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EDITORIAL

Human capital is the key to economic development in the contemporary world. This influenced Yusuf et al to conduct study that examines relationship between human capital development and performance of manufacturing firms in Kano State, Nigeria. Based on the findings, the study recommends manufacturing firms to institute mandatory on-the-job training and internal seminar programs to enhance skills, foster continuous learning, and enhance overall firm performance. However, Project Based Learning is one of the strategies for skill enhancement. As such, Isa et al examine the application of Project Based Learning (PoBL) in enhancing entrepreneurship skills of construction technology education (CTE) students at colleges of education. They conclude that inappropriate instructional approaches are responsible for CTE students' deficient in entrepreneurship skills. Findings from the result of the study revealed 21st century skills, group collaboration, autonomous learning, presentation and assessment are among the PoBL components suitable for enhancing entrepreneurship skills of CTE students at COEs. Therefore, the study recommends restructuring the curriculum of Colleges of Education to incorporate PoBL as well as give much consideration to its implementation by stakeholders responsible for policy formulation and implementation on NCE program in Nigeria.

Advocating for 'sustainable environment' is intensified in today's world of business, due to the challenges facing global environment. In view of this, Rufa'i et al investigate relationship between environmental sustainability orientation and environmental performance of small and medium enterprises (SMEs) in Katsina State, Nigeria. Results of the study indicate that specific dimensions of environmental sustainability orientation have varying effects on SMEs' environmental performance.

Vocational skill is of paramount importance. Hence, Magem et al study the imperative of vocational skills acquisition programme for sustainable development in contemporary Nigeria. The paper identified lack of adequate and state-of-the-art training facilities and equipment, poor funding of Vocational Skills Acquisition (VSA) programme; poor remuneration, acute shortage of vocational instructors and poor public impression and apathy to VSA are some of the challenges facing vocational skills acquisition programme in the country. The paper therefore, concluded that achieving sustainable development in Nigeria depends on putting up mechanisms to ensure a strong vocational skills acquisition programme owing to its potential for job creation and poverty reduction, among others. The study recommends government and private sector to collaborate and invest in the modernization of training facilities. Meanwhile, government should prioritize the allocation of funds to vocational education within the national budget.

Child mortality has been a challenge to developing economies. Thus, Haladu et al's investigation focuses on modeling and forecasting Nigerian under-five mortality and its related factors using supervised learning algorithms. The study concludes that random forest model provides better predictive power in term of forecasting associated factors of under-five mortality in the study area.

Entrepreneurship and artificial intelligence (AI) have dominated today's affairs. This instigates Abiodun to assess the effect of AI and big data on entrepreneurial decision making of small and medium enterprises in Lagos, Nigeria. The result suggests AI's potential of being the most important factor for generating meaningful insights for entrepreneurial decision-making. Therefore, the study recommends industry leaders and entrepreneurs to take the advantage of wide range of AI's applications, in order to enhance decision-making process for the benefit of society and the firms. Nonetheless, no matter the level of technological advancement of a firm, motivated and satisfied employee is indispensable. Considering this, Muhammad and Umar examine the effect of intrinsic motivation, extrinsic motivation and job satisfaction on organizational citizenship behavior (OCB) among bank employees in Kano Metropolis. They

recommend banking industry to use diverse motivational strategies to improve ability of staff, pay attention to creativity and innovation, and to support spontaneous performances, the banks should focus on improvement of morale, job moral sense, empathy and supportive processes, through presentation of rewards, among others.

Employee turnover is one of the fundamental business challenges. To address this menace, Ideh and Ofune try to establish relationship between organizational climate and employee turnover intention in selected manufacturing companies in Asaba, Delta State, Nigeria. The findings show that rewards, benefits and management styles have significant influence on employee turnover intention. A major recommendation of the study is that organizations should create positive and strong organizational climate, so that employees would be more committed and engaged and hence, minimize the thoughts of quitting.

Organizational wellbeing and survival depend on financial performance. On account of this, Ibrahim and Samaila examine the influence of board attributes on financial performance of listed consumer goods companies in Nigeria. Findings reveal that board size, board independence, managerial ownership and gender diversity have a significant influence on the financial performance of consumer goods companies in Nigeria. Therefore, the study recommends skilled, experienced and expedient board size which will help reduce conflicting interests in boards. In addition, managerial ownership and improved gender diversity.

Financial may not necessarily be formal. To explore other options, Dalhat investigates the extent to which informal financial services help develop women entrepreneurship in Katsina, Katsina state. Results of the study revealed significant relationship between loan from friend/relative, Adashe (daily contributions), rotational saving, and cooperative societies. Based on the findings, women entrepreneurs need to look for effective informal sources of finance to support new ideas, experimentations, and processes to create new services, products or advanced technological processes. However, women entrepreneurship is not free of challenges. Consequently, Yusuf appraises the challenges of particularly Muslim women's participation in small scale businesses in Gombe, Nigeria. Yusuf discovers mixed gender, unveiling, inadequate capital, lack of favourable environment, lack of access to Islamic micro-finance credit facilities as the major challenges for women economic participation in Gombe, Nigeria. Therefore, the study majorly recommends Islamic banks and other financial institutions to provide facilities for women small scale business owners in order to add to their capital.

In their contribution, Anuforo et al analyze the moderating effect of risk management committee on the relationship between corporate governance mechanisms and financial reporting quality among listed nonfinancial firms in Nigeria. It is revealed that risk management committee has significant moderating effect on the relationship between board gender diversity, board financial expertise and financial reporting quality among listed non-financial firms in Nigeria. Hence, from the findings, the study concluded that risk management committee is indeed a viable governance strategy to improve financial reporting quality through the scrutiny of the assessment and disclosure of risks inherent in a company. Therefore, it is recommended that non-financial companies should strengthen their corporate governance system through the establishment of risk management committee to dissect the vulnerable areas that might threaten the going concern of the companies.

Umar et al contribute by studying the food insecurity vulnerability of smallholder rice farming households in North West of Nigeria. According to the finding, 55.29% of smallholder rice farmers are vulnerable to food insecurity with 68% average vulnerability. Gender of household head, household size, annual farm income, type of seeds, and price-related shocks are statistically significant in determining food insecurity vulnerability. Specifically, efforts should be made to reduce household size through family planning initiatives, promote the use of

improved seeds, and provide support to farmers to mitigate the impact of natural shocks such as flooding and crop diseases.

Waste has become an escalating issue in Kano, due to widespread use of polymeric materials. To combat this problem, Bello et al develop innovative strategies to divert plastic waste away from landfills into brick manufacturing process as a sustainable waste management solution and economic enhancement.

On his part, Abang reviews empirically the contribution of entrepreneurial orientation dimensions on the performance of grain based food (GBF) enterprises in the Federal Capital Territory (FCT) Abuja. Based on the findings, the paper recommends the promotion and a sustainable entrepreneurial culture and competency among small business holders especially GBF SMEs in the study area to enhance their business performance.

Yero surveys the mediating role of income generation, in the relationship between job creation and poverty alleviation among SSEs in Kano and Niger states. Results show that income generation best predicts poverty alleviation and it is proved to have significant mediating effect on alleviating poverty of the SSEs owners.

Garga's contribution centers on studying the extent to which product attributes determines brand switching behavior of smart phones users among students of tertiary institutions in Yobe State, Nigeria. The study recommends companies to shift ground on seeing how to better up tangible attributes, so as to enhance the purchase decision and then deter consumers from switching from one smart phone to another.

According to Ononye and Moluno, the effect of environmental strategy on economic performance has been established in extant literature, but what is not fully known is how environmental strategy affects economic performance. Therefore, they investigate the effect of environmental strategy on economic performance, given the quasi-moderating variables of organizational learning and organizational innovation capability. The study concludes that environmental strategy affects economic performance, with organizational learning and organizational innovation capability serving as quasi-moderators. The study presents practical implications to enhance the conditions affecting the environmental strategy and economic performance nexus, which benefits organizational management.

Danjuma and Ugwudioha investigate the impact of dividend policy on the financial performance of listed consumer goods companies in Nigeria. The results provide insights into the factors that affect earnings per share in terms of dividend-related variables. They suggest that the level of dividend coverage ratio is an important factor to consider when analyzing and predicting earnings per share. However, dividend stability does not seem to have a significant impact on earnings per share. The study recommends companies to increase the amount of dividend per share paid to shareholders as this may lead to improved company performance.

Maigari et al assess the influence of Islamic banking on micro scale entrepreneurship in Nigeria. The study recommends Islamic banks to enhance their implementation of interest-free loans, deposit contributions, and profit-sharing schemes to build customer trust and attract more clients in Islamic banking.

Mokobia opines that poorer population experience worse health outcomes. Hence, she recommends that, to improve health outcomes among Nigerians, government should intensify its fight against the multidimensional poverty level in Nigeria, encourage school enrolment and support more people to be trained as healthcare professionals.

Iyamabhor et al seek to understand relationship between corporate governance, risk exposure and its management in the context of accountability and transparency in the Nigerian banking system. The study shows many Nigerian banks lack transparency and accountability. Among other things, it is suggested that the management of Nigerian banks accord corporate governance the place it deserves in the management of bank activities.

Exchange rate has affected the Nigerian economy. Thus, Hassan analyzes the effect of exchange rate volatility on economic growth in Nigeria using annual time series data over the period of 40 years from 1981-2021. The study concluded that, exchange rate volatility granger cause and can explain changes in economic growth in Nigeria. Based on the findings, it is recommended that a managed floating exchange rate regime should be supported, market-determined rates be encouraged allowing market forces to play a significant role in determining exchange rates.

As it is often said, 'education is the key to success,' Idris and Pulife seek to find the degree of relationship between entrepreneurship education and entrepreneurial intentions of business education students in Colleges of Education in Kogi State. Based on the findings, the study recommends Colleges of Education authorities to assist business education students that indicate intention to become entrepreneurs while in school and after graduation through incubator programmes.

Nigeria is ranked the largest producer of cashew nuts in Africa and consistently ranking within the five global producers. However, its productivity has remained far below the potential. Therefore, Mahmud et al analyze the trend, instability, and decomposition of cashew nuts production in Nigeria for three periods namely Period I (1981-2021), Period II (1981– 2001), and Period III (2002–2021). To stabilize cashew production in Nigeria, the study recommends for efficient resources allocation, coupled with flexible production systems.

The contribution of Yakubu et al in this edition is based on comprehensive analysis of the political economy of social assistance and poverty reduction policy-making in Nigeria between 2020 and 2024. Through combination of policy review, stakeholder analysis, and impact assessment, the study provides insights that inform the design and implementation of more effective social assistance policies in Nigeria. Ultimately, the research contributes to the ongoing efforts of poverty alleviation in the face of complex and interconnected socio-economic challenges.

In conclusion, this edition of BAJAES sets to provide solution to the socioeconomic challenges of the nation, through the improvement of the general environment for business conduct and economy.

