but few studies have focused specifically on income generation among rural entrepreneurs in Kano State. A study by Abdullahi (2018) examined the challenges faced by rural entrepreneurs in Kano State, but did not specifically focus on income generation. Another study by Sani (2019) investigated the impact of rural entrepreneurship on poverty reduction in Kano State, but did not examine the factors that influence income generation among rural entrepreneurs. Therefore, this study aims to address the research gap by examining the factors that influence income generation among rural entrepreneurs in Kano State, Nigeria.

2.0 Literature Review

The section comprises the relevant conceptual, theoretical, empirical literature reviews.

2.1 Conceptual Literature Review

2.1.1 The Concept of Entrepreneurship

According to Nwankwo & Okeke (2017), in the olden days, entrepreneurship was limited to the process of taking risk of buying at a certain price and selling at an unknown price. Later it was extended to comprise the concept of bringing together the factors of production. The concept of innovation was added to the definition of entrepreneurship by theorists in the early part of this century. This innovation could be processing innovation, market innovation, product innovation, factor innovation, and even organisational innovation. Later definitions described entrepreneurship as involving the creation of new enterprises and that the entrepreneur is the founder.

From the work of Candelario-Moreno and Sanchez-Hernandez (2024), "rural area" is defined as a place where more than half of the population resides in rural municipalities. Rural communities are further categorized by having a population density of less than 150 inhabitants per square kilometer. Therefore, rural entrepreneurship is defined as the process of introducing a new product or technology to the market by starting a new business in a rural area. Rural entrepreneurship involves establishing a business in a rural setting. Rural enterprise is characterized by three key elements: geographic location, serving a rural customer base, and selling a rural product. The authors emphasizes that g eographic location is particularly significant in identifying rural entrepreneurship, as it offers certain advantages for economic activities that are specific to rural areas compared to urban environments. Similarly, Henry and McElwee (2014) suggest that rural entrepreneurship is based on location in rural areas, local employment, and contribution to the creation of value of the territory. However, it has been argued that knowledge of the local environment and its potential can have a significant effect on opportunity recognition. Other perspectives, such as gender or marketing, are much less common in this context (Ratten, & Usmanij, 2020).

Nigeria has experienced massive unemployment and absolute rural poverty due to improper implementation of sustainable development programmes such that encourage the growth of small business and entrepreneurial development especially at rural areas (Kadiri 2012). Onwukwe and Ifeanacho (2011) argue that since independence, promoting small business as the foundation of economic progress has been recognized in Nigeria by every regime. This is because of its perceived relevance in ensuring sustained increase in per-capita income and output and effective resource utilization. At the rural areas, the perceived ideal benefits of promoting entrepreneurial development are numerous. Rural entrepreneurship assists in employment generation, transformation of traditional to modern technology, stimulation of indigenous entrepreneurship, reversal of urban-rural migration, greater utilization of raw materials, promotion of local technology, mobilization of local savings, linkage balance by spreading investment more evenly, ability to operate profitably in very narrow markets with low purchasing power, among others.

2.1.2 The Concept of Income Generation

Income generation takes many forms. Originally it was a term used only by economists to explain the intricacies of a nation's economy. However, it is now quite widely used to cover a range of productive activities by people in the community. Income generation simply means gaining or increasing income. Income generation simply means gaining or increasing income or money that an individual or business receives in exchange for providing a good or service after investing capital. It can also be defined as small scale projects that create an income source to individual beneficiaries or beneficiary group whilst promoting; the principal right of self-determination and the objectives of integration, reputation and re – integration (Onyebu, 2016).

According to Zin (2011), there are three ways income can be generated. Firstly, income generation does not always mean the immediate getting of money, although in the end we use money to place a measurable value on the goods and services people produce. An example of income generation which does not lead to getting money would be a situation where a productive person produces enough food to feed himself or herself and the family. Skills have been used to meet immediate needs and thus savings have been achieved. A money value can be placed on the food produced and so the food can be seen as income. A second way a person can generate income is by creation or provision of new product or by astute investment of existing resources. An example would be development of a piece of land through planting a crop for sale or organization of factors of production and create a new product for sale. The money gained is income. An indirect form of investment is to bank savings or to purchase part ownership (shares) in a productive enterprise such as a business. Money generated from such investments is income. A third way to generate income is for people to use their skills by serving another person who pays for the use of those skills (Lazim & Ibrahim, 2020).

2.1.3 Role of rural entrepreneurship in income generation

Entrepreneurship is concerned with creating long-term value and consistent cash flow streams for the future through the power of imagination, initiative and innovation. The long-term value creation focuses of entrepreneurship requires that the entrepreneur strategizes towards maximizing profits and long-run expansion (Ebiringa, 2012). Enterprise growth is directly associated with increased demand for productive resources including labour and the payment of realistic and competitive rewards to attract and retain these factor inputs to lend their services to the entrepreneur. In this context, entrepreneurship offers a reliable source of income earning, not only to the entrepreneur and labour, but other factor inputs. Given the long-term focus and the growth potential of entrepreneurial activities, the entrepreneur and labour, and indeed, all income earners from entrepreneurial activities, become more economically independent and confident to confront the challenges of life. It can, therefore, be stated that entrepreneurship promotes income empowerment in an economy (Lazim & Ibrahim, 2020). In the modern world; entrepreneurship provides a new approach for fighting poverty and stimulating economic growth in developing countries. Entrepreneurship, to a very large extent, narrows the income gap and delivers a consistent mechanism for earning incomes and thereby reducing income inequality and poverty substantially. In practice, entrepreneurship is directly linked to higher productivity. The incentive for higher factor productivity is higher income. In order to sustain higher factor productivity to achieve the long-run growth objective of an enterprise, the entrepreneur must be committed to paying higher incomes in real terms. As the entrepreneur and labour keep enjoying higher incomes in real terms, they are naturally empowered economically through incomes, which push them above the Poverty-line permanently (Moses and Adebisi, 2013).

2.2 Theoretical Framework: Occupational Choice Theory

The study is underpinned by Occupational Choice Theory. The theory describes an individual's probability to choose self-employment, for example entrepreneurship, over other occupational alternatives. This choice depends on entrepreneurial abilities and other skills, age and experience, the perceived relative rates of return to self-employment.

According to the theory, entrepreneurship often occurs between formal and informal labor markets. In rural Africa the large majority of non-farm enterprises are informal enterprises. Based on the theory, a lack of education, skills and managerial experience, poor income generation and high level of unemployment may be important reasons for the informality and small size of these enterprises. Many workers also enter the informal sector in pursuit of opportunities. High sunk costs in the presence of credit market imperfections may explain why not all rural households enter into this type of enterprises. The households are often also involved in agriculture, and occupational choices intertwined with agricultural decisions (Erosa, *et al.*, 2022).

2.4 Empirical Review

Ibrahim & Mohammed (2024) examined the relationship of job creation and income generation with poverty reduction of Small-Scale Enterprises (SSEs) workers in Kano and Niger States of Nigeria. Chi square was adopted to test the two hypotheses in order to determine the degree of association of job creation, income generation and poverty reduction of SSEs workers and the difference in level of poverty reduction of the workers in the two States. The study administered a structured open-close ended questionnaire on 157 sampled workers from a population of 5000 workers (3264 for Kano and 1736 for Niger) obtained from the registered SSEs in the study areas. The theory of Abraham Maslow's hierarchy of needs was applied. The association of job creation and income generation with poverty reduction of the workers was established at 21.0% and 27.4% response for Kano State and 9.7% and 12.9% response for Niger State respectively. Also, a non-significant difference occurred in the level of poverty reduction of SSEs workers in study areas at Pearson Chi- square value = 1.096 and p value = .578. The easiest way to provide more job and income to workers is through SSEs.

Lazim and Ibrahim (2020) provided empirical evidence on the relationship between the four facets of entrepreneurial supports and rural entrepreneurs business performance. The entrepreneurial supports considered in the study are entrepreneurship training, marketing support, business networking, and financial support. A survey among 183 rural entrepreneurs was carried out. Self-reported measures were used to obtain data pertaining to government entrepreneurial initiatives and rural entrepreneurs' business performance. The multiple regression analysis was used to ascertain the proposed relationships and it was found that all entrepreneurial initiatives such as entrepreneurship training, marketing support, business networking and financial support were significantly related to business performance.

Manuere, et, al. (2018) investigated the effect of technology related work for small scale rural entrepreneurs on income generation and employment creation. The depended variables were income generation and job creation whereas the independent variables were technology related work and entrepreneurship empowerment. The questionnaire approach was used to collect data from small scale rural entrepreneurs in the Makonde District of Mashonaland West Province. A total of 150 small scale rural enterepreneurs, women, the youth and men, participated in the study. The purposive sampling method was adopted in order to select respondents who were already engaged in some income generation activities. To that end two hypotheses were generated and tested. The first hypotheses examined the relationship between entrepreneurship empowerment and unemployment reduction, whereas the second hypotheses examined the relationship between work related technology and income generation activities. Data was analysed using Peason's Correlation Matrix. The findings showed that there is a positive relationship between entrepreneurship empowerment and unemployment reduction. Furthermore, the findings revealed that technology related work for small scale rural entrepreneurs correlates positively with income generation activities.