Editor-in-Chief

Professor Bala Ado K/Mata

HUMAN CAPITAL DEVELOPMENT AND PERFORMANCE OF MANUFACTURING FIRMS IN KANO STATE, NIGERIA

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Abstract

This study explores the interplay between human capital development and performance in manufacturing firms situated in Kano State, Nigeria. Employing a quantitative survey methodology, the research administered a self-administered questionnaire to 333 employees and utilized descriptive statistics and regression analysis for data analysis and hypothesis testing. SPSS version 23 facilitated the analysis process. The findings revealed that all constructs of human capital (training and development, skill and expertise, knowledge management, and education) significantly influence the performance of manufacturing firms in Kano State. The study recommends that management in manufacturing firms institute mandatory on-the-job training and internal seminar programs to enhance skills, foster continuous learning, and enhance overall firm performance. Emphasis is placed on the importance of tailored human capital development strategies for sustained growth and competitiveness. In light of these findings, the study recommends strategic shift in management practices within manufacturing firms, underscoring the critical importance of customized human capital development strategies for sustaining growth and competitiveness in the dynamic business environment of Kano State.

Key Words: human, capital, development, organization, performance, manufacturing, firms

Introduction

Human Capital Development (HCD) is a set of practices that see individuals as resources whose present esteem can be estimated and whose future can be upgraded through venture. HCD deals with the abilities of human being to accomplish altogether abnormal state of organizational goals (Chika & Chike, 2021). It is an arrangement of practices, identified with individual asset management, particularly in the classifications of workforce securing, management and advancement. Notwithstanding, HCD incorporates workforce arrangement, recruitment or employee training. Moreover, research evidences show that manufacturing industries in Nigeria are underperforming, majority of the employees of these companies have switch jobs to more promising industries like the service and retail sectors (Chika & Chike, 2021).

The organizational performance has been a key element in the successful transformation of most economies that sustained rises in their

per capita incomes and economic development. Moreover, organizational performance serves as an engine for modernization, creation of skilled jobs as well as generation of employment opportunities (Alqershi, 2020; Ebringa & Okafor, 2015). Afrah (2016) defined organizational performance as the degree to which an organization realized its goals. In addition, organization pursues multiple goals and such goals must be achieved in the face of making progress. Furthermore, the attribute of organizational performance includes Quality of accounting information, performance evaluation, internal control and facilitating company's transaction (Chiemeka, Ashari & Mukhtar 2018; Chika & Chike, 2021).

The uncertainty and dynamism in competitive marketplaces force organizations to reconsider their tactics to achieve long-term competitive advantages (Linden, 2021). The key to achieving and sustaining the competitive edge is to own and create unique resources, which are hard to duplicate. Such resources are primarily found in

organizations' HCD, which is based on their employees' competencies, including knowledge, skills, expertise, and capacities (Mubarik *et al.*, 2020). HCD skills and capabilities can help increase the organization's performance. More specifically, linking HCD knowledge, skills and capacity with organizational performance has attracted scholars' attention over the last two decades (Harris & Brown, 2021).

Thus, massive investment and expenditures must be made on capacity development programme. This includes both on the job training such as job rotation, apprenticeship, and mentoring. Organizations continually train and retrain their human resources as this helps to sharpening their skills, capabilities and competencies for improved productivity. Further, it is highly recommended that efforts in this regard is sustained and improved in line with employee training needs (Brimah, *et al.*, 2020). Whereas, increase in organizational performance is required to facilitate efficient business organization, HCD is the determinant of organizational performance. Therefore, this study evaluates the impact of HCD on the organizational performance of manufacturing industries in Kano State.

Statement of the Problem

The Central Bank of Nigeria (2023) reported that the manufacturing production index decreased to 184.8 (2010=100) in the fourth quarter of 2023, showing a fall of 0.7 per cent, compared with 186.1 points recorded in the preceding period. Similarly, Capacity utilisation declined to 55.1 percent, a fall of 0.8 percentage points from the preceding quarter. The decline in manufacturing activities was majorly attributed to the poor performance of sector within the period, following the rising cost of production and high inventory from the third quarter.

Organizations within Nigeria, including those in the manufacturing sector in Kano State, have faced challenges in achieving optimal levels of performance over the past two decades. Notably, manufacturing performance in Nigeria lags behind other

African countries such as Ghana and South Africa, indicating a substantial disparity in economic output within the region (World Bank, 2020).

The knowledge, skills, and abilities transferred within an organization through HCD are crucial to profitability. Low levels of tertiary education, such as low high school enrollment rates in Nigeria of 44%, result in low levels of HCD, which threaten the transfer of knowledge, skills, and abilities in organizations (Olopade *et al.*, 2019).

HCD deficiencies in Nigerian organizations are considered a deterrent to profitability. This has had an impact on Nigeria, which ranked 152 out of 157 countries in productivity (World Bank, 2020). The general business problem is that low levels of HCD negatively impact the productivity and profitability of an organization. The specific business problem is that some leaders of organizations listed on the Nigerian Stock Exchange may be unaware of the relationship between HCD, productivity, and profitability.

Most studies conducted on the relationship between human capital and manufacturing organizations used training and development and experience as a factor influence manufacturing (Chika & Chike, 2021; Akinlo & Olayiwola, 2017), some used expertise and education (Chigozie *et al.*, 2018; Sogue & Akçaoz, 2018) and other studies employed knowledge management and skill (Okoye, *et al.*, 2020; Akinlo & Olayiwola, 2017). Therefore, this study filled the gap by employing all the variables (training and development, education, expert and skill, experience and knowledge management) to examine their impact on manufacturing companies in Kano state.

Objectives of the Study

The overall objective of the study is to evaluate the effect of HCD and performance of manufacturing firms in Kano State. The specific objectives include;

- i) To determine the effect of training and development of manufacturing firms in Kano State.
- ii) To determine the effect of knowledge management (KM) of manufacturing firms in Kano State.
- iii) To ascertain the effect of skills and expertise on manufacturing firms in Kano State.
- iv) To evaluate the effect of education on the performance of manufacturing firms in Kano State.
- v) To determine the effect of experience on manufacturing firms in Kano State.

Research Hypotheses

The following hypotheses are hereby formulated to guide the study:

- H₀₁:** There is no significant effect of Training and Development on performance of manufacturing firms in Kano State.
- H₀₂:** knowledge management (K&M) has no significant effect on the performance of manufacturing firms in Kano State.
- H₀₃:** Skill and Expertise (S&E) has no significant effect on the performance of manufacturing firms in Kano State
- H₀₄:** Education has no significant effect on the performance of manufacturing firms in Kano State
- H₀₅:** Experience has no significant effect on the performance of manufacturing firms in Kano State.

Empirical Review of Related Literatures

Attia, et al. (2022) investigated the impact of human capital capacity, human capital knowledge, and human capital skills on organizational performance in the hospitality industry. Data was collected through survey questionnaires from 356 managers working in small and middle-level hotels located in the four districts of Saudi Arabia. The study used convenience sampling, and the data analysis method was partial least square structural equation modelling. Results of this study demonstrate that human capital capacity, human capital knowledge and human capital skills have a significant positive relationship with organizational performance. Results also confirmed a moderation effect of innovative

leadership between human capital knowledge and organizational performance. However, the moderation effect of innovative leadership between human capital capacity and human capital skills with organizational performance was not confirmed. Finally, the theoretical contribution, practical implications and future commendations are also discussed.

Okoye, Xiaoxian and Yongsheng (2022) examined the effect of HCD on the Performance of Small and Medium-Scale Enterprises in the Southeast Region of Nigeria. Specifically, ascertain the effect of employed training and evaluate the effect of skills acquisition on the organizational performance of Small and Medium-Scale Enterprises in the South-east Region of Nigeria. The study used a survey research design. Semi-structured interviews were employed to collect data on the issues of HCD in SMEs to understand the problems that affect their performance. The study adopts primary data. The data were presented in frequency, percentages, and mean tables and analyzed using the t-test statistical tool. The result shows that, the z-test with a z-statistic value of 31.23 and associated probability value of $0.0000 < 0.05$ shows that employed training has a significant positive effect on organizational performance while the z-test with a z-statistic value of 30.27 and associated probability value of $0.0000 < 0.05$ shows that skills acquisition has a significant positive effect on the organizational performance. we conclude that SMEs in Nigeria can attain significant improvement in both their financial and non-financial performance if adequate resources are invested in developing their human capital; especially through training, and skills. We recommended that the direction for HCD and organizational performance should consider measuring some additional constructs apart from training, and skills.

Onoriode (2022) evaluated the effect of human capital development cost on the firm financial performance of listed manufacturing companies in Delta State between the 2014 - 2018 financial years. Specifically, it assessed

the extent to which human capital investment cost affects the financial performance of firms and it also looks at how human welfare cost impinges on firms' financial performance of listed manufacturing firms in Delta State. A longitudinal research design was adopted and the data collected were analysed using descriptive and inferential statistics. Secondary data, the panel in nature, were gathered from annual reports and audited accounts of these firms that were selected using a stratified sampling technique. The results revealed a significant influence and positive relationship between Human capital investment, welfare cost and financial performance of listed manufacturing companies. Based on the results and discussion, the study concluded that the business environment is becoming complex with rapid information technology and socio-cultural flux. It also, affirmed that manufacturing firms should invest in human capital development to be able to have a competitive edge over competitors to achieve wealth maximization objectives. Consequently, this study recommends that the management of manufacturing firms operating in Delta state should increase their investment in human capital as an increase may positively impact their financial performance.

Ezekwesili and Ezejiofor (2022) examined the effect of human capital investment on financial performance of deposit money banks listed on Nigeria stock exchange. Ex-post facto research design was adopted. Data were extracted from annual accounts of the selected banks and were tested with regression analysis with aid of E-view 9.0. This study revealed that human capital investment has not positively and significantly affected return on capital employed of listed deposit money banks in Nigeria. The study therefore recommended that organizations should put in more financial resources or sources of investments in the human resources and personnel management in order to encourage the employees on the jobs thus enhancing

specialization and positive influence on financial performance.

Abdulwasea, (2022) investigated the relationship between human capital and improvements in organizational performance in Yemeni commercial banks operating in Sana'a. The individual human capital dimensions such as knowledge, experience, skills, innovation, and employees' morale were taken as human capital variables. A quantitative methodology was used, and a Likert-scale questionnaire was distributed to collect the data. A combination of convenience and random sampling techniques was adopted to distribute the questionnaire to eight banks and 162 employees of these banks. A descriptive approach was used to analyze the data statistically. The results indicated that all the human capital factors had a varying level of practical effect on the organizational performance and all of these were statistically significant. Overall, 76.4% change in performance was observed if human capital elements were employed effectively. Each element such as knowledge, experience, skills, innovation, and employees' morale had a varying level of positive impact on performance as observed. It is recommended to adopt and put in place knowledge and skills improvement systems in organization to achieve a sustained organizational growth.

Brimah, Olanipekun, Olorunlambe, and Aisha (2020) examined the dynamics of human resource development strategies in enhancing employees' performance. The study adopted a survey research design. The study population comprised of thirty members of staff of Sobi FM, Ilorin. Primary data was collected through a structured questionnaire. Findings of the study revealed that human resources development strategies have a significant impact on employees' performance.

Patrick, Assaad and Udo (2020) examined how developing human capital can have a direct positive effect on operational performance. The case study method is used to address the sustainability issues a Lebanon-

based retail e-commerce company is facing. We utilize the socio-economic qualimetrics methodology to discuss the corporate change from within the enterprise at all levels and with the contribution of all the participants in the firm. The findings of this intervention research contribute to the literature insofar as enhancing the social capital of a retail e-commerce organization positively impacts its performance.