Onyebu, (2016) investigated the income generating activities of rural women entrepreneurs in Enugu State, Nigeria. Multi-stage sampling procedure was used to select one hundred and eighty rural women entrepreneurs for the study. Data was collected with the aid of structured interview schedule, frequency counts and percentages were used to describe the data while multiple regression model was used as inferential statistical tool. The result revealed that most 64.3% of the respondents fall within the age bracket of 35 – 54 years, most married (81.1%), 59.4% had a household size of 6 – 10 persons. The most prominent income generating activities of rural women entrepreneurs is farming, followed by trading and processing of agro based products. The results further indicated that significant relationship exists between socio-economic characteristics and income generating activities of the rural women in the study area at 1%, 5% and !0%.

Nagler and Naude, (2017), studied the performance of non- farm entrepreneurs in terms of labour productivity, survival and exit in rural sub–Saharan Africa, cross sectional and longitudinal survey cover the six countries, Ethiopia, Malawi ,Niger, Nigeria, Tanzania and Uganda were conducted. The study found that female-headed enterprises, those located further away from population centers, and businesses that operate intermittently have lower levels of labor productivity compared to urban and male-owned enterprises, or enterprises that operate throughout the year. Finally, rural enterprises exit the market primarily due to a lack of profitability or finance, and due to idiosyncratic shocks.

Billyaminu (2016) carried out a study to assess the impact of entrepreneurship development programme (EDP) in generating income (IG) and employment (EG) covering ten selected local government of Kano state. A sample of 300 entrepreneurs engaged in different business activities was taken for the study using stratified and simple random sampling. Descriptive statistics, Correlation, OLS regression and ANOVA analysis was employed. From the empirical result, a positive and significant impact is seen on income generation by entrepreneurship development programme, while negative impact is reported on employment generation. The study concludes that most of the entrepreneurs in Kano state are operating a small micro business with no plan on expansion within the shortest possible period of time because, majority of the entrepreneurs operate their business individually without employing any labour this is due to factors such as business capacity, low capital, low rate of return and low profit.

Zin and Lazim (2015) conducted a study that attempts to provide empirical evidence on the relationship between the three facets of entrepreneurial initiatives and rural entrepreneurs business performance. The entrepreneurial initiatives considered in the study are entrepreneurship training, marketing support, and business support. Toward this end, a survey among 183 rural entrepreneurs was carried out. Self-reported measures were used to obtain data pertaining to government entrepreneurial initiatives and rural entrepreneurs' business performance. The multiple regression analysis was used to ascertain the proposed relationships between the research variables. It was found that only two entrepreneurial initiatives (entrepreneurship training, and marketing support) were significantly related to business performance.

Abraham *et al.* (2015) studied the factors that influence the competitiveness of Czech rural small and medium enterprises using survey questionnaires administered to 1144 randomly selected rural SMEs, the study used multiple regression analysis and the results demonstrate that the most significant determinants of rural enterprise's competitiveness are the location within a region with the competitive situation, the enterprise size, the enterprise age, and the fact whether the enterprise has some form of innovation.

Thaimuta and Moronge (2014), Carried out a study on the factors affecting the Performance of Small and Medium Enterprises (SMEs) in Nairobi County, Kenya. The data use for the study was collected through questionnaire. Multiple regression was used to analyze the data and the finding states that management skills, entrepreneurial skills, training and the role of (SMEs) sector in Nairobi County Kenya.

3.0 Methodology
3.1 Sampling and Sampling Technique

The main source of data for this research was survey, conducted in sampled communities within Kano senatorial districts (Kano Central, Kano North & Kano South). The field work for the study was formed of the design implementation of a household survey with the aim of examining the factors that influence income generation among rural entrepreneurs in Kano State, Nigeria. Quantitative method was used and generated data for the analysis. The population of this study comprises total numbers of entrepreneurs in Kano State. The areas were carefully selected by randomization for the study. The study employs an applied approach of Malhotra Naresh (2007). According to Malhotra, a population size of 1201-3200 has a sample size of 200 respondents. A sample size of Two hundred (200) was chosen from population of 2060. Total of Two hundred (200) respondents will be selected for the purpose of the questionnaire administration. Therefore, how the 200-sample size was allocated to the three different strata can be seen mathematically below using proportional stratified random sampling formula. The formula for the calculation of the proportional stratified random sampling is as follows

$$\textit{Sample size of the strata} = \frac{\text{Size of entire sample}}{\text{Target population}} \times \text{Stratum size (stratum population)}$$

Table 1.1 Allocation of 200 Sample Size to Three Different Strata

S/N	Stratified Rural Entrepreneurs	Population	Sample Size
1	**Central Senatorial zone**	743	72
2	**North Senatorial zone**	741	72
3	**South Senatorial zone**	576	56
	TOTAL	**2060**	

Source: Researcher's computation, 2025

3.2 Method of Data Analysis

Descriptive Statistics is employed to present and analyse respondents' information as well as business information. For this research, frequency and simple percentage will be used to present and analyse the demographics of the entrepreneurs and their businesses. To examine the performance of entrepreneurs in some selected rural areas of Kano state, this research adapts the empirical models of Hussain and Yaqub (2010) and Newhouse (2014) which assessed the determinants of rural income generation. The model is specified as follows:

INCG = *f* (CAPT, TURN, LPRO, ITURN, EP)…………..……………………………(1)

This is transformed econometrically as follows:

***INCG*= α_0 + β_1CAPT + β_2TURN + β_3LPRO+ β_4ITURN+ β_5EP+ $\acute{\upsilon}_t$ ……………..…(3)**

Where:

INCG = Income generation, CAPT = Capital Employed, TURN = turnover, LPRO= Level of Profit, ITURN = Increase in Turnover, EP = Entrepreneurs' performance, α = intercept,

β = coefficients and ύ = Random error term

4.0 Results and Discussion

4.1 Respondents' Demographics

Table 4.1: Respondents' Demographics

Variables	Frequency	Percentage
Gender		
Male	124	64.2
Female	69	35.8
Total	**193**	**100**
Age		
15-20	18	93
21-30	73	37.8
31-35	85	44.0
36-40	11	5.7
Above 40	9	3.1
Total	**193**	**100**

Highest Qualification		
Primary	27	14.0
Secondary	67	34.7
Tertiary	97	50.3
None	2	1.0
Total	**193**	**100**
Marital Status		
Married	103	53.4
Single	81	42.0
Divorced	8	4.1
Widow	1	0.5
Total	**193**	**100**
No of Children/Dependent		
0-2	144	74.6
3-5	39	20.2
6-8	8	4.1
Above 9	2	1.0
Total	**193**	**100**

Source*:* Field Survey (2025)

The respondents' demographics is presented using a simple descriptive analysis in order to identify their characteristics.

Gender in table 4.1 below indicates that entrepreneurship in the selected rural areas is dominated by males as identified by the descriptive statistics result. The males have 124 respondents which represent 64.2% while the females are having 69 equivalents to 35.8% of the distribution. This is partly due to the tradition of the study area that females are mostly at home taking care of their families rather than engaging in any business.

On the issue of the respondents' age, 31-35 age categories have the highest frequency of 85 which is 44% of the respondents. The least is 40 years and above with 9 respondents and 3.1% respectively. The entrepreneurship therefore is dominated by youth based on the responses.

In the result, majority of the respondents have tertiary education. The frequency and percentage for this category is 97 and 50.3 respectively. The second is secondary school certificate with 67 respondents representing 34.7%. 2 out of the respondents have no response with regard to qualification while there are 27 representing 14% with primary school leaving certificate.

53.4% of the respondents are married representing 103 respondents which is the highest. However, those that are single have the second highest frequency of 81 with 42%. 8 are also divorced while only 1 respondent is widow. Marriage has many responsibilities that only those with stable income can manage and this is one of the major reasons that backed this result where majority of the respondents fall under married category.

With the regards to the dependents of the respondents, 0-2 category has the highest frequency and percentage of 144 and 74.6 respectively. Those with 3-5 dependents have 39 frequency and 20.2% which is the second rated response. The remaining respondents fall under 6-8 and above 9 children.