Tagha, Kwahar and Shillie (2020) investigated the effect of human capital development on the Survival of Small and Medium Size Enterprises in the Northwest Region of Cameroon Multiple Regression was used for data analysis. The results revealed that human capital development has a significant positive effect on the Survival of SMEs in the Northwest Region of Cameroon with on-the-job training being the critical contributor to SMEs Survival in the Region. But wrong measurements of variables invalidate the results of the study.

Okochi *et al.* (2021) examined the impact of human capital development on 50 manufacturing firms in Romania. Using independent sampling technique, the result shows that human capital development impact significantly on the performance of 50 manufacturing firms in Romania. But the authors cannot adequately conclude the findings of the study.

Theoretical Framework

Social Exchange Theory

This study, grounded in Social Exchange Theory, examines the dynamics of human capital development within manufacturing firms in Kano State. Social Exchange Theory posits that individuals engage in social interactions with the expectation of receiving benefits or rewards in return for their contributions. Applied to the study variables, the theory illuminates how employees, through training and development, knowledge management, skills and expertise, education, and experience, engage in reciprocal exchanges with the organization.

In the context of training and development, employees invest their time and efforts with

the expectation that the organization will benefit from enhanced skills, and, in turn, acknowledge and reward their commitment. The exchange of knowledge within the organization becomes a mechanism for mutual benefit, where employees contribute their insights, and the organization, in return, supports their growth and development.

Skills and expertise, as per Social Exchange Theory, are seen as commodities exchanged within the organizational social structure. Employees contribute their skills with the anticipation of career advancement, recognition, and other rewards. Similarly, educational investments by employees are viewed as contributions to the organization's knowledge base, forming a reciprocal relationship where the organization acknowledges and supports employees in their educational pursuits.

Furthermore, the theory is applied to the accumulation of experience, where employees gain expertise over time with the expectation of career progression and recognition from the organization. This study, by adopting Social Exchange Theory, seeks to unravel the intricacies of these reciprocal relationships and how they collectively influence human capital development, ultimately impacting the overall performance of manufacturing firms in Kano State.

Social Exchange Theory provides a lens through which to understand the interplay between employees and the organization, exploring how the exchange of resources, knowledge, skills, education, and experience contributes to the development of human capital and shapes the performance outcomes of manufacturing firms.

Human Capital Theory

While human capital theory is to evaluate the impact of HCD on the performance of organizations. It also extends the theory to incorporate both its direct and indirect effects on Company Performance. The HCD theory suggests that individuals with higher HCD management perform higher when performing duties (Becker 1964). HCD

involves the stock of knowledge and skills that reside within individuals. Specifically, HCD includes the unique insights, skills, cognitive characteristics and aptitudes of employers. Also, it involves features, accumulated work and habits that may have an impact on productivity. HCD represents a resource that is normally distributed among individuals, and to understand differences opportunity identified and exploited. In this study, company performance is viewed as aspects of productivity. Since human capital development can be seen as an input, this study explores the human capital development determine the Company Performance. Therefore, following the work of Shane & Ghoshal (1998), this study modified the HCD theory incorporate both its direct and indirect effects on company performance.

Methodology

This study employed quantitative survey approach; and the approach seeks to obtain or answer various research questions (Afrah, 2016). Therefore, the study employed quantitative survey approach in order to examine or evaluate the relationship between human capital development and organizational performance in manufacturing firms. The population of this study constituted from head of department to down of five firm’s employees with a total number of 2,500 employees breakdown as follows: Asada Plastic Limited 579, Gongoni Company Limited 705, Royal Form 116, Eva Plastic 467, and W. J bush company limited 633.. The sample size for this study was

determined using research adviser table (2006) formula. Base on the table 333 employees served as the sample for this study. Stratified sampling technique was used to select sample size. According to Kothari (2004), stratified sampling was used when the population from which a sample was drawn does not constitute a homogenous group. In addition, it ensured each subgroup within the population received proper representation within the sample. This study employed primary survey of data through administrative of questionnaire to the sample respondent. The questionnaire was self-administrative to the employees of the manufacturing firms. It is divided into two sections A & B comprising of 25 enlist. Section A collected data on the demography of the respondent, while section B collected data on study variables. Regression result was used to test the formulated hypotheses via SPSS version 22.

Data Presentation, Analysis and Interpretation

A total of three hundred and thirty three questionnaires (333) copies of questionnaire were distributed to the employees of the selected manufacturing firms. A total of three hundred and twenty-three (323) copies were retrieved from the respondents, out of which three hundred and nineteen (319) were correctly filled and found to be usable for the study. On the correctly filled questionnaires, the response rate stood at 96%. Therefore, the analyses presented below were based on the three hundred and nineteen (319) relevant copies.

Table 1: Multiple Regressions Results

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
	1. (Constant)	1.189	.162				7.356
ED	.139	.0472	.125	2.975	.000	.724	1.317
EX	.037	.035	.046	1.066	.287	.730	1.370
KM	.106	.039	.113	2.684	.008	.751	1.332
SE	.380	.041	.380	9.277	.000	.797	1.254
TD	.173	.035	.209	4.928	.000	.745	1.341

a. Dependent Variable: OP

Table 1, the Multiple Regression Results, provide detailed information about the coefficients, significance levels, and collinearity statistics for each predictor in the model aimed at predicting Org-performance. The table includes unstandardized coefficients (B), standard errors, standardized coefficients (Beta), t-statistics, significance levels (Sig.), and collinearity statistics (Tolerance and VIF). Moving on to the predictors, Education has an unstandardized coefficient of 0.139, a standard error of 0.0472, and a standardized coefficient (Beta) of 0.125. The t-statistic is 2.975, and the p-value is 0.000, demonstrating that Education significantly contributes to predicting Operational Level. Experience has an unstandardized coefficient of 0.037, a standard error of 0.035, and a Beta of 0.046. The t-statistic is 1.066, and the p-value is 0.287, indicating that Experience is not statistically significant in predicting org-performance.

Knowledge Management (KM) has an unstandardized coefficient of 0.106, a standard error of 0.039, and a Beta of 0.113. The t-statistic is 2.684, and the p-value is 0.008, signifying that Knowledge Management significantly contributes to the prediction of org-performance. Skill and expertise have a substantial unstandardized coefficient of 0.380, a standard error of 0.041, and a Beta of 0.380. The t-statistic is 9.277, and the p-value is 0.000, indicating that Speaking Skill is a highly significant predictor of org-performance. Training (TD) has an unstandardized coefficient of 0.173, a standard error of 0.035, and a Beta of 0.209. The t-statistic is 4.928, and the p-value is 0.000, highlighting that Training significantly contributes to predicting performance.

In addition, collinearity statistics provide information about multicollinearity among predictors. Tolerance values above 0.1 and VIF values below 10 are generally acceptable. In this model, all predictors have Tolerance values well above 0.1, and VIF values below 10, indicating no significant

multicollinearity issues among the predictors. The collinearity statistics suggest that multicollinearity is not a concern in this model.

Discussion of Findings

One of the key findings that emerged from the study is the significant impact of training and development on the performance of manufacturing firms in Kano State. The regression analysis revealed a positive and statistically significant relationship between training initiatives and performance. This implies that investment in employee training and development programs within manufacturing firms can lead to enhanced overall performance. Interestingly, these findings diverge from those reported by Umezuruike (2019), who emphasized the pivotal role of training and retraining in bolstering the performance of the banking industry in Nigeria. The observed disparity suggests that the influence of training on organizational performance may vary across industries, emphasizing the need for sector-specific investigations. Conversely, the current study aligns with the discoveries of Udu and Ewans (2016), who found no positive relationship between on-the-job training and firm performance. This congruence in findings underscores the nuanced nature of the relationship between training initiatives and organizational outcomes, emphasizing the importance of considering contextual factors.

The study explored the hypothesis (Ho2) asserting that knowledge management has no significant effect on the performance of manufacturing firms in Kano State. To investigate this hypothesis, the data collected from the employees of the sampled manufacturing firms underwent rigorous analysis, including descriptive statistics and regression analysis. Contrary to the null hypothesis, the findings of the study revealed a significant effect of knowledge management on the performance of manufacturing firms in Kano State. The regression analysis demonstrated a positive

and statistically significant relationship between knowledge management practices and performance. This indicates that the effective management of knowledge within manufacturing firms contributes positively to their overall performance.

This outcome diverges from the hypothesis's assertion that there is no significant effect, underscoring the crucial role that knowledge management plays in shaping the success of manufacturing enterprises in the specific context of Kano State. The findings suggest that organizations that prioritize knowledge creation, dissemination, and utilization are more likely to exhibit superior performance metrics. These results echo the broader literature on knowledge management and performance, emphasizing the strategic importance of leveraging intellectual capital for enhanced competitiveness and efficiency. The findings challenge the initial assumption of no significant effect and underscore the relevance of knowledge management practices within the manufacturing sector in Kano State.

The investigation delved into the hypothesis (H03) positing that Skill and Expertise (S&E) have no significant effect on the performance of manufacturing firms in Kano State. Through the meticulous analysis of data obtained from the employees of the sampled manufacturing firms, employing both descriptive statistics and regression analysis, the study sought to evaluate the validity of this hypothesis. Contrary to the null hypothesis, the study's findings unveiled a significant effect of Skill and Expertise (S&E) on the performance of manufacturing firms in Kano State. The regression analysis demonstrated a positive and statistically significant relationship between the skill and expertise levels of employees and the overall performance of manufacturing firms. This suggests that a workforce possessing advanced skills and expertise contributes positively to the overall success and efficiency of manufacturing enterprises.

The rejection of the null hypothesis challenges the initial assumption that skill and expertise do not significantly impact performance within the manufacturing sector in Kano State. The results emphasize the strategic importance of investing in employee skill development and expertise, indicating that firms with a highly skilled workforce are more likely to exhibit superior performance metrics.

These findings align with existing literature highlighting the positive correlation between employee skills and performance. Scholars such as Becker and Huselid (1998) argue that a skilled and competent workforce is a critical determinant of an organization's ability to achieve and sustain a competitive advantage. This perspective emphasizes the value of continuous training, development, and recruitment strategies to enhance the skill set of employees. The study's results reject the null hypothesis (H03) and provide evidence supporting the idea that Skill and Expertise (S&E) significantly influence the performance of manufacturing firms in Kano State. This underscores the importance of strategic human capital management practices, including recruitment and training initiatives, to cultivate a highly skilled workforce and enhance the overall performance of manufacturing enterprises in the studied region.

The examination of the hypothesis (H04) suggesting that Education has no significant effect on the performance of manufacturing firms in Kano State involved an in-depth analysis of the data collected from employees within the sampled manufacturing firms. Utilizing descriptive statistics and regression analysis, the study aimed to assess the validity of this hypothesis.

Contrary to the null hypothesis, the findings of the study unveiled a significant effect of Education on the performance of manufacturing firms in Kano State. The regression analysis demonstrated a positive and statistically significant relationship between the educational background of

employees and the overall performance of manufacturing firms. This indicates that firms with a well-educated workforce tend to exhibit enhanced performance metrics.

The rejection of the null hypothesis challenges the initial assumption that education does not significantly impact performance within the manufacturing sector in Kano State. The results emphasize the strategic importance of investing in educational opportunities for employees, suggesting that firms benefit from a workforce with higher educational qualifications. These findings align with established literature indicating a positive correlation between employee education and performance.