4.2 OLS Regression Result on the effect of Rural Entrepreneurs and Income Generation

Table 4.3: OLS Regression Result on the effect of Rural Entrepreneurs and Income Generation

FPT	Coefficients	Standard error	t-values	P-value
Constant	.002	.010	0.16	0.873
TURN	.008	.007	1.06	0.292
CAPT	.007	.008	0.83	0.409
LPRO	.700	.042	16.52***	0.000
ITURN	-.137	.025	-5.45***	0.000
EP	-.071	.031	-2.27**	0.024
Observations	193			
R Square	0.656			
Adjusted R Square	0.647			
Prob. > F	0.000			
F (5, 187)	71.16			

Note: Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1
Source: Researcher's computation (Stata 14), 2025

The regression result of the contribution of rural entrepreneurship towards income generation is presented in Table 4.2 above. The result shows a coefficient of determination (R^2) of 65.55%. It implies that the independent variables have explained the dependent variable by such percentage. Thus, the variation in the income generation is explained and the result is statistically significant at 1% level of significance. The estimated F-value of the result is 71.16 with the probability of 0.000. This shows a strong fitness of the explanatory variables on the explained variable.
The level of profit the rural entrepreneurs in the regression result shows a positive relationship with the dependent variable. The result is statistically significant at 1% significance level. It is identified that 69.9% of the variation in income of the rural entrepreneurs is determined by the level of their profit. Whenever profit of the entrepreneurs increased, the income of the rural areas tends to increase and vice versa.
The regression results show that increase in turnover exhibit a negative relationship with income generation. The linkage is statistically significant at 1%. An increase in turnover negatively affects income generation by 14%.
Income of the rural entrepreneurs may not necessarily increase income generation as depicted in the regression result as the results depict a negative relationship between income of the entrepreneur's performance and income generation in the rural areas. There is a meagre percentage of 0.7 variation in the income generation as a result of increase in income of the rural entrepreneurs.

4.3 Diagnostic Tests

4.3.1 VIF Test for Multicollinearity

The Variance Inflation Factor (VIF) test is employed to check whether there is presence of multicollinearity among the independent variables or not.

Table 4.4 VIF Test for Multicollinearity

VIF	VARIABLES
Mean of VIF	1.27

Source: Researcher's computation (Stata 14), 2025

Table 4.4 above shows the Variance Inflation Factor (VIF) test for multicollinearity. For a multicollinearity to be present, the mean VIF should be above 10. The result indicates a mean VIF of 1.27. This means absence of multicollinearity among the independent variables. The hypothesis of presence of multicollinearity is therefore rejected as the variables are not perfectly collinear.

4.3.2 Tests of Heteroskedasticity

Breusch-Pagan / Cook-Weisberg test of heteroskedasticity is carried out to detect if the independent variables are hetroskedastic as shown in Table 4.5.

Table 4.5: Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

chi2(1)	**850.07**
Prob > chi2	**0.0000**

Source: Researcher's computation (Stata 14), 2025

The Breusch-Pagan / Cook-Weisberg heteroskedasticity test is shown in table 4.5. The statistical result shows that, the probability (prob = 0.0000 is less than 0.05 (p-value < 0.05). Which indicates absence of heteroskedasticity in the model.

4.3.3 Normality Tests

Table 4.6: Jacque Bera (JB) test for Normality

Skewness/Kurtosis tests for Normality

Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj chi2(2) (joint)	Prob>chi2 (joint)
e	193	0.0000	0.0000	.	0.0000

.

Source: Researcher's computation (Stata 14), 2025

The test is carried out using Jacque Bera (JB) test and it shows the p-value connected to the sample skewness and the sample tests of the kurtosis are all 0.000. The p-value of the joint test is also 0.0000 which is an indication of rejecting the null hypothesis. We can conclude that the model is normally distributed at 5%.

5.0 Conclusion and Recommendations

This research work was carried out to empirically evaluate the performance of entrepreneurs in some selected rural areas of Kano State. The study concluded that level of profit, increase of turnover, and entrepreneurs's performance are the determinants of income generation among rural enterpreneurs in Kano state.

Based on the results of the analysis of this research work, the followings are recommended:

i. Since profit was found to have positive impact with income generation, rural entrepreneurs should put more efforts in cost minimization in order to make more profit.
ii. There is a need to increase entrepreneurs' performance through engaging them in training, provision of subsidies and grants as well as utilization of technical advancement These can help to avert the negative relationship between income generation and the performance of the rural enterpreneurs
iii. Government and traditional rulers should enlighten the rural people on the importance of patronage of local products. Channeling the goods to urban markets also will help increase the turnover.

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Projects Integrating Sustainability Management and Project Delivery Performance in Nigeria

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Abstract

The implementation of Traditional project management methodology (TPMM) in Nigeria has resulted in ongoing inadequate evaluation and monitoring of construction project performance, which has caused a significant number of project failures in the Nigerian construction industry. Nonetheless, construction project managers in Nigeria are hesitant to embrace new and enhanced methodologies like PRiSM that can lead to better decision-making and project success. This study examines how the implementation of PRiSM (Projects integrating Sustainability Management), a novel project management practice, can enhance the performance of construction projects. Specifically, it focuses on how PRiSM, a sustainability methodology, contributed to the improvement in project delivery performance in the South-South region of Nigeria. Because of the challenges in acquiring a complete list of construction stakeholders, Cochran's formula was applied, resulting in a sample size of 384.The research used a descriptive design and gathered information from stakeholders through a questionnaire survey. One hypothesis was formulated and tested using regression analyses. The results shows a p-value less than 0.05 indicating a relationship between the use of the PRiSM methodology and project delivery performance. The findings also raises numerous factors affecting its development. These findings suggest that professionals in the field need to acquire new skills and training in sustainable techniques and technologies. This information could be valuable for project management experts seeking to understand sustainability challenges and exploit opportunities to increase project success rates while reducing the carbon footprint.

Keywords: Construction projects, TPMM, PRiSM, Project delivery performance

Introduction

The act of carrying out projects leads to change by producing new goods, services, results, and advantages for people, businesses, and institutions (Mergela, Edelmannb, & Hauga, 2019). Therefore, their effectiveness is vital for the economic and social progress of any country. Project performance is defined by PMI (2017) as the degree to which a project meets the specified requirements using particular approaches. Throughout the duration of the project, these methods and principles are employed to develop and improve the product, service, or outcome (PMI, 2017). As stated by Ungureanu and Ungureanu (2024), a project management methodology refers to any principle that delivers successful project results.

Efforts to improve project performance have not prevented project under-performance from becoming a widespread issue in the construction industry, both in Nigeria and globally, as evidenced by its persistent nature (Love et al., 2011; Zhang and Fan, 2013). Lavanchy (2022) has highlighted several prominent projects in Europe, such as the Berlin Brandenburg Airport in Germany, the Scottish Parliament Building in the United Kingdom, and the Flamanville Nuclear Power Station EPR in France, which have all experienced delays and significant cost overruns, amounting to billions of pounds. He mentions that some of the most excessively costly metro projects in the United States include the New York MTA East Side Access and the Boston Central Antenna/Tunnel initiatives. Furthermore, Vartabedian (2022) stated that 92% of large-scale infrastructure projects in the United States went beyond their original cost and time estimates.

The issue of the 'construction pandemic' is prevalent in Nigeria as well. According to Vanguard (2022), there were approximately 56,000 abandoned public funded projects with a total value of over 12 trillion naira spread across Nigeria as of August 2021. As a result, a large number of infrastructure projects throughout the country are either left incomplete or progressing at a slow pace. Examples of such projects include the Ajaokuta Iron & Steel Company, Central Bank of Nigeria (CBN) Centre of Excellence (COE) Project in Maiduguri, Itakpe Iron-Ore Mining Company, Abuja-Kogi-Benin Federal Highway, and the Lagos-Ibadan motorway (Muhammed & Muhammed, 2021). These issues are hindering the country's developmental progress. Improving project management practices and methodology has been recognized as the potential solution to counteract the trend of poor project performance or underperformance.

The company developed its own GPM Global P5 Standard for Sustainable Project Management, utilizing the Projects Integrating Sustainable Methods (PRiSM) approach to ensure that construction practices and outcomes are environmentally sustainable. As expressed by (Carboni et al., 2013), "PRiSM is a method of delivering sustainable projects that integrates practical tools and techniques to manage the equilibrium between limited resources, social responsibility, and the achievement of environmentally friendly project outcomes. It was created for organizations to merge project processes with sustainability efforts to attain business goals while minimizing environmental impact." They believe that it's a method for managing projects in a structured way, emphasizing sustainability and incorporating it into the usual project stages. Understanding and effectively dealing with these areas can minimize adverse environmental effects in any project and maximize the potential to handle sustainability and limited resources.

Throughout the project lifecycle, PRiSM stands out due to its adaptability (Cabeças, 2022). PRiSM is characterized as a sustainable PMM that integrates five elements to offer a comprehensive perspective on project management (Gutierrez, 2014). Carboni et al. (2018) state that PRiSM's concepts and principles were created to address concerns about the implementation of project processes.

Furthermore, PRiSM's significance lies in its ability to enhance project goal and scope management, expedite time-to-market, mitigate risks, streamline processes such as decision-making and quality management, improve customer satisfaction, facilitate knowledge sharing across projects, and allocate more time to value-added tasks (Charvat, 2003; Chin and Spowage, 2010).

The current project management methodologies lack adequate development in terms of sustainability, and there are limited scientific publications that connect project management with sustainability. This article seeks to address this deficiency by expanding the discussion on sustainability in project management with regard to their impact on project delivery performance.