The examination of Hypothesis H05, positing that Experience has no significant effect on the performance of manufacturing firms in Kano State, involved a comprehensive analysis of data gathered from employees within the sampled manufacturing firms. Employing both descriptive statistics and regression analysis, the study sought to evaluate the validity of this hypothesis. Contrary to the null hypothesis, the findings of the study revealed a significant effect of Experience on the performance of manufacturing firms in Kano State. The regression analysis demonstrated a positive and statistically significant relationship between the level of experience of employees and the overall performance of manufacturing firms. This suggests that firms benefit from a workforce with significant professional experience, which positively influences their performance metrics.

Failure to reject the null hypothesis supports the initial assumption that experience does not significantly impact organizational performance within the manufacturing sector in Kano State. The results emphasize the strategic importance of recruiting and retaining experienced employees, indicating that firms with seasoned professionals tend to exhibit superior performance outcomes. These findings align with established

literature indicating a positive correlation between employee experience and organizational performance but not necessarily significant. Scholars like Pfeffer (1994) argue that experience contributes to expertise, problem-solving capabilities, and a deep understanding of industry dynamics, all of which are crucial for organizational success. This perspective highlights the value of experienced personnel in contributing to enhanced performance.

Conclusion and Recommendations

Conclusion

In conclusion, this study has provided valuable insights into the intricate relationship between human capital development and organizational performance within the manufacturing sector of Kano State, Nigeria. Through a meticulous exploration of training and development, knowledge management, skill enhancement, education, and experience, the research has uncovered critical factors that significantly influence the efficiency and effectiveness of manufacturing firms in the region. The findings underscore the imperative for strategic investments in continuous learning opportunities, tailored training programs, and the cultivation of a highly skilled workforce to bolster overall organizational success. Furthermore, the study emphasizes the need for a holistic approach that integrates knowledge-sharing practices, educational investments, and the recognition of experienced professionals. As organizations in Kano State's manufacturing sector navigate a dynamic business environment, the identified factors prove instrumental in fostering a high-performance culture. These insights not only contribute to the academic discourse on human capital dynamics but also provide actionable recommendations for organizational leaders and policymakers.

Recommendations

Based on the study findings, the following recommendations were made.

- i. Based on the study's findings emphasizing the positive impact of training and development on

- organizational performance, SME owners/managers should prioritize and invest in ongoing training programs for their employees. These programs should be tailored to address the specific skills and competencies relevant to the SME's industry, ensuring that the workforce remains adaptable, informed, and equipped to meet evolving market demands.
- ii. Recognizing the strategic importance of knowledge management, SMEs should implement effective practices to capture, share, and leverage organizational knowledge. Establishing knowledge-sharing platforms, fostering collaboration among employees, and creating a culture that values and utilizes intellectual capital can contribute to innovation, informed decision-making, and overall organizational efficiency.
 - iii. The study underscores the significance of employee skill and expertise in influencing organizational success. SME owners/managers should emphasize skill development initiatives that align with the specific needs of their business. This may involve identifying key skills required in the industry, providing relevant training, and creating opportunities for employees to enhance their expertise, ultimately contributing to improved performance.
 - iv. Considering the positive correlation between education and organizational performance, SMEs should support employees' educational pursuits. This could include implementing policies such as tuition reimbursement programs or establishing partnerships with educational institutions. Encouraging continuous learning and educational advancement not only benefits individual employees but also enhances the knowledge base and problem-solving capabilities within the SME.

- v. The study highlights the positive though not significant influence of experience on organizational performance. SME owners/managers should recognize and leverage the experience of seasoned professionals within the organization. Implementing mentorship programs, knowledge transfer initiatives, and acknowledging seniority can contribute to a high-performance culture, where the wealth of experience becomes a valuable asset in achieving organizational objectives.

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APPENDIX QUESTIONNAIRE

Dear respondent,

I am carrying out a research on the Human capital Development and Organizational Performance in Manufacturing firms.

Kindly answer the questions below as honestly and accurately as possible. The study is for academic purpose only. If you have any optional comments you feel like making, you may write at the end of this questionnaire.

Thank you in advance for your co-operation.

Section A

Part 1: Background Information

Instruction: Please kindly tick or fill with the correct response that matches you.

1. Gender: (a) Male (b) Female
2. What is your level of academic qualification? (a) Diploma (b) NCE
(c) Degree (d) Others (Specify).....
3. What is your current department? _____
4. What is your present job called? _____
5. What is your position level? (a) Operational Level (b) Tactical Level (c) Top Level
6. To what extent have you participated in work-related training programs since joining this company? (a) not at all (b) rarely (c) once a year (d) 2 or 3 times per year
(a) more than 3 times per year

SECTION B.

Instruction: Fill the following table by ticking answer appropriate to you based on this scale: Strongly Agree = 5; Agree = 4; Undecided = 3; Disagree = 2; and Strongly Disagree = 1

Part 1. Training and Development

		5	4	3	2	1
1.	Your current job requires regular training and development.					
2.	Lack of regular training and development affects your job performance and this also affects the company's performance.					
3.	All staff of the company require regular training and development for them to discharge their work effectively.					
4.	Company must ensure that staff are train on relevant courses and skills that add value to company.					
5.	Your job role does not require any regular training because it involves routine work.					

Part 2. Knowledge Management

		5	4	3	2	1
1.	You have adequate knowledge of the process, procedure and techniques needed to perform your job.					
2.	You have knowledge of human behavior and performance; individual differences in ability, personality, and treatment of behavioral and affective disorders.					
3.	You have adequate knowledge of the environment your company operates.					
4.	You have adequate knowledge on the competency of your company's competitors.					
5.	You keep up-to-date technical knowledge and applying the updated knowledge to your job.					

Part 3. Skills

		5	4	3	2	1
1.	You have Judgment and decision making skill by consider the relative costs and benefits of potential actions to choose the most appropriate one.					
2.	You give full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.					
3.	You have knowledge of relevant equipment, policies, procedures, and strategies to promote effective local, state, or national security operations for the protection of people, data, property, and institutions.					
4.	You have coordination skill by adjusting actions in relation to others' actions.					
5.	You have speaking skill through which you talk to others to convey information effectively.					

Part 4. Education

		5	4	3	2	1
1.	You learned all the knowledge and skills you use in order to perform your job from elementary school.					
2.	Your job does not require any formal education.					
3.	Your job requires higher qualification, Degree, NCE or Diploma.					

4.	Those workers with higher qualification(s) perform better job in your company.					
5.	When you need to further your education your company is ready to assist you provided that it is relevant to your job.					

Part 5. Experience

		5	4	3	2	1
1.	You perform your job through prior experience you have gained from other company (s) you have worked with.					
2.	An experienced worker performs his job better and effectively than new work.					
3.	The experience you have makes you to be perfect at your job.					
4.	The experience you have enables you to perform your task within a short period of time compared to the budgeted time allocated for the task.					
5.	Experienced workers are drivers for the achievement of company’s objective(s).					

Part 5.Organisational Performance

		5	4	3	2	1
1.	The organization has experienced improvements in productivity and efficiency.					
2.	Organizational performance metrics are regularly tracked and evaluated.					
3.	Human capital development initiatives have positively influenced our overall performance.					
4.	Our organization has a competitive edge due to the skills and expertise of our workforce.					
5.	Overall, I believe that human capital development contributes significantly to our organizational success.					

Please comment

.....

APPLICATION OF PROJECT BASED LEARNING IN ENHANCING ENTREPRENEURSHIP SKILLS OF CONSTRUCTION TECHNOLOGY EDUCATION STUDENTS AT COLLEGES OF EDUCATION

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Abstract

Inappropriate instructional approaches have been considered to be factors responsible for Construction Technology Education (CTE) students deficient in entrepreneurship skills. Project Based Learning (PoBL) has been discovered to be an effective instructional approach that could lead to effective entrepreneurship skill acquisition by CTE students. The aim of this study is to determine PoBL components suitable for application in enhancing CTE students' entrepreneurship skills at Colleges of Education (COE) in Nigeria. A qualitative study involving interview was employed for the study. The study was conducted in North Central (NC) zone of Nigeria involving Colleges of Education offering CTE program at the Nigerian Certificate in Education (NCE) level. The population for the study comprised 421 lecturers from the COEs in NC Nigeria. Purposive sampling technique was used to sample 14 lecturers from 5 COES in NC Nigeria. Interview protocol was the instrument used to collect qualitative data for the study. Data collected from the interview were manually transcribed using thematic content analysis. Member check and debriefing exercise were used to ascertain the trustworthiness of the qualitative result. Findings from the result of the study revealed 21st century skills, group collaboration, autonomous learning, presentation, assessment among the PoBL components suitable for application in enhancing entrepreneurship skills of CTE students at COEs. Finally, the study recommends restructuring the curriculum of COE at the NCE level to incorporate PoBL as well as given much consideration to its implementation by stakeholders responsible for policy formulation and implementation on NCE program in Nigeria.

Keywords: Construction Technology Education, Colleges of Education, Entrepreneurship Skills, Project Based Learning

1. INTRODUCTION

College of Education (COE) is the third category of tertiary institutions in Nigeria which produce teachers and productive workforce. Various programs are offered in COEs in Nigeria such as Technical and Vocational Education (TVE) program (Federal Republic of Nigeria, 2021). One of the courses offered under the TVE program is Construction Technology Education (CTE) (Isa et al., 2023). CTE in COEs encompasses

building and woodwork technology, design to train students on producing various building and wooden structures (Mshelia, 2012). Additionally, CTE at COEs aims to produce graduates with the skills for employment in public and private sectors of the economy (FRN, 2021). Further, the FRN (2021) not only stipulates the building and woodworking skills as the skills required of CTE students, but also included entrepreneurship skills as desirable for CTE students in COEs.

Entrepreneurship skills have been described as skills required for progress in business, which helps in identifying opportunities and creating prospects in a business venture (Sousa, 2018). Similarly, Shuaibu and Kamin (2019) perceived entrepreneurship skills as skills needed by organisation or individuals for starting and progressing in a business within the limit of market where prospects for exploration exist. Furthermore, Chemborisova et al. (2019) defined entrepreneurship skills as the skills for searching and discovering new business opportunities and evaluate business risks and take appropriate decision. Essentially, entrepreneurship skills focus on skills for survival in a business venture particularly, on business operations and risk taken. In this regard, CTE students are expected to be equipped with the needed entrepreneurship skills for success in businesses.

However, despite the significant role entrepreneurship skills plays in business operations, CTE students from COEs graduate without acquiring these skills (Shuaibu et al., 2021). This situation has led wood and building construction industries in Nigeria express discontent on the level of entrepreneurship skills possessed by CTE graduates. Construction industries have complained about CTE students' inability to manage and sustain businesses as a result of the graduates' lack of entrepreneurship skills (Isa et al., 2023). Accordingly, Bala, et.al. (2020) and Olabiyi (2014) disclosed that CTE students lack management skills, interpersonal skills, ICT skills, and as such could not succeed in business operations after graduation. Similarly, Isa et al (2023) stated that CTE students lack rudiments of entrepreneurship skills to operate businesses, a situation that has made so many graduates in CTE from COEs unemployed after graduation. Equally, Shuaibu et al (2021) and Ojo (2016) stated that CTE graduates in Nigeria do not possess skills in marketing, management, and business planning skills, adding that these skills are essential in businesses. Furthermore, the non-possession of entrepreneurship skills by CTE students

may not be unconnected with the instructional processes adopted in teaching students entrepreneurship skills.