However, the paper main aim is to examine the relationship between projects integrating sustainability management and project delivery performance in Nigeria. The specific objectives include: (i). to examine the impact of PRiSM methodology on project delivery performance in Nigeria, and (ii). to identify factors affecting PRiSM methodology development in Nigeria

Literature Review

Project Management Practices in Nigerian Construction Industry

According to PMI (2017), project management involves systematically applying skills, knowledge, tools, and techniques to project tasks to achieve project objectives, which include delivering the project within budget, on time, and meeting quality standards while considering stakeholders' interests. Project management encompasses nine knowledge areas: cost, scope, schedule, quality, resources, communication, procurement, risk, and stakeholder interests (PMI, 2017), and begins with creating the project charter and project management plan (Olaniyan, 2019).

The project charter defines the project's scope, objectives, key stakeholders, and project participants, as well as detailing the authority of the project manager (Olaniyan, 2019). The project management plan is a finalized working document that delineates the approach and steps to be followed for planning, executing, coordinating, monitoring, and closing the project (Kerzner, 2017). Best practices are widely-accepted methods that have proven to effectively achieve desired outcomes. Incorporating best practices in project management enhances project performance. Identified areas for improvement in Nigeria include public procurement strategy, risk assessment, institutional frameworks, stakeholder engagement, monitoring and evaluation, and executive project management philosophy (Salawu and Abdullahi, 2015). According to Kerzner (2017), project management maturity refers to the existing state of an organization's project management processes, which helps to identify the processes that the organization needs to develop to achieve its future goals.

PRiSM (Projects integrating Sustainable Methods)

The acronym PRiSM stands for PRoject Integrating Sustainability Measures. This methodology is based on principles and utilizes a value-maximisation approach to project management, incorporating sustainability throughout the entire project lifespan. By leveraging current organizational systems and emphasizing both process and the end product, it ensures the realization of sustainable benefits (PM365, 2021).

Furthermore, the management methodology of a project incorporates sustainable practices. GPM Global, an organization promoting sustainable project management, developed PRiSM. PRiSM includes principles and guidelines to aid project managers in integrating sustainability into all project stages. These principles involve incorporating sustainability goals into the project's scope, addressing sustainability risks, involving stakeholders in sustainable practices, developing a sustainable project management plan, and evaluating project sustainability performance. PRISM aims to assist project managers in creating sustainable projects with a positive impact on the environment, society, and the economy. This methodology is one of many that prioritize sustainability as a vital aspect of project success (PMO Global Institute, 2021).

Padickakudy in his work from 2019 introduces the concept of PRiSM, which signifies projects integrating sustainable methods. This methodology targets to incorporate sustainability factors into project management processes by taking into account social, economic, technical, governance, and environmental aspects. By combining the best practices from various standards, such as ISO 14000 Environment, ISO 21500 Project management, ISO 26000 Social responsibility, ISO 9000 Quality, and ISO 50001 Energy standards, PRiSM provides a comprehensive framework. Figure 1 illustrates the PRiSM methodology framework.

Figure 1: PRiSM Methodology Framework
Source: Miller, (2022).

The PRiSM framework was developed by the Green Project Management Organisation (GPMO) to tackle the issue of project management sustainability (Miller, 2022). This framework integrates various ISO sustainability standards and types of sustainability. According to Alvarez-Dionisi et al. (2016), the scope encompasses the potential long-term benefits. Additionally, he mentioned that PRiSM operates with the 5 Ps, which include Product, People, Process, Profit, and Planet, and these are embedded within the connections between feasibility study, plan evaluation, planning & organization, and implementation.

The PRiSM framework consists of six guiding principles that collectively involve incorporating sustainability and sustainable development within a company. As stated by Green Project Management (GPM) (2019), these six principles are based on the PRME (Principles for Responsible Management Education), UN Global Compact's Ten Principles, Earth Charter, and ISO: 26000 Guidance on Corporate Social Responsibility.

Empirical Review

To execute a PRiSM methodology, which promotes sustainable practices that improve project delivery efficiency, reduce risks, stay within budget, and meet timelines in the construction sector, Fagarasan et al. (2023) performed a study aimed at addressing a gap by introducing a data-driven scoring model tailored for software companies to incorporate sustainability metrics into their project and portfolio evaluations. A comprehensive literature review was conducted to identify shortcomings in current practices, leading to the creation of a scoring model that integrates delivery and sustainability metrics seamlessly. Validation through a case study indicated that the model positively impacts the performance and sustainability aspects within software development organizations.

In a separate investigation, Zoufa and Ochieng (2016) presented the outcomes of an exploratory study involving interviews with 25 senior project managers in the construction sector who have some involvement with sustainability. The primary conclusions indicate that comprehensive sustainability strategies and initiatives throughout project life cycles in the construction industry have not been entirely adopted. Although all interviews took place in Nigeria, the findings may have relevance or interest for other countries as well.

Soares et al. (2024) conducted a study focusing on Sustainability in Project Management Practices. An online survey was created based on an extensive review of the literature, yielding a total of 107 valid responses for analysis. The findings highlight the most beneficial sustainable project management practices recognized by seasoned project professionals, including 'Sustainability team management,' 'Lessons learned towards sustainability,' and 'Sustainability risk register,' among others. Nonetheless, data analysis reveals a prevailing trend characterized by the limited perceived effectiveness of sustainability practices within the realm of project management.

Additionally, the connection between PRiSM methodology and project delivery performance must be highlighted. This link was confirmed by Moshood et al. (2024), who investigated the criteria for project sustainability success for future performance in construction projects. Information obtained from the Scopus database was analyzed using ATLAS.ti 9 software to establish criteria for achieving project sustainability success. The study's results indicate that both organizational and individual factors are strong predictors of sustainable construction and are essential antecedents for greater sustainability implementation. Lastly, the research emphasizes the importance of construction project managers' understanding of how to establish sustainability-related criteria and its potential impact on their project outcomes.

Isang (2023) likewise performed a study on the historical assessment of sustainable construction (SC) progress in Nigeria spanning a decade. The assessment also offers a thoughtful viewpoint on the advantages of SC and the current status of green building enforcement in Nigeria. A historical analysis approach was utilized in the research. Employing secondary data sources, 47 key journals from the emerald, scopus, and science direct databases pertaining to "SC," "sustainability," and "green building" in Nigeria from 2012 to 2022 were utilized for the analysis. The examination concluded that the growth of SC in Nigeria has experienced three distinct phases: the initial phase (2012–2016), the transitional phase (2016–2020), and the growth phase (2020–present). The review compares the three timelines to highlight the swift increase in SC awareness, yet it disclosed moderate implementation levels in several key cities in Nigeria.

Nonetheless, the research carried out by Kyriakogkonas et al. (2022) aimed to offer a theoretical framework enabling businesses and organizations to integrate sustainability criteria into the project management process through a conceptual lens, utilizing the Project Management Institute's guidelines and qualitative techniques like "text analysis" and "content analysis." Special focus was given to the advantages that companies gain from incorporating sustainability practices into their decision-making to operate responsibly and positively influence the environment they work in and the individuals impacted either directly or indirectly.

Theory Underpinning the Study

In 1984, Israeli business management expert Eliyahu M. Goldratt introduced the theory of constraints as a management philosophy through the publication of The Goal. He further delved into project management with the release of Critical Chain in 1997.

The Theory of Constraints (TOC) is a methodology that targets the identification and correction of constraints or root causes of bottlenecks in order to enhance processes. Addressing these constraints can lead to increased profitability for businesses and improved efficiency for organizations striving to achieve their objectives (Safety Culture Content Team, 2024). TOC is centered on enhancing systems, which are defined as a series of independent processes (Trojanowska & Dostatni, 2017).

The theory address project constraints that could impede project performance. The TOC emphasized on identifying and eliminating major constraints in order to ensure the timely completion of construction projects. The significance of this theory lies in optimizing project performance through the identification and removal of constraints (Mishra, 2020).

Unlike traditional sustainability project management which only focuses on the triple bottom line (environment, community, finance) to develop projects, Green Project Management (GPM) advocates for the inclusion of additional elements to align projects with the core corporate strategy. As a result, they introduced the PRiSM methodology, incorporating five elements (People, Planet, Profit, Product, and Process) as a new bottom line.

Projects integrating Sustainable Methods (PRiSM) merge traditional project phases with sustainability through the incorporation of activities from ISO standards such as ISO-9001 (Quality Management), ISO-14001 (Environmental Management), and ISO-50001 (Energy Management Standard). Furthermore, it integrates ISO Guidelines like ISO-26000 (Corporate Social Responsibility) and ISO-21500 (Guidance on Project Management) to attain additional environmental and social advantages (Gutiérrez, 2024).

Conceptual Framework

Studies by Marques et al. (2023), Mamdouh and Ahrouch (2022), and Ndayishimiye and Gachiri (2024) have provided strong support for the relationship between the PRiSM methodology and improved project delivery performance. They also found a link between project implementation methodology and stakeholder satisfaction. These earlier investigations identified the foundations for upcoming theoretical and empirical advancements. The study's conceptual framework is shown in Figure 2.

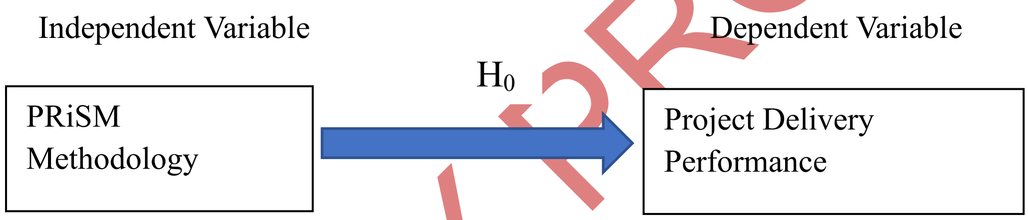

Figure 2: Conceptual Framework
Source: Authors' Construct (2024)

The relationship between the PRiSM approach and project delivery performance is seen in the figure. According to Cabeças (2022), improving PRiSM methodology can improve sustainability in project delivery performance. To investigate the connection between the PRiSM technique and project delivery success, a hypothesis was formulated.

H_0: There exists no significant relationship between PRiSM methodology and project delivery performance.

RESEARCH METHODOLOGY

This study utilized a quantitative approach to examine how stakeholders perceive the impact of PRISM methodology on infrastructure project performance in Nigeria. The primary data consists of responses from contractors, consultants, and professionals involved in construction activities. The study population comprises construction professionals in the South-South geopolitical zone of Nigeria. However, due to difficulties in finding a complete list of unregistered and registered construction stakeholders in this region, the sample size was realised via Cochran's (1963) formula.

$$n_0 = \frac{Z^2pq}{e^2}$$

$$n_0 = \frac{1.96^2(0.5*0.5)}{0.05^2}$$

$n_0 = 384$

Thus, the sample size realised was 384 construction professionals.

To begin with, three states out of seven were selected using simple random sampling. An equal number of respondents were then chosen from each of these states. Subsequently, data from construction professionals such as Builders, Architects, Engineers, Construction/Project Managers, Contractors and Quantity Surveyors in the Southern region of the country was gathered using purposive sampling. The collected data was later analyzed using regression analysis.

Results and Discussion

Information was collected by using a questionnaire from selected participants. 384 questionnaires were given to construction experts in the South-south region of Nigeria, and 239 were returned. Both descriptive and inferential analysis were used to analyze the data. The findings were discussed and compared with previous studies.

Descriptive Statistics

The background information of the respondents was showcased in a tabular format using descriptive statistics, displaying the respondents' characteristics through percentages and frequencies. Table 1 shows the background of the respondents.

Table 1: Descriptive Statistics of the Background Respondents Information

	Freq	Valid %	Cum %
Gender			
Male	163	68.2	68.2
Female	76	31.8	100
Total	239	100.0	
Age			
20-30 years	34	14.2	14.2
31-40 years	56	23.4	37.6
41-50 years	74	31	68.6
51-60 years	48	20.1	88.7
61 and above years	27	11.3	100
Total	239	100.0	
Profession of Respondents			
Project Manager	46	19.2	19.2
Quantity Surveyor	36	15.1	34.3
Architects	31	13	47.3
Engineers	35	14.6	61.9
Site Managers	33	13.8	75.7

	Freq	Valid %	Cum %
Level of Education			
National Diploma	25	10.5	10.5
Higher National Diploma	68	28.5	39
First Degree	77	32.2	71.2
Master's Degree	55	23.0	94.2
PhD	14	5.8	100.0
Total	239	100.0	
Duration of involvement in Building Construction Project Management			
Less than 3 years	41	17.2	17.2
3 – 7 years	89	37.2	50.2
Above 7 years	109	45.6	100.0
Total	239	100.0	

Estate Surveyor	32	13.4	89.1
Urban & Regional Planners	26	10.9	100
Total	239	100.0	

Duration of using Project Management Software			
Less than 3 years	40	16.7	16.7
3 – 7 years	92	38.5	55.2
Above 7 years	107	44.8	100.0
Total	239	100.0	
How much do you know about PRiSM Methodology as a Project Management Tool			
Not at All	41	17.2	17.2
Moderate	69	28.9	46.1
Very Much	129	53.9	100.0
Total	239	100.0	

Source: Field Survey, 2024

Table 1 presents the respondents background information. It reveals that 163 (68.2%) of the respondents were male, while 76 (31.8%) were female, indicating a higher male representation in the construction industry, possibly due to the demanding nature of the profession. The age distribution of the respondents is as follows: 20-30 years (14.6%), 31-40 years (23.4%), 41-50 years (30.9%), 51-60 years (20.1%), and 61 years and above (11.3%), reflecting a dominance of the youth population in the industry. Among the professionals, 46 were Project Managers (19.2%), 36 were Quantity Surveyors (15.1%), 31 were Architects (12.9%), 35 were Engineers (14.6%), 33 were Site Managers (13.8%), 32 were Estate Surveyors (13.4%), and 26 were Urban & Regional Planners (10.9%). This indicates a high number of project managers, suggesting that construction organizations highly value project managers and structure their project sites accordingly. In terms of education, 25 (10.5%) have National Diplomas, 68 (28.5%) have Higher National Diplomas, 77 (32.2%) have First Degrees, 55 (23%) have Master's Degrees, and 14 (5.9%) have PhDs, highlighting that a First Degree is the minimum qualification necessary to acquire construction skills. Regarding professional experience, 41 respondents (17.2%) have less than three years of experience, 89 (37.2%) have 3-7 years of experience, and 109 (45.6%) have above 7 years of experience in the industry, indicating that the professionals have more experience than anticipated. On the use of construction software, 40 respondents (16.7%) have less than three years' experience, 92 (38.5%) have 3-7 years of experience, and 107 (44.8%) have above 7 years of experience, showing that the targeted respondents have more experience than expected. Additionally, 129 respondents (53.9%) have knowledge of PRiSM methodology, 69 (28.9%) have moderate knowledge, and 41 (17.2%) have no knowledge, indicating that over half of the respondents demonstrate knowledge of PRiSM, reflecting their high-level knowledge of the tools and techniques essential for construction work.

Regression Results of Impact of PRiSM Methodology on Project Delivery Performance

Based on the relationship between PRiSM Methodology and Project Delivery Performance, the hypotheses formulated include:

H_0: There exists no significant relationship between PRiSM methodology and project delivery performance.

The regression results of PRiSM Methodology and Project Delivery Performance is presented in Table 2 and Table 3.

Table 2: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.757[a]	.674	.672	.30354

a. Predictors: (Constant), PRiSM Methodology

b. Dependent Variable: Project Delivery Performance

Table 2 displays the R and R^2 values. An R value of 0.674 indicates a strong correlation, suggesting that 67.4% of the variation in the dependent variable, Project Delivery Performance, can be attributed to the independent variable, PRiSM Methodology. Therefore, a large portion, 67.4%, can be accounted for in this instance.

Table 3: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.301	.133		9.752	.000
	PRiSM Methodology	.665	.039	.757	17.089	.000

a. Dependent Variable: PDP

The information in Table 3's Coefficients allows us to make predictions about Project Delivery Performance based on PRiSM Methodology, and to determine if PRiSM Methodology has a statistically significant impact on the model. PRiSM Methodology has a significant contribution ($p < 0.05$), indicating a strong association with Project Delivery Performance. Consequently, the initial hypothesis stated which said that there is no significant relationship between PRiSM methodology and project delivery performance in Nigeria has been rejected. Additionally, the values in the "B" column under the "Unstandardized Coefficients" section, displayed in table 3, lead to the following regression equation:

Project Delivery Performance = 1.301 + 0.665 (PRiSM Methodology)

Thus, the PRiSM methodology is believed to have a substantial favourable impact on the performance of project delivery. It was hypothesized that there is no noteworthy impact of PRiSM methodology on project performance in Nigeria. However, the results show that there is a significant positive correlation between PRiSM methodology and the performance of project delivery. This aligns with the conclusions of Carboni et al. (2018), who stated that "PRiSM is an environmentally friendly project delivery approach that utilizes concrete tools and techniques to effectively manage the interplay between limited resources, social responsibility, and the delivery of sustainable products".

Table 4: Multiple Responses for Factors Affecting PRiSM Methodology Development

Factors	SD	D	I	A	SA
Lack of Desire for Change	5	4	5	11	214
Inadequacy of Innovativeness	20	12	13	13	181
Project Managers Insufficient Thinking Capacity	37	4	5	3	190
Sufficiency in the usage of Traditional Project Management Methodologies	5	32	5	3	194
Lack of Adaptability	5	4	33	3	194
Insufficiency of Research and Development	13	16	9	23	178
Comfortability in the usage of Traditional Project Management Methodologies	11	6	6	23	193
Total (Percentage)	96 (5.74%)	78 (4.66%)	76 (4.54%)	79 (4.72%)	1344 (80.33%)
Mean	**0.4013**	**0.3264**	**0.3179**	**0.3305**	**5.6234**

Source: Author's Field Survey, (2024).