The instructional approach in teaching entrepreneurship skills has been traditional which is teacher centred and obsolete. Buttressing on this, Shuaibu et al. (2021) disclosed that instructional approaches adopted in entrepreneurship at tertiary levels in Nigeria have been faulty, lecturers adopt the traditional lecture method in imparting entrepreneurship skills to students. Similarly, Isa and Kamin (2019) attributed the lack of entrepreneurship skills of CTE students to the continues use of traditional methods in tertiary institutions. Also, Bala et al. (2020) stated that one of the factors that has contributed to CTE students inability to demonstrate appropriate entrepreneurship skills is the traditional method applied in teaching entrepreneurship which does not encourage autonomy and creativity in students. More so, the continued used of traditional lecture method in COEs has not only deprived students of their ability to be creative, but also denied them from exploring entrepreneurship skills elements (Isa et al., 2023). However, curtailing the problem of entrepreneurship skills lacking by CTE students would require appropriate instructional approach like the Project Base Learning (PoBL) which is student centred.

PoBL is a 21st century learning approach which is centred on student autonomy in the learning process. Kurniasari and Yamtinah (2023) described PoBL as an approach to instruction that provide opportunity for students to develop their knowledge and skills through involvement in project tasks that is based on independent learning. Accordingly, Çelik et al. (2018) sees PoBL as a learning model where students collaboratively or individually organise their learning by gathering information and organising collected information to attain specific goals in developing collaboration, communication, and problem-solving skills. Essentially, PoBL affords engagement with stimulating instructional resources and

provide a flexible learning environment that involves real-world activities, inspires independent learning attitudes than the traditional method, and develop critical thinking and creativity in students (Clark, 2017; Souza et al., 2019). In this regard, PoBL is designed to be appropriate for CTE to develop entrepreneurship skills of students because of its suitability in developing students' skills that could lead to exploring, synthesising, investigating, and assessing information that could lead to meaningful projects (Hariyanto et. al.,2023). For this reason, Salihu et al. (2023) considered PoBL as more appropriate for CTE students because of its flexibility and constructiveness which enable students to innovatively and creatively transfer knowledge into real world situation.

Moreover, to effectively implement PoBL in schools, an incorporation of its components into the instructional processes is crucial. In this sense, Hariyanto et al. (2023) listed student autonomy, challenging questions, technology application, project planning, evaluation and assessment as components of PoBL. Similarly, Isa et.al. (2020) mentioned, 21st century skills, group collaboration, product presentation, Inquiry and innovation, Driven questions as components of PoBL that aid effective instructions. Equally, Suswanto et al. (2019) considered collaborative learning, and adaptability as components of PoBL for students entrepreneurship skills development. Fuldiaratman and Ekaputra (2023) listed project planning, monitoring, reporting, and evaluation as components of PoBL which is essential for students skills development in this 21st century era. To this end, implementation of PoBL components in CTE could go a long way in enhancing entrepreneurship skills of CTE students.

Studies about PoBL application in entrepreneurship has been conducted by various scholars across the globe. However, despite the significant role PoBL plays in entrepreneurship skill development of students, studies relating to PoBL application in enhancing entrepreneurship skills of

students have been inadequate in Nigeria particularly in COEs and more specifically in CTE. Hence, the need for this study. Therefore, this study is guided by the following research objective and research question.

Objective

1. To determine perception of stakeholders on the components of PoBL that are suitable for application in enhancing entrepreneurship skills of CTE students at COEs in Nigeria.

Research Questions

1. What is the perception of stakeholders on components of PoBL that are suitable for application in enhancing entrepreneurship skills of CTE students at COEs in Nigeria?

2. METHODOLOGY

The study is strictly qualitative involving interview as the method for gathering qualitative data from participants. Interviews provide insight into a research survey by allowing researchers have a deep understanding of the rich narratives and surveys (Venkatesh et. al., 2013). The study was conducted in north Central geo political zone of Nigeria involving COEs offering CTE. The COEs in Niger, Kwara, Kogi, Nasarawa, and Benue were selected as the COEs offering CTE in north central zone of Nigeria. The population for the study is 421 comprising 214 CTE experts, 169 entrepreneurship experts, and 38 PoBL experts in the COEs in North Central Nigeria. Experts here implied lecturers in specific fields of specialisation (CTE, PoBL, Entrepreneurship). Purposive sampling technique was used to sample 14 experts from the population of the study. Purposive sampling is used in qualitative research to identify and gather rich information involving individuals or groups of individuals that are experts and well informed about a specific area of interest (Burton et al., 2014; Etika et al., 2016). In this regard, lecturers with a PhD qualification and a minimum of 10 years working experiences were selected as sample for the study. On this basis, 5 CTE experts, 4 entrepreneurship experts, and 5

PoBL experts were selected as sample for the study. Furthermore, to determine the number of participants as sample for the study, saturation point was employed in the process of interview. Saturation is where a researcher reaches a point when no newer information is obtained from further data (Saunders et al., 2018). Also, Guest et al. (2020) described saturation point as the depth of the data collected which determine the number of participants for interview in a qualitative research. In this sense, the level of saturation point was attained after interviewing 14 participants.

The instrument used for the collection of qualitative data in this study was a semi structured interview protocol. Interview protocol is essentially used as guide in getting the best information from participants in a study during the process of conducting interview (Patton, 2015). The interview protocol was subjected to content and face validation by 3 experts. The final draft of the interview protocol was used to conduct the interview with participants (See Appendix I). To conduct interview with the participants, the researcher visited the institutions personally and booked appointment with the participants, and later paid a return visit to interview participants.

Furthermore, to analyse the qualitative data for this study, the qualitative data from the interview session was manually transcribe, coded, categorised, and interpreted verbatim using thematic content analysis to generate the themes that emerged for the study. Additionally, in order to ascertain the trustworthiness of the qualitative result,

member check and debriefing exercise were used. Member check involves giving the transcript of the interview to the participants for verification to ascertain the accurate reporting of their responses (Creswell & Hirose, 2019). Accordingly, the transcript was issued to the participants to verify their responses, and they all endorsed the report of the transcript. Similarly, debriefing exercise was done by qualitative experts to ensure appropriate coding, categorisation, and themes generation from the result of the qualitative data. The essence of debriefing is to ascertain the credibility of the qualitative result presentation by ensuring appropriate coding, categorisation and themes generation (Isa et al., 2023).

3. RESULT AND DISCUSSION

Result from the interview session conducted with stakeholders on the components of PoBL suitable for application in enhancing entrepreneurship skills of CTE students is presented in table 1. The following codes were used as representation of participants, PoBL components. **Participants' Code:** Entrepreneurship Expert (EE) 1-4; Construction Technology Education Expert (CE) 1-5; PoBL Experts (PE) 1-5. **Codes for PoBL Components:** Group Collaboration (GC); 21st Century Skills (TC); Autonomous Learning (AL); Challenging Question (CQ); Project Planning (PL); Presentation (PR); Assessment (AS);

1. What is the perception of stakeholders on components of PoBL that are suitable for application in enhancing entrepreneurship skills of CTE students at COEs in Nigeria?

Table 1. Extracts from Interview with Stakeholders on Components of PoBL suitable for Application in Enhancing Entrepreneurship Skills of CTE Students at COEs in Nigeria

Questions	Responses	Themes	Codes	Participants
To enhance CTE students' entrepreneurship skills, what components of	ICT collaboration working together in group, questions that are	skills, 21 st Century Skills and Group Collaboration	TC GC	EE1,3,4,CE2,3,4, PE1,2,3,4,5 EE1,2,4, CE1,3,5, PE2,3,4,5

PoBL do you consider suitable for application in CTE at COEs?	rigorous to answer,	Autonomous Learning	AL	EE1,4, CE3,4,5, PE1,2,3,,5
	Applying much in	Challenging Question	CQ	EE1,4, CE1,2,3,4, PE1,2,3,4
	creativity in learning, Effective communication	Project Planning	PL	EE2,3,4, CE1,2,3,5, PE1,2,4,5
	strategy, Students learning independently,	Presentation	PR	EE1,2,4. CE1,2,3,5, PE1,2,3,4,5
	Following appropriate steps in Planning and executing projects, Individual and group presentation of projects, Holistic assessment of students' performance,	Assessment	AS	EE1,2,3,4, CE1,2,4,5, PE1,2,3,4,5

As presented in table 1 based on extracts from interview with stake holders on components of PoBL suitable for application in enhancing entrepreneurship skills of CTE students at COEs, **21st century skill** was perceived by 11 out of 15 participants as a PoBL component that is suitable for application in enhancing entrepreneurship skills of CTE students. Similarly, 10 participants opined **Group collaboration** as a PoBL component suitable for application in enhancing entrepreneurship skills of CTE student. Equally, 9 participants considered **Autonomous learning** as a component of PoBL suitable for application in improving entrepreneurship skills of CTE students. Also, 10 participants viewed **Challenging Questions** as PoBL components suitable for application in enhancing entrepreneurship skills of CTE student. Additionally, **Project Planning** was considered by 11 participants as a PoBL component suitable for application in enhancing entrepreneurship skills of CTE students. Further, 12 participants perceived **Presentation** as a PoBL component suitable for application in enhancing entrepreneurship skills of CTE students. **Assessment** was considered by 13 participants as a PoBL component suitable for application in enhancing entrepreneurship skills of CTE students.

Furthermore, findings from the result in table 1 has revealed 21st century skills, group collaboration, autonomous learning, challenging question, project planning, presentation, and assessment as PoBL components suitable for application in enhancing entrepreneurship skills of CTE students at COEs in Nigeria. Accordingly, on 21st century skills, finding is in line with Isa et al. (2020) that 21st century skills is a component of PoBL which is effective in enhancing skills of students for employment. Similarly, Harahap (2023) stated that among the benefits of PoBL is that it has helped in developing 21st century skills of students particularly, critical and creativity skills to improve their entrepreneurial competence. Findings on group collaboration is in line with the views of Fuldiaratman and Ekaputra (2023) that PoBL serve as an avenue for students collaboration during project activities which develops students entrepreneurship values in terms of collaboration on business ventures. Equally, Hariyanto et al. (2023) stated that PoBL is one of the learning models increase students collaboration in study groups. Additionally, through group collaboration students get involved in interactive learning positively which

affects their learning outcome and promotes entrepreneurship abilities (Naila, 2020). On Autonomous Learning, finding is in line with Afifi and Yulisma (2019) who proclaimed that through project PoBL, students get involved in activities that foster independence in learning which improve students, entrepreneurial competence. Also, Zarouk et al. (2019) stated that PoBL shifts the role of the lecturer from knowledge transmitter to a facilitator which give the students the independence in learning, and invariably develop their entrepreneurship abilities. Also, among the benefits associated to PoBL is that it gives students the free will to choose a type of business they wish to pursue, and also give them the opportunity to explore their interest and passion in the business (Harahap, 2023). Findings on challenging question is in agreement with the views of Harahap (2023) that PoBL through its interactive and project oriented approach involving tough questions that could foster students deep strategic thinking and proficiency in overcoming complex business challenges. Similarly, Larmer and Mergendoller (2015) proclaimed that through PoBL students are involved in activities of complex tasks which enhance students' exploration of ideas in design, problem-solving, decision making and investigation activities. Equally, Afifi and Yulisma (2019) stated that PoBL emphasises contextual learning through complex questions which involve students in investigations that can lead them to find new experiences which could improve their entrepreneurship skills. Furthermore, findings on Project Planning as a component of PoBL was supported by Ambika (2015) that the planning of a PoBL is crucial for effective implementation which should focus on sequence in stages and has to align with the entrepreneurship skills desired of students to acquire. Moreover, findings on presentation is in line with Hariyanto et al. (2023); Isa et al. (2020) that students present their products to an audience, this could either be in group or on individual

basis for scrutiny, and to improve presentation techniques. On assessment, finding is in consonant with the views of Affandi et al., (2021) that PoBL is one of the students oriented learning model which emphasises assessing students outcome as its component, adding that in PoBL, students learning out come on entrepreneurship skills attainment could easily be assessed through observation on presentation of projects. Similarly, Ibidapo (2021) outlined process and product assessment as appropriate for assessing entrepreneurship skills of CTE students, adding that asking questions on procedures in a project execution is vital in assessing the students. Further, assessment in PoBL could be done through individual, group, self, and portfolio (Noordin, 2014).