From the table, the result shows that a high number of respondents choose Strongly Agree for these factors, with a response rate of 80.33 percent. However, other responses include Strongly Disagree, Disagree, Indifferent and Agree with responses of 96, 78, 76, and 79 indicating a response rate of 5.74, 4.66, 4.54 and 4.72 percent respectively. This implies that despite PRiSM methodology fosters effective project delivery, numerous factors affect its development in South-South Nigeria. This outcome conformed to earlier studies of Zoufa and Ochieng (2016).

Conclusion

It is widely recognized that construction projects and associated activities will persist in having a considerable effect on the global built environment. Therefore, this article explores the present condition of sustainability practices within the construction sector. An extensive study utilizing quantitative research methods was carried out to evaluate the importance of incorporating sustainability into construction projects in Nigeria, based on a survey of skilled construction experts. PRiSM aims to enhance the sustainability of the project management process. Any organization aiming to introduce a new set of measures or enhance their current scorecard should think about using the Performance Prism in the measures selection process.

The research advised, among other things, that the government needs to encourage sustainable building by offering incentives, implementing regulations, establishing guidelines, and promoting collaboration among stakeholders to share knowledge and best practices.

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Effect of Size and Age on Tax Aggressiveness of Listed Consumer Goods Firms in Nigeria

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Abstract
Tax aggressiveness has been seeing as a strategic scheme employed by companies to reduce tax fulfilment from the profit to the government which is achieved by leveraging on the loopholes in tax laws to downplay their profit with respect to the age and size of the company. Therefore, this study examined the effect of age and size on tax aggressiveness of listed consumer goods firms in Nigeria. The study used ex-post facto research design and data for the study were collected from the 20 sampled consumer goods firms in Nigeria for a period of 12 years (2012-2023). Data collected were analyzed using Variance Inflation Factor, the correlation matrix, and fixed regression technique which was selected through Hausman Test. According to the outcome from fixed effect model, firm size has a negative significant effect on BOTAXD but firm age has a positive insignificant effect on book tax difference. In conclusion, firm size negatively and significantly impacted tax aggressiveness but firm age positively and insignificantly impacted tax aggressiveness in Nigeria listed consumer goods firms. Therefore, it is recommended that in order to deter aggressive tax plans by consumer goods firms, government regulatory bodies and tax authorities should concentrate on the tax-saving strategies in consumer goods firms regardless of size and age of the organization with the expectation of enhancing tax revenue in Nigeria.

Key words: Company size; Firm age; Tax aggressiveness; Consumer goods companies; Fixed effect model

1.0 Introduction

Tax aggressiveness can be seen as a strategic scheme employed by companies to reduce tax fulfilment from the profit to the government which is achieved by leveraging on the loopholes in tax laws to downplay their profit within the realms of the tax law so as to attract cost from the society and tax authorities as a result of involving in tax aggressive behaviour. By involving in aggressive tax activities, companies have advantages of tax savings which generates wealth and cash flow to the organization, and wealth maximation to the shareholders. On the other hand, involving in aggressive tax activities is connected with reputational cost such as tax defaulter, socially irresponsible and agent of destruction because of unsupportive attitude to the government.

Most of the companies employed age and size as loopholed to circumvent and engage in tax aggressiveness. The size of the company is one of the likely factors that influences tax aggressiveness in company tax activities. According to Ogbeide et al, (2022), bigger companies typically face more regulations and, thus, pay higher taxes because of their increased exposure. That is larger enterprises are more visible and therefore less inclined to participate in tax-aggressive practices. On the other hand, bigger companies are more inclined to undertake more tax planning procedures and, thus, to avoid taxes since they have the resources to hire tax professionals for tax aggression to minimize tax liability. This is because practically every business would rather pay less in taxes or receive some tax savings.

The relationship amidst the firm age, and performance which dispensed tax aggressiveness cannot be underestimated. This upholds that companies acquire more experience as the firm ages is improved over time. It is observed that older firms are presumed to be advantageous during uncertainties and complexities than smaller and younger companies. Also, firm aging implies resources enhancement, and building up capabilities which invariably enhance firm performance. Additionally, the longer the companies have survived the competition among the same companies in the same line, the more is performance which in the long run enhances the tax fulfilment. Therefore, firm age has been employed by the organization circumvent the payment of tax. Similarly, large companies are enjoying economies of scale, loans accessibility, vast expertise and better funding more than the smaller companies.

The review of prior research, both domestic and foreign, revealed some gaps in the literature. To begin, the great majority of pertinent studies conducted in Nigeria were mainly restricted to the financial and non-financial sectors (Atu et al., 2018; Salaudeen and Eze, 2018; Salaudeen, 2017; Yahya and Yusuf, 2020); among others). Additionally, nearly all of the examined research by Nigerian researchers assessed tax aggressiveness using effective tax rate (ETR) but this study fills a vacuum by employing total book tax difference measurements. The involvement of panel data analysis to examine the effect of Age and Size on tax aggressiveness made the study unique among the extant literatures in Nigeria. Therefore, the study examines the effect of age and size on tax aggressiveness in Nigeria Manufacturing Companies.

2.0 Literature Review

2.1 Tax Aggressiveness

Tax aggressiveness is a carefully thought-out financial strategy used by individuals or businesses to lower their legal tax liabilities (Kibiya & Aminu (2019; and Adegbite and Fasina. 2019). This means reducing the wider tax burden by making intelligent choices about income, expenses, investments, and business arrangements. Tax aggressiveness's primary goal is to increase the effectiveness of taxes while preserving legal compliance. To achieve the best achievable tax outcome, this process often involves using tax law deducting expenses, rewards, and waivers in conjunction with strategic financial decisions (Adegbite & Adegbayibi, 2022).. According to Maigoshi and Tanko (2023) both people and companies need to practice effective tax strategy in order to enhance their financial well-being and long-term viability. Tax aggressiveness is a strategy used

by businesses to reduce their corporation tax liabilities and boost profits. This could mean exploring opportunities for international tax planning, utilizing current tax incentives and relief, and structuring business transactions to reduce taxes. Entrepreneurs may also examine factors like as the firm's size, industry regulations, and expansion objectives when determining the ideal organizational framework for their business (Jaffar et al., 2021). One important component is investment-related tax planning, which seeks to optimize profits while reducing the tax impact on investment earnings. Selecting tax-advantaged portfolios, strategically scheduling capital investment gains and losses, and implementing tax-effective strategies are a few examples of this.
Book Tax Difference is used to gauge tax aggressiveness. Book-tax differences, which arise from variations in tax legislation and accounting standards, are the discrepancies among the taxable earnings of a company as disclosed to tax regulators and its book income as stated in its financial accounts (Hutchens, 2019). Different sets of records are usually kept by businesses for tax and financial reporting purposes, which can lead to differences in how revenue, expenses, and other financial components are recorded. Book-tax discrepancies may result from issues like earnings recognition, depreciation schedules, and how particular expenses are handled. Realistic reporting of finances, tax compliance, and methodical decision-making all depend on an understanding and study of these disparities.

2.2 Company Size

According to the research and circumstances of this study, a company's size indicates its magnitude, or how big or tiny it is. Depending on their total assets or, if applicable, the number of workers, companies are typically categorized as either large or small. The total assets that a business uses for its operations are included in its size (Ogbeide et al., 2022). Furthermore, a company's size reflects the breadth and depth of its capacity for manufacturing alongside the variety of services it currently offers to clientele. The concept of economies of scale, which is ingrained in the conventional neoclassical view of a company, makes a company's size crucial when evaluating its success, according to Aladesonkanmi (2020). In the fiercely competitive business world, large companies have greater clout than their smaller competitors. Additionally, where competitiveness necessitates significant capital investments, businesses of a sizable scale might capitalize on a range of business-related opportunities. They are in a competitive position and have a higher probability of gaining the greatest profit because they have access to a multitude of resources. (Nworie & Mba, 2022).
Total assets comprise all resources that the company has obtained during previous transactions and have a chance of generate economic advantages in the future. According to Nworie et al, (2022), it also refers to a company's operational size, which is often calculated as the natural log of its entire assets. The size of a business is frequently used by tax legislation to provide tax breaks and incentives. The firm size of a commercial venture is the size of its organization and activities which is characterized with the amount or scale of work produced by a certain company. Several factors, such as a company's total revenues, typical sales scale, stock market valuation, and its total assets, decide whether it is considered large or tiny. Bigger entities likely to have more complex transactions and vice versa, and they are better capable of managing their tax obligations since they have more resources, taxation professionals, and a legal firm that can identify

tax law loopholes to reduce corporation tax payments. Consequently, companies take advantage of current tax breaks in order to engage in tax aggression (Dewi & Yasa, 2020). Company size is an index used to classify the size of businesses. The size of a corporation is determined by its total assets, sales, profit, tax expenditure, and other factors (Bojuwon et al, (2019). The measure of company size determines which group the company belongs based on the total assets owned by the company; large companies are more likely to be able to earn consistent earnings than small companies, and they also are inclined to have better resources for tax management.

Considering their assets and huge, consistent income, businesses will tend to evade taxes. The link between tax evasion and earnings would be strengthened even more if the firm size increases. This assertion is consistent with research by Adegbite and Bojuwon, (2019), which shows that tax revenue on tax aggressiveness is lessened by the size of the company.

2.3 Company Age

A corporation's "company age" is the number of years that have elapsed since it was initially formed or incorporated. This measure is used to estimate how long a business has been in operation. The amount of time that has passed since an entity's formation, or date of incorporation, is used to determine how old it is. Knowing a company's age allows one to evaluate its stability, experience, and prospective market effect. The company's age reveals cogent information, such as how well-managed it was in previous times, how agile it was in response to changing circumstances in the market, and how stable it was all around. A well-established business with years of operation is regarded to be aged or older, whereas a freshly founded business is frequently regarded to be infant or in its early phases (Nworie & Agwaramgbo, 2023). Many analysts, researchers and shareholders such as Athifah and Mahpudin (2021); Bashiru et al, (2020); and Chen et al. (2019) employed business age when evaluating the risk and possible return on an investment. More recent companies are unpredictable and more susceptible to changes in the market, whereas aging businesses may have a history of success, customer loyalty and breakeven analysis. Many industries and businesses may have varying values for company age. While some industries may have a higher concentration of well-established organizations, others may see a rapid influx of new businesses. Furthermore, age is just one of many criteria to consider when assessing a company's general well- being, competitiveness, and possibilities for the future in the business world

The age of the company is thought to have an impact on the possibility of changing accounting-based contractual results (Adegbite et al, (2019). The relationship between tax aggressiveness and a company's age are explained by political cost theory. However, based on the evidence that was available and compared to other countries, Etter-Phoya et al (2019) found that taxes aggressiveness, as an indicator for effective tax rate, was positively correlated with company age. In Indonesia, this implies that older enterprises had a greater effective tax rate. Another study by Masnaway (2019) considered company age as a factor that impacted the tax expense of private ownership enterprises in Spain.

2.4 Theoretical Framework

Learning Theory

This theory was propounded by wrights (1936) in order to clarify the connection amid firm age, size, and organization performance. This theory postulates that older organization learn from their experience than infant firms in emerging stages which invariably leads to organization performance. The learning theory stated further that the firm growth is explained and displayed by the experience attained and achieved over the periods of time (firm age) which dispense profitability where the tax liability is fulfilled (Okunbo & Oghuvwu, 2019). This theory is relevant to this study because it expatiates the connection amid companies' performance, age and company size. Company learns from the past experience so as to capture the current opportunity that generate profitability where tax liability is charged. The aging of the firm infers building up capabilities and resources which ensues firm performance in the long run. Furthermore, the longer the company survives, the more the company learning increase which invariably dispenses company's performance. Similarly, large companies benefit from better funding, economies of scale, vast expertise and access to loans than the smaller companies according to learning theory. The weakness of the theory is that it fails to pinpoint and lay mush emphases on the kind of training or learning that will be of benefits for the organization.

2.5 Empirical Review

Firm size and Tax aggressiveness

Masnawaty (2019) examined how tax avoidance was impacted by profitability and firm size in manufacturing companies from 2014 to 2018. Data were collected through annual reports of selected manufacturing companies from 2014 to 2018. The data collected were analysed with multiple regression and correlation analysis. The study discovered that tax-aggressive behavior is influenced by both size of company and profitability in Nigeria manufacturing companies.

Athifah and Mahpudin (2021) investigated the impact of liquidity, company size, and independent commissioner on tax aggressiveness in the food and beverage industry, a group of consumer goods companies listed on the Indonesian Stock Exchange. The study employed an ex-post facto research design and used released financial statements of consumer goods companies for the 2014–2018 period. The study used multiple regression analyses as a data analysis technique, and the results showed that firm size had a significant effect on tax aggressiveness while liquidity had no significant effect on tax aggressiveness. The findings may not be applicable in Nigeria, though, as the research was centered on Indonesian publicly traded companies.

A study by Muhamad et al, (2020) sought to determine how capital intensity affected tax aggressiveness as well as how leverage and capital intensity simultaneously affected tax aggressiveness in mineral extraction companies listed on the Indonesia Stock Exchange. The descriptive quantitative method was applied. For the years 2014–2018, information was gathered from 45 extractive industries. Multiple linear regression and descriptive statistics were used to analyze the data. The study found that tax aggression was influenced by capital intensity. However, because the study was focused on Indonesian businesses, it was unable to determine the exact relationship between capital intensity and tax aggressiveness. Thus, employing Nigerian publicly traded companies, the present research determined a more accurate and lucid relationship between capital intensity and tax aggressiveness.

With market performance acting as a control factor, Santini and Indrayani (2020) investigated the relationship between tax aggression and profitability, liquidity, leverage, capital intensity, and business size. Structural Equation Model (SEM) path analysis and self-test using AMOS software were the analytical methods utilized in this descriptive study design. 43 banks that were listed on the Indonesia Stock Exchange between 2014 and 2018 provided financial statements for the study. Return on Asset (ROA) was used as a proxy for profitability, current ratio for liquidity, debt to equity ratio (DER) for leverage, capital intensity (CAP), size (total assets), Tobin's q for market performance, and effective tax rate (ETR) for tax aggressiveness. The study's findings showed that tax aggression is influenced by firm size, capital intensity, leverage, profitability, and liquidity. The study used foreign based data whose outcome cannot cut across Nigeria. The recent research work was anchored on quoted companies in Nigeria.

Sihombing & Mulyadi, (2023) analyzed the effect of company size, profitability and leverage variables on tax aggressiveness in Indonesia manufacturing companies listed from 2015-2019. Data collected from 52 companies were analysed with Moderated Regression Analysis (MRA). The results displayed that profitability and leverage had significant effect on tax aggressiveness but company size had no significant effect on tax aggressiveness. Nathania et al., (2021) analyzed company size and leverage effect on Indonesia tax avoidance from 2016-2018. The data collected from 21 companies which was selected purposively were analysed using Structural Equation Modeling (SEM). It was discovered that Company size and Debt financing significantly affected tax avoidance in Indonesia manufacturing companies.

Amah et al., (2022) empirically examined the effect of firm size on tax aggressiveness on Indonesia restaurant, transportation, hotel and tourism from 2013- 2019. The data garnered from the selected companies from 2013 to 2019 were analysed with regression analysis. The results indicated that firm size possessed no significant effect tax aggressiveness.

Firm Age and Tax aggressiveness

Okerekeoti & Ezejiofor, (2022) determined firm age effect on the tax aggressiveness of Nigeria deposit money banks. The study collected data from thirteen Nigeria quoted deposit money banks quoted were analysed with regression analysis. It was discovered that Firm age has insignificant effect on book tax difference of Nigeria deposit money banks. The study finally concluded that firm age has no significant effect on tax aggressiveness in Nigeria deposit money banks.

Mita and Indriani (2020) examined the impact of firm size, age, sales growth, and revenue on tax evasion in pharmaceutical companies from 2016 to 2019. The data collected from the annual reports of pharmaceutical companies from 2016 to 2019 were analysed with regression analysis. The study discovered that when corporate governance is added as a moderating component, aggressive tax behavior cannot be explained by any business attribute.

Using oil and gas companies from 2012 to 2018, Onatuyeh and Odu (2019) examined business size, firm age, accounting income, and financial leverage as comprehensive determinants of tax aggressive behavior. The data was analyzed employing regression analysis. According to the research, tax-aggressive behavior can be explained by corporate size, leverage, and financial leverage.

With the board of commissioners' expertise as a moderator, Yoseph et al. (2020) examined the relationship among tax evasion, capital intensity and profitability. The quantitative method was used as the research design. The 2016–2018 yearly statements of industrial companies listed on the Indonesia Stock Exchange included secondary data. With the aid of panel regression data analysis used, the findings discovered that whereas capital intensity had no discernible impact on tax evasion, profitability had a considerable impact. According to this study, the impact of profitability on tax evasion is lessened by the board of commissioners' proficiency. However, because the study is foreign and based in Indonesia, Nigeria cannot extrapolate its findings.

Madugba et al. (2020) examined the tax-saving practices of Nigerian businesses from 2012 to 2018 in order to determine the impact on firm age. Descriptive statistics and regression test were employed to collect and analyse data respectively. The findings showed that while the effective tax rate has a negative and negligible association with firm age, interest tax savings behaviors have a negative but significant relationship. According to the study's findings, listed firms in Nigeria exhibit higher tax saving practices when their company age and size is less, and vice versa.