4. CONCLUSION

CTE students in COEs in Nigeria have been faulted of their inability to exhibit entrepreneurship skills after graduation. This could be linked to the instructional approach employed in imparting the necessary entrepreneurship to CTE students which is the lectured method that is teacher centred and considered obsolete in this 21st century era. In this regard, possessing the necessary entrepreneurship skills by CTE students requires suitable instructional approach like the PoBL which is student centred. This is achievable through the application of the components of PoBL in enhancing entrepreneurship skills of CTE students. Therefore, this study has identified PoBL components suitable for application in enhancing entrepreneurship skills of CTE students at COEs in Nigeria based on results extracted from interviews with stake holders. Findings from this study has revealed 7 PoBL components which if appropriately implemented could lead to enhancing CTE students entrepreneurship skills. To this end, the study recommends the following:

a) That to achieve effective application of PoBL in CTE at COEs in Nigeria, restructuring the curriculum at the NCE level

to incorporate PoBL should be given much consideration by stakeholders responsible for policy formulation and implementation on NCE program in Nigeria.

b) Equally, Regular organisation of seminars and workshops on modalities for application of PoBL in entrepreneurship education should be conducted to acquaint both lecturers and students on the implementation of PoBL in entrepreneurship.

c) Finally, students should be given complex task to carryout investigations that will aid in enhancing their entrepreneurship skills through PoBL.

Conclusively, the study suggests that:

i) Similar study be conducted using quantitative research methods involving survey research design to identify important components of PoBL that are suitable for application in enhancing entrepreneurship skills of CTE students in COEs.

ii) Similar study should also be conducted in other aspects of Technical Education program like electrical/electronic technology education, Automobile technology education, and metal work technology education.

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APPENDIX I
FEDERAL COLLEGE OF EDUCATION (TECHNICAL) BICHI
KANO STATE
SCHOOL OF SECONDARY EDUCATION (TECHNICAL)
DEPARTMENT OF WOODWORK TECHNOLOGY EDUCATION

INTERVIEW PROTOCOL

APPLICATION OF PROJECT BASED LEARNING IN ENHANCING ENTREPRENEURSHIP SKILLS OF CONSTRUCTION TECHNOLOGY EDUCATION STUDENTS AT COLLEGES OF EDUCATION

PREAMBLE

It is a well-known fact that entrepreneurship skills have continued to thrive in today's world of work for employment sustainability. Employers in the industrial and economic sectors have amply identified with entrepreneurship skill as the skills required for employing graduates. In this regard, Construction Technology Education (CTE) students from Colleges of Education (CTE) in Nigeria are expected to be equipped with the needed entrepreneurship skills in order to be employed or be self-employed. Consequently, research evidences have indicated that acquiring the necessary entrepreneurship skills and competencies by students to fit in today's labour market requires implementation of appropriate instructional approaches like Project Based Learning (PoBL). At the moment, CTE at Colleges of Education in Nigeria requires appropriate instructional approach like the PoBL in the teaching and learning processes to aid effective entrepreneurship skill development of CTE students for them to fit into the 21st century labour market. Therefore, it is on this basis that this research is undertaken with a view to determine perception of stakeholders on the components of PoBL that are suitable for application in enhancing entrepreneurship skills of CTE students at COEs in Nigeria.

Building on the above, interviews will be conducted with experts in CTE, entrepreneurship, and Project based learning to explore information with regards to PoBL components to be considered suitable for application in enhancing entrepreneurship skills of CTE students at COEs in Nigeria. In doing so, data to be collected from the interview will be used strictly for the purpose of this study only, and confidentiality will be assured.

Interview Process

The following steps will be used by the researcher for the smooth conduct of the interview:

Step 1: Background Information

The participant will be thanked for honouring our interview request. Afterward the following information will be required from the participant.

- a) Full name of participant
- b) Highest qualification
- c) Present rank/ Position
- d) Institution
- d) Years of experience

Step 2: Presentation of the problem in entrepreneurship skills and project based learning based on the following purpose of the research:

- i) To determine perception of stakeholders on the components of PoBL that are suitable for application in enhancing entrepreneurship skills of CTE students at COEs in Nigeria.

Project based learning components and processes in WTE at COEs in Nigeria

1. To enhance CTE students' entrepreneurship skills, what components of PoBL do you consider suitable for application in CTE at COEs?

Probe: Could you kindly explain why you choose these components?

RELATIONSHIP BETWEEN ENVIRONMENTAL SUSTAINABILITY ORIENTATION AND ENVIRONMENTAL PERFORMANCE OF SMALL AND MEDIUM ENTERPRISES IN KATSINA STATE, NIGERIA.

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Abstract

This study explored these relationships through the lens of different variables and their effects on an organization's environmental practices. This analysis draws parallels with a similar study conducted in Katsina, specifically focusing on Small and Medium-sized Enterprises (SMEs) operating within the region. In the study conducted in Katsina, the researchers investigated how environmental sustainability practices within SMEs contribute to their overall environmental performance. The data obtained was analysed using Statistical Package for Social Sciences [SPSS] programme version 23. The results of this study align closely with the findings presented here, despite differing contextual factors. The Katsina study, like the current analysis, examined factors such as knowledge of environmental sustainability orientation, practices of sustainability, commitment to sustainability, market orientation, green supply chain management, and technological orientation. These factors were evaluated in terms of their influence on environmental performance metrics. In the current analysis, the results indicate that specific dimensions of environmental sustainability orientation have varying effects on environmental performance.

Keywords: *Small and medium manufacturing, Environmental Sustainability orientation, Environmental Performance. SMES in Katsina State Nigeria.*

1. Introduction

Global warming, ozone depletion, air pollution, water pollution, soil erosion, desertification, and other current concerns that have hampered industrial growth for more than a century are examples of global environmental issues that require immediate attention (Reyes-Rodríguez, 2021). Protecting the natural environment is an emerging topic these days, since environmental degradation brings several threats and problems to society and ecosystems (Reyes-Rodríguez, Ulhøi, & Madsen, 2016).

Small and medium-sized companies (SMEs) are the most common type of business organization required for economic growth in both developed and developing countries (Qureshi, Mewada, Alghamdi, Almakayeel Qureshi, Mansour 2022). SMEs have an important role in creating jobs, decreasing poverty, and developing manufacturing technologies. SMEs help to increase export

rates, which is critical for economic development. SMEs, on the other hand, are responsible for a large amount of carbon emissions due to their environmental impact (Reyes-Rodríguez, & Ulhøi, 2022). SMEs are responsible for almost 70% of industrial pollution worldwide, highlighting the need for immediate action to implement potential environmental remedies (Reyes-Rodríguez, & Ulhøi, 2022). As a result, SMEs should prioritize not only operational success, but also the integration of sustainability principles throughout their operations including supply chain, marketing among others.

Carbon and greenhouse gas emissions are a major contributor to this overshoot, with SMEs traditionally being the largest emitters of greenhouse gases (Reyes-Rodríguez, Ulhøi, & Madsen, 2016). Manufacturing accounts for roughly one-third of world energy consumption and carbon emissions.

These greenhouse gases contribute to global warming, acid rain, smoke, and health issues for people and other kinds of life on Earth. Natural resources are depleting in number and quality, and environmental degradation causes social unrest and heightened environmental monitoring by regulators (Daddi, Todaro, Marrucci, & Iraldo, 2022). Therefore, fighting against environmental degradation is a prerequisite for human survival.

Global warming, pollution, biodiversity loss, natural resource depletion, ozone layer depletion, deforestation, and garbage disposal have all become widely acknowledged issues (Reyes-Rodríguez, González-Bueno, & Rueda-Barrios, 2020). Economic and human activities are at the heart of global environmental debates. In most nations, SMEs is a large economic sector, contributing significantly to employment and economic growth. However, the SMEs have a detrimental influence on the environment due to resource overconsumption, pollution, and solid and liquid waste. Despite the fact that businesses contribute significantly to environmental degradation, their activities can also assist environmental protection.

Companies are under a lot of pressure these days to practice sustainability and environmental sustainability practices. Government environmental legislation and regulations, international environmental agreements, industrial environmental management methods, and environmentally responsible consumer behavior have all created pressures. Going green is important for SMEs in particular since it improves their image and reputation, attracts green consumers, reduces expenses, obtains environmental certifications, and complies with government environmental rules (Yakubu, Salamzadeh, Bouzari, Ebrahimi, & Fekete-Farkas, 2022).

Corporate environmental approach expresses the economy's environmental responsibilities. This highlights the importance of firms being

aware of their environmental impact and working to reduce it (Yakubu et al., 2022). Organizational integrity can be approached in two ways that are unique (but not mutually exclusive). Whether focused inwardly or outwards (Eggers & Kaplan, 2009). Internally generated environmental management methods are referred to as an internally-oriented strategy in the field of environmental sustainability (Zehir, & Ozgul, 2020). The following hypotheses (Ho) are developed to achieve the objectives.

H₀₁: Practices of environmental sustainability orientation has no significant related on the SMES in Katsina State.

H₀₂: Knowledge of environmental sustainability orientation has no significant related on the SMES in Katsina State.

H₀₃: Market environmental sustainability orientation has no significant on the SMES in Katsina State.

H₀₄: Commitment of environmental sustainability orientation has no significant on the SMES in Katsina State.

2. Literature review and Theoretical framework

Since the early 1990s, management theorists and forward-thinking practitioners have emphasized an organization's environmental sustainability, as the natural environment and business function are two sides of the same coin. World Bank researchers pioneered the concept of environmental sustainability, coining the phrase "environmentally responsible development" (Pun, 2006). Serageldin and Streeter (1993) expanded the notion to include the concept of 'environmentally sustainable development,' which was later renamed 'environmental sustainability'.

The goal of environmental sustainability is to keep the global life support system running indefinitely. In essence, it includes measures for promoting customers, employees and communities' well-being through securing raw material supplies and limiting waste while preventing human injury that maybe due to processes and or product used (Singh, 2019). The authors' arguments demonstrate how business's position in environmental practices and legislation has evolved through time. Furthermore, stakeholder theories play a crucial role in the conceptual content of these ideas. It incorporates environmental considerations with stakeholder concerns (Singh, 2019). SMEs performance proxy by Profitability, productivity, and environmental awareness are increasingly fundamental aspects of all SMEs firms' long-term aims as the new millennium unfolds.