Employing regression analysis, Chen et al. (2019) examined the connection between tax evasion and firm attributes for companies traded on the Athens Stock Exchange between 2011 and 2015. Profitability, leverage, liquidity, return on capital employed, and company age were the characteristics that were examined. Ownership concentration, auditing firm type, and board autonomy were the corporate governing factors. According to the study, corporate governance factors have no bearing on tax planning practices.

Bashiru et al, (2020) investigated how listed Nigerian conglomerate businesses' tax planning was affected by corporate governance characteristics. Ex-post facto research methodology was used in the study, which used panel data from listed conglomerate businesses' annual reports and accounts over a five-year period (2014-2018). The panel regression technique was used to evaluate the data. The Hausman test, which is was used to determine whether to use random effect estimate or fixed effect assessment. The findings of the random effect assessment model show that the effective tax rate and business age are significantly correlated negatively.

3.0 Methodology

This study employed expo-facto research design to examine Effect of Size, and Age on Tax Aggressiveness of Listed consumer goods firms in Nigeria. The population of interest in the research comprises of a number of carefully chosen and quoted Nigerian consumer goods companies. The consumer products manufacturing companies quoted on the Nigeria Exchange Group (NGX) provided secondary data for this research in the form of financial statements and the NGX website (https://ngxgroup.com). This analysis spans twelve (12) financial years, from 2012 to 2023. The data were sourced from annual reports (income statements and the statement of financial position) of Listed consumer goods firms in Nigeria from 2012 to 2023. Descriptive and Correlation analysis as well as Panel Data Analysis (pooled regression, fixed effects regression, random effects Generalized Least Square (GLS) regression) were employed for the analysis.

Table 1 Variables Measurement

VARIABLE	PROXIES	VARIABLE CLASS	MEASUREMENT
Book Tax Difference	BOTAXD	Dependent	$PBT - \frac{CTE}{STR}$
Company Size	SIZE	Independent	Natural log of total asset
Company Age	AGE	Independent	Current year less year of incorporation

Source: Researcher's compilation (2025)

3.1 Model Specification

The study adapts and modify the model of Isah et al. (2022) and the original model as well as the modified model are presented as follows.

Tax Aggressiveness = *f*(firm size, firm age, μ) 1

The general econometric models for the study are specified thus:

Econometric Model:

$BOTAXD = \beta_0 + \beta_1 SIZE + \beta_2 AGE + \varepsilon$ 2

Fixed effect model

$Yit = \beta Xit + \alpha i + uit$

$BOTAXD\ it = \beta_0 + \beta_1 SIZE_{it} + \beta_2\ AGE_{it} + y_2E2 + \ldots + ynEn + uit$ 3

$BOTAXD\ it = \beta_0 + \beta_1\ SIZE_{it} + \beta_2\ AGE_{it} + y_2E2 + \ldots + ynEn + \delta 2T2 + \ldots + \delta tTt\ uit$ 4

Where:

β0 - represents the constant
β1 - β4 - the coefficient of the parameter estimate
BOTAXD - Book Tax Difference (Proxy for Tax Aggressiveness)
SIZE - Company Size
AGE - Company Age

4.0 Results and Discussion

Correlation Matrix

	BOTAXD	AGE	SIZE
BOTAXD	1.0000		
AGE	-0.2186*	1.0000	
SIZE	-0.0414	0.1128	1.0000

Source: Author's Compilation (2025)

The correlation matrix was examined to determine the relationships among the following variables BOTAXD, AGE and SIZ. It was observed that BOTAXD has a moderate negative correlation with AGE, with a coefficient of -0.2186*, suggesting no significant collinearity between BOTAXD and AGE. Also, SIZE has negative correlation with BOTAXD (-0.0414), indicating absence of collinearity. Therefore, it would be wise to conduct a VIF (Variance Inflation Factor) test to assess collinearity among the variables based on the correlation matrix results.

Table 3 VIF Test

VARIANCE	VIF	1/VIF
SIZ	1.01	0.987275
AGE	1.01	0.987275
MEAN VIF	1.01	

Source; Authors' Compilation (2025)

Multicollinearity was tested using the Variance Inflation Factor (VIF) test; the results show that multicollinearity is not a significant concern for the variables used in this study, as all of the VIF values in Table 3 are below the critical threshold of 10. The highest VIF value is 1.01 for SIZ followed by 1.20 for AGE. The mean VIF for all variables is 1.01, which is significantly below the level of concern.

Table 4: Impact of company size and age on tax aggressiveness in Nigeria quoted consumer goods companies

BOTAXD	(1) Pooled Regression	(2) Fixed Regression	(3) Random Regression
SIZE	-2.22704^{***}	-1.69024^{***}	-1.83342^{***}
	(0.001)	(0.007)	(0.003)
AGE	-6.11452	6.93872	3.44684
	(0.791)	(0.748)	(0.873)

_cons	37.24467***	22.97959*	26.78816**
	(0.007)	(0.079)	(0.041)
N	240	240	240
R^2	0.048	0.032	
adj. R^2	0.540	-0.524	
Hausman Test		**Prob>chi2 = 0.0096**	

***p*-values in parentheses**
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
Source; Authors' Compilation (2025)

According to the Hausman test Table 5 which chose fixed effect over Random effect model because of Prob>chi2 = 0.0096 which is below 0.05 significant level. Therefore, fixed effect model is reported. According to Fixed effect model as appeared in Table 4 column 2, a percentage increase in the firm size reduces BOTAXD by approximately 1.69%, that is Firm size (SIZ) has a negative significant effect on BOTAXD at the 0.05 level. Firm age (AGE) has a positive effect on BOTAXD, that is a percentage increase in firm age (AGE) increases BOTAXD by 6.9% but is insignificant.

4.0 Discussion of Findings

This study examined the effect of age and size on tax aggressiveness of Listed consumer goods firms in Nigeria. The study used ex-post facto research design and data for the study were collected from the 20 sampled consumer goods firms in Nigeria for a period of 12 years (2012-2023). Data collected were analyzed using Variance Inflation Factor, the correlation matrix, and fixed regression technique which was selected through using the Hausman Test. According to the outcome from fixed effect model, firm size has a negative significant effect on BOTAXD. This is generally in line with the idea that companies with more assets have a lower tax aggressiveness because their size puts them under scrutiny from the tax and political authorities, which makes them reluctant to reduce their book tax difference. The outcome agrees with the conclusions of Oyeleke et al. (2016); Tanko, (2023); Santini, & Indrayani, (2020); Salaudeen, & Eze, (2018); Pratama, (2017); and Onatuyeh, & Odu, (2019) but discarded the conclusions of Fatimah, et al (2021); Jeroh, (2020); Dewi, et al (2020); and Kibiya & Aminu, (2019). Thus, the alternative hypothesis, according to which tax aggression in Nigerian listed consumer goods companies is significantly influenced by company size.

Company age has insignificant positive impact on tax aggressiveness of consumer products companies listed in Nigeria. Older companies may accumulate losses, tax credits, or other deferred tax items over time. These deferred tax items may have a positive impact on the book tax difference because they are acknowledged or utilized during the span of the business's existence. Since they have fewer accumulated tax items, younger organizations may be more aggressive with taxes. Older businesses have stronger resources and connections for lobbying and more clever tax preparation than younger ones. As a result, companies often prepare their taxes aggressively in an attempt to remain competitive. This contradicts the findings of Maigoshi, & Tanko, (2023); Jeroh, (2020); but confirms those of Aladesunkanmi (2020); Adegbite, & Bojuwon (2019); Bojuwon et al, (2019); Yahaya, & Yusuf, (2020); Kibiya &Aminu, (2019); and Fatimah, et al (2021).

5.0 Conclusion

This study examined the effect of age and size on tax aggressiveness of Listed consumer goods firms in Nigeria. The study used ex-post facto research design and data for the study were collected from the 20 sampled consumer goods firms in Nigeria for a period of 12 years (2012-2023). Data collected were analyzed using Variance Inflation Factor, the correlation matrix, and fixed regression technique which was selected through using the Hausman Test. According to the outcome from fixed effect model, firm size has a negative significant effect on BOTAXD. This is mostly in line with the idea that companies with more assets tend to be less desperate in tax aggressiveness. The implication is that the firm size which is embedded with noncurrent assets is entitled to capital allowance. The higher the company expands, the more are the capital allowance which are allowable during tax computation which invariably reduces their desirous tax aggressiveness. But firm age has a positive insignificant effect on book tax difference in Nigeria consumer goods firm. Age is irrelevant to the book tax difference. In conclusion, firm size negatively and significantly impacted tax aggressiveness but firm age positively and insignificantly impacted tax aggressiveness in Nigeria listed consumer goods firms. Therefore, it is recommended that in order to deter aggressive tax avoidance plans, government regulatory bodies and tax authorities should concentrate on the tax-saving strategies consumer goods firms, regardless of size and age of the organization with the expectation of enhancing tax revenue in Nigeria.

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