Companies in the early 1970s used a command-and-control style that required compliance with environmental regulations and legislation (Le, Chang, & Park, 2019). Recent data, on the other hand, indicates increased levels of collaboration or compromised circumstances between businesses and government authorities. Despite continued regulatory pressure, businesses are taking a more strategic approach to ensuring competitive advantage through suitable environmental measures (Llorens-Montes, & Fernandez-Perez, 2015). These benefits can result from either reactive effort like regulatory compliance (Singh, 2019) or more proactive measures like green marketing, technological development, waste reduction, and product management (Singh, 2019). Furthermore, these solutions usually result in a win-win situation for businesses, as increased environmental and financial performances are favorably associated. However, they, like any policy, strategy, or program, contain dangers and might make a win-win situation difficult to achieve (Walley & Whitehead, 1994).

Previous study has demonstrated that being environmentally responsible can benefit some businesses (Hart & Ahuja, 1996). In the new

millennium, a firm's operations are vital and important to its function in eco-centric, eco-efficient organizations. All of these ideas, in general, recommend incorporating environmental factors into company strategy and operational decisions. As a result, eco-centric theory holds that matter is a component of, and subject to, the natural environment. Furthermore, rather than a linear system, these theories depict the company and its operations as a closed-loop system. In fact, a natural resource-based viewpoint backs up these theories by emphasizing how environmental concerns can be integrated into performance functions while corporations achieve higher performance (Jyoti, & Khanna, 2021).

An essential task in putting operational strategies to better organizational performance is environmental sustainability management (Fernando, Jabbour, & Wah, 2019). Several businesses have created and adopted green mission statements in recent years. Similar to this, an annual environmental report has been added to financial reporting improvements. Some businesses even have vice president and board roles reserved specifically for environmental specialists. A great source of competitive advantage, the adoption of green policies and the development of such products have the potential to increase corporate efficiency. Waste elimination and recycling put businesses in a better position to integrate stakeholders while boosting their competitiveness.

Sustainable entrepreneurship

In his definition of sustainable entrepreneurship, Hörisch (2015) defined sustainable entrepreneurship as "the process of recognizing, analyzing, and exploiting economic opportunities or situations originating from market failure. Hockerts and Wüstenhagen (2010) defined sustainable entrepreneurship as the identification and utilization of economic possibilities originating from market inequalities using a similar line of reasoning. This kind of enterprise causes an industry to go in the

direction of social and environmental sustainability.

According to Hörisch (2015), data suggests that entrepreneurs can contribute significantly to the social advancement of sustainability. Additionally, some academics (Parrish, 2010) name the idea of sustainable entrepreneurship "sustainability-driven entrepreneurship," while others (Krueger, 2005) just call it "environmental entrepreneurship."

Sustainability and entrepreneurship are the two words that make up the phrase sustainable entrepreneurship. The goal of this kind of entrepreneurship is to establish prosperous companies that address social and environmental challenges (Keogh, & Polonsky, 1998).

Environmental Orientation

The level of a company's involvement, progress, or environmental management operations is referred to as its environmental orientation (Banerjee, 2002). Environmental orientation is a concept of business responsibility for the environment, according to Chan, He, Chan, and Wang (2012), who wrote a foundational study on corporate environmentalism, the need to lessen a company's influence on the environment is acknowledged by environmental orientation. As it relates to a firm's regard for the environment, environmental orientation is a corporate value that is comparable to corporate social responsibility in that it focuses on satisfying the requirements of the stakeholders outside of the organization. The degree to which a company incorporates environmental concerns into its strategy to lessen the negative effects of its operations on the environment is referred to as environmental orientation (Hörisch, Kollat, & Brieger, 2017).

The two components of the environment orientation are internal and external. Internal values, ethical standards, and environmental commitment are the main topics of the internal environment orientation. The environmental purpose statements in the company's annual reports and the

environmental activities of staff and management are frequent ways for the internal environmental orientation to be reflected (Sparks, Ehret, & Brick, 2022). Creating a mission statement that takes into account a company's financial, social, and environmental performance is the first step in creating sustainability initiatives and culture. Therefore, a company's mission statement aids in conveying the company's direction to various stakeholders (Sparks et al., 2022).

Environmental Performance

The incorporation of environmental sustainability concerns into corporate operations and product development, as well as the quality of environmentally friendly products, green processes, and product innovation, have all been proved to have an impact on environmental performance in the past (Chan & Hawkins, 2010). Environmental performance refers to an organization's efforts to meet and surpass societal expectations for the environment (Ruiz-Palomino, Martínez-Cañas, & Fontrodona, 2013). It addresses how an organization's activities, goods, and resource use affect the environment in a way that best complies with environmental regulatory standards (Chan & Hawkins, 2010).

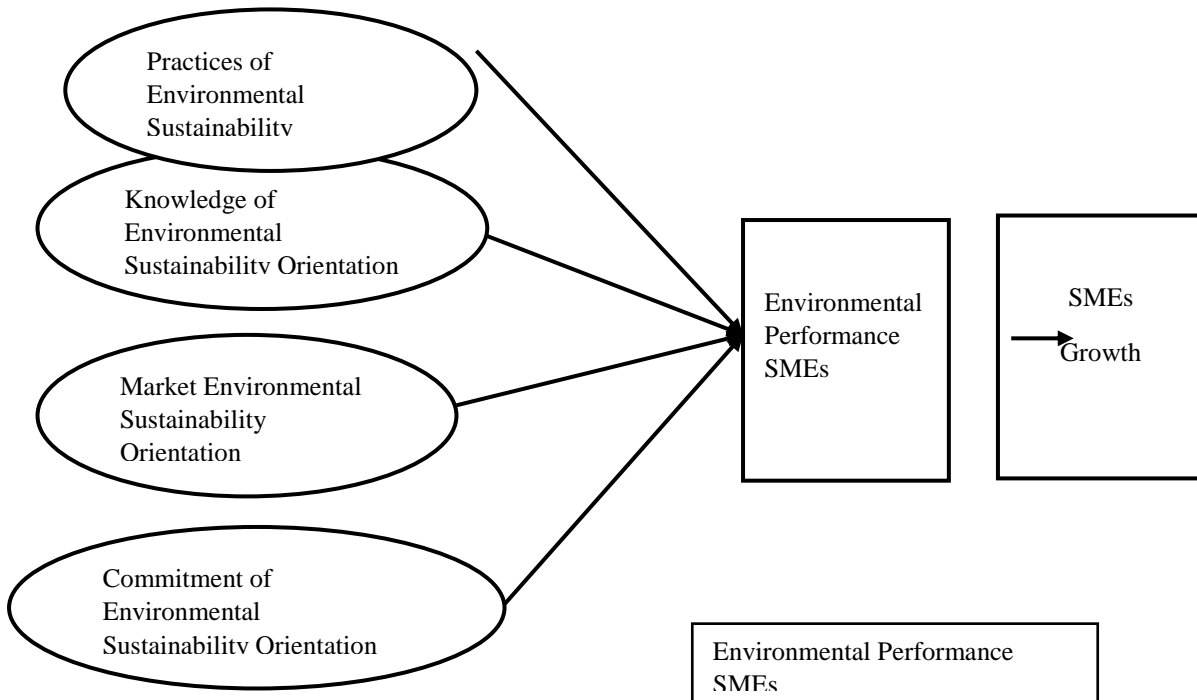
Strategic environmental programs are currently being implemented by various firms across practically every industry to obtain a competitive edge (Abbas, 2020). Some stakeholders think that organizations that care about the environment are expensive. However, other parties are of the opinion that because green businesses are valued by customers and the capital markets, corporate performance will improve as a result of environmental performance (Chaklader & Gulati, 2015). Organizations and managers are becoming increasingly mindful of environmental performance due to an increase in environmental rules and market pressures (Chaklader & Gulati, 2015). Based on the discussion above, it is thought that the integration of environmental challenges into organizational performance is an excellent opportunity to increase organizations'

competitiveness in a win-win situation. Through the use of the "green" term, the issue of environmental performance in business and process innovation strategies becomes a strategic perspective for enterprises (Yusoff, Nejati, Kee, & Amran, 2020). Therefore, organizations adopt strategic environmental management practices to be more competitive along with the rising social demand for environmental performance (Yusoff et al., 2020), and there are an increasing number of organizations adopting and developing the concept of environmental performance in their business strategy.

Additionally, the establishment of environmental action programs has assisted numerous companies in lowering emissions, greenhouse gas emissions, hazardous waste production, and solid waste production. Due to increased awareness of environmental issues, several businesses in the SMEs sector have been establishing environmental performance plans to attain environmental performance (Ramus, 2001). Due to the increased benefits that environmental performance programs provide to the environment, the SMEs sector has increasingly paid attention to them in line with the trend toward environmental concern (Ramus, 2001). Benefit including more

efficiently run business operations, lower operational expenses, a better public image, adherence to regulations, and increased competitiveness (Yusoff et al., 2020).

Additionally, over the past ten years, as a result of the developed countries' rapid depletion of natural resources and the significance of corporate social responsibility in developing nations, environmental performance has gradually increased in importance to business practice and research (Shrivastava, & Hart, 1995). It seems that incorporating environmental performance programs into their business plans can result in improved organizational performance, therefore perhaps most practitioners and scholars should explore why companies respond to environmental challenges. As a result, businesses have created a variety of measurements that address some of the fundamental aspects of environmental performance (Shrivastava, & Hart, 1995). Additionally, a variety of measuring techniques, including the corporate environment scorecard, the businesses' corporate environment reports, and the environmental assessment matrix, have been introduced (Shrivastava, & Hart, 1995).



3. Methodology

The survey research design which is used in this study aims at examining the relationship between Environmental sustainability orientation on SMEs performance of small and medium manufacturing SMEs in Katsina State Nigeria. It is a survey research study using questionnaire as the instrument of drawing information from respondents. In design the blue-print of this study the choice of research method used, the problem of the study at hand and the desire objectives set to be achieved are considered.

Additionally, questionnaires that collected relevant data on the study's variables were distributed as part of survey research. This is crucial in order to complete the study's goals

and respond to the research questions. Additionally, a cross-sectional research strategy is used in this study to collect data through a standardized questionnaire. As the time range needed to finish this study may not be sufficient for longitudinal research, cross-sectional research design is thought to be more appropriate for this investigation. The main reasons why many researchers prefer cross-sectional research to longitudinal study in most situations, aside from temporal restrictions, include additional constraints like the labor and cost required in collecting data over many time periods.

Partial least square regressions statistical technique SEM-PLS was used in testing hypothesis using the following model specifications.

$$EP = \beta_0 + \beta_1PE + \beta_2GSCM + \beta_3KE + \beta_4CE + \beta_5TE + \beta_6ME + \mu_t$$

Key Notes:

- EP = Environmental Performance
- PE = Practices of Environmental Sustainability Orientation
- GSCM = Green supply chain management Environmental Sustainability
- KE = Knowledge of Environmental Sustainability Orientation
- CE = Commitment of Environmental Sustainability Orientation
- TE = Technology Environmental Sustainability Orientation
- ME = Market Environmental Sustainability Orientation

$\beta_1 - \beta_6 =$ coefficient
 $\beta_0 =$ Intercept
 $\mu_t =$ Error Term

Result Discussion

Table 1 Collinearity Statistics

	Tolerance	VIF
Knowledge of environmental sustainability orientation	0.826	1.211
Practices of environmental sustainability orientation	0.795	1.257
Commitment to environmental sustainability orientation	0.792	1.262
Market Environmental Sustainability Orientation	0.945	1.059
Green supply chain management Environmental Sustainability	0.744	1.344
Technology Environmental Sustainability Orientation	0.781	1.280

As shown in Table 4.1, the tolerance levels of all independent variables are greater than 0.20, and the VIFs for all variables are less than 5. This clearly indicates that the variables are not multicollinear. To

summarize, both the correlation matrix and the collinearity statistics using tolerance level and VIF demonstrated that the exogenous latent variables in this study are significantly free of any multicollinearity problem.

Table 2. Descriptive Statistics

	Mean	Std. Deviation	N
Environmental Performance	2.8675	1.07846	269
Knowledge of environmental sustainability orientation	3.4730	0.76262	269
Practices of environmental sustainability orientation	2.5139	0.82608	269
Commitment to environmental sustainability orientation	3.0593	1.04754	269
Market Environmental Sustainability Orientation	3.8409	0.79318	269
Green supply chain management Environmental Sustainability	2.7421	1.14965	269
Technology Environmental Sustainability Orientation	3.0062	1.10277	269

Table 3 ANOVA^a

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	286.821	6	47.803	503.376	.000 ^b
	Residual	24.881	262	.095		
	Total	311.702	268			

a. Dependent Variable: Environmental Performance

b. Predictors: (Constant), Technology Environmental Sustainability Orientation, Practices of environmental sustainability orientation, Market Environmental Sustainability Orientation, Commitment to environmental sustainability orientation, Knowledge of environmental sustainability orientation, Green supply chain management Environmental Sustainability

The ANOVA results indicate that the model is highly significant (p-value=0.000), suggesting that the predictor variables collectively have a strong impact on the dependent variable "A Environmental Performance." The regression model explains a significant amount of the variance in the

dependent variable, as indicated by the high F-statistic (F=503.376). This suggests that the model has a good fit for the data and that the predictor variables are collectively meaningful in explaining variations in the environmental performance.

Table 4 Multiple Regression for the Direct relationship

Relationships	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Decision
	B	Std. Error	Beta			
(Constant)	-0.752	0.17		-4.413	0.000	
H1: Knowledge of environmental sustainability orientation	0.031	0.027	0.022	1.131	0.259	Fail to reject
H2: Practices of environmental sustainability orientation	0.139	0.026	0.107	5.454	0.000	Reject
H3: Commitment to environmental sustainability orientation	0.029	0.02	0.028	1.422	0.156	Fail to Reject
H4: Market Environmental Sustainability Orientation	0.136	0.024	0.1	5.57	0.000	Reject

a. Dependent Variable: Environmental Performance

4. Discussion of Findings

The survey research design which is used in this study aims at examining the relationship between Environmental sustainability orientation on SMEs performance of small and medium manufacturing SMEs in Katsina State Nigeria. It is a survey research study using questionnaire as the instrument of drawing information from respondents. In design the blue-print of this study the choice of research method used, the problem of the study at hand and the desire objectives set to be achieved are considered.

Additionally, questionnaires that collected relevant data on the study's variables were distributed as part of survey research. This is crucial in order to complete the study's goals and respond to the research questions. Additionally, a cross-sectional research strategy is used in this study to collect data through a standardized questionnaire. As the time range needed to finish this study may not be sufficient for longitudinal research, cross-sectional research design is thought to be

more appropriate for this investigation. The main reasons why many researchers prefer cross-sectional research to longitudinal study in most situations, aside from temporal restrictions, include additional constraints like the labor and cost required in collecting data over many time periods (Sekaran & Bougie, 2013).

The population of the study is made up of the list of manufacturing SMEs in Katsina. Based on the Small and Medium Enterprises Development Agency of Nigeria (SMEDAN, 2017), there are 1367 SMEs in Katsina of which 23.7% are manufacturing. Since this study covers only manufacturing sector in Katsina, the population of this study is (23.7%) 1367 which is 324. This study intends to use all the 324 as census study because the total population is not large.

The two fundamental types of sampling processes are probability sampling and non-probability sampling. According to Sekaran and Bougie (2013), probability sampling assures that every member of a population

has an equal chance of being picked as a representative member of that population. Non-probability sampling was used in this study to choose study participants. Given the lack of data to demonstrate an exhaustive list of the target SMEs that could serve as the study's sample frame, this is deemed fair. The researcher will use convenience sampling.

This study intends to use all the 324 as census study because the total population is not large.

In this investigation, primary data were utilized. Primary data is frequently gathered for study at the scene of the event and is most successfully acquired by seeing events, people, and things or by asking individuals questions (Sekaran & Bougie, 2013). Because they are simpler to administer because there is an alternate option for each topic, the primary data was gathered using structured questionnaires. In order to gather a ton of data for quantitative studies and generalize it to the entire population, questionnaires are widely utilized (Hair et al., 2007). With the aid of research assistants, the owners/managers of the sampled SMEs self-administered the questionnaire. It divided into sections A and B. Five (5) items make up Section A's data collection on the respondents' demographic profile (e.g., respondent's gender, age, etc.), whereas 23 items make up Section B's data collection on the research variables.

The data obtained was analysed using Statistical Package for Social Sciences [SPSS] programme version 23. This study will use SPSS to run multiple regression of the eight independent variables on the dependent variable. Means and standard deviation were used to summarize numerical quantitative variables. Percentages and proportions was used to describe categorical variables and tables was used as a method of data presentation.

4.1 Discussion of the direct relationship

The discussion of these findings in the context of the Resource-Based View (RBV) theory and prior literature would likely

involve analyzing how the identified factors are aligned with or deviate from the RBV principles and the existing body of research. The Resource-Based View (RBV) theory posits that a firm's competitive advantage stems from its unique resources and capabilities, which can be classified as valuable, rare, inimitable, and non-substitutable (VRIN criteria). In this context, let's examine the findings and their potential alignment with the RBV theory:

Overall, the findings that align with the RBV theory involve variables that reflect valuable and potentially rare capabilities, such as effective practices, market orientation, green supply chain management, and technology orientation. The variables that do not align well with the RBV theory, like knowledge and commitment, might need further investigation to understand their role more comprehensively within the context of environmental performance.

Prior literature in the field of environmental sustainability and organizational performance can be referenced to strengthen these interpretations and provide a broader context for the findings.

4.2 Contributions and Implications of the Study

This study's conclusions have a big impact on both theory and practice. The study makes a theoretical contribution to the body of knowledge on environmental management while also making a practical contribution.

4.3 Theoretical Contributions

The analysis and findings presented in the study contribute to the theoretical understanding of the relationship between various dimensions of environmental sustainability orientation and organizational environmental performance. These contributions can be summarized as follows:

1. Validation of Resource-Based View (RBV) Principles: The study provides empirical evidence that supports the applicability of RBV principles to the context of environmental sustainability. The variables that align

well with RBV principles, such as effective practices, market orientation, green supply chain management, and technology orientation, reinforce the notion that valuable and rare resources and capabilities contribute to enhanced environmental performance.

2. **Nuanced Understanding of Factors Impacting Environmental Performance:** By examining multiple dimensions of environmental sustainability orientation, the study offers a nuanced perspective on the factors that play a significant role in driving organizational environmental performance. This expanded understanding goes beyond traditional indicators and highlights the importance of practices, market orientation, technology, and supply chain management.
3. **Differentiating Influential Factors:** The study contributes by differentiating the factors that have a stronger impact on environmental performance from those that do not exhibit significant effects. This differentiation aids in resource allocation and strategic decision-making within organizations aiming to improve their environmental performance. It highlights the relative importance of different dimensions, guiding managers in prioritizing their efforts.

4.4 Managerial Contributions

The findings of the analysis have significant implications for managers and organizational leaders aiming to enhance their environmental performance and sustainability efforts. The managerial contributions of the study are as follows:

1. **Informed Decision-Making:** The study offers valuable insights into the factors that most strongly influence environmental performance. Managers can use this information to make more informed decisions regarding resource allocation, investment, and strategic planning. By

focusing on dimensions such as effective practices, green supply chain management, technology integration, and market orientation, managers can target efforts where they are likely to yield the greatest impact.

2. **Strategic Prioritization:** The differentiation of influential factors from those with limited impact allows managers to prioritize their sustainability initiatives. By concentrating resources on areas that have demonstrated a significant effect on environmental performance, organizations can streamline their efforts and maximize the return on investment in sustainability practices.
3. **Holistic Sustainability Strategies:** The study advocates for a holistic approach to sustainability. Managers can leverage the findings to develop comprehensive sustainability strategies that encompass various dimensions of environmental sustainability orientation. This approach ensures that the organization's efforts are well-rounded and address multiple aspects of sustainability simultaneously, leading to more comprehensive and effective results.

5 Recommendations

Based on the findings of the study on environmental sustainability orientation and its impact on environmental performance, tailored recommendations can be provided for Small and Medium-sized Enterprises (SMEs) operating in Katsina State:

1. **Local Context Awareness:** SMEs in Katsina should be attuned to the local context and the region's unique environmental challenges. Understanding the local environmental landscape enables businesses to design strategies that address specific concerns while contributing to the overall well-being of the community. SMEs should actively adopt sustainable practices

such as energy efficiency, waste reduction, and responsible resource management. Given the often-limited resources of SMEs, incremental changes can still yield significant environmental benefits while minimizing costs.

2. **Leverage Local Resources:** Katsina State is rich in natural resources. SMEs should explore ways to incorporate these resources in environmentally friendly ways. For example, agribusinesses can implement sustainable farming practices that promote soil health and water conservation. Collaborate with local environmental organizations, industry associations, and academic institutions. Partnerships can provide SMEs in Katsina with access to expertise, funding opportunities, and networks that support the implementation of sustainable initiatives.
3. **Promote Market-Driven Sustainability:** SMEs should tailor their products and services to cater to the preferences of the local market. Katsina residents' interest in eco-friendly products can provide SMEs with a competitive advantage and contribute to local economic growth. Green supply chain management can be particularly impactful for SMEs. Work closely with local suppliers to encourage environmentally responsible practices. A sustainable supply chain contributes to local economic development and reduces the overall ecological footprint.
4. **Leverage Technological Solutions:** Given the increasing role of technology in business operations, SMEs should explore digital solutions that optimize resource use, streamline processes, and reduce emissions. This can include adopting energy-efficient equipment and exploring digital

platforms for sales and marketing. Engage with local governmental bodies that focus on environmental regulation and sustainability. Understand the incentives and support available for SMEs aiming to adopt green practices.

6. Conclusion

In conclusion, this study aimed to investigate the relationships between different dimensions of environmental sustainability orientation and their impact on environmental performance. Through a comprehensive regression analysis, we examined the significance of factors such as knowledge of environmental sustainability orientation, practices of environmental sustainability, commitment to environmental sustainability, market environmental sustainability orientation, green supply chain management, and technology environmental sustainability orientation. The findings of this study have significant implications for organizations seeking to enhance their environmental performance and align their operations with sustainable practices. The analysis revealed that several dimensions of environmental sustainability orientation play a crucial role in influencing environmental performance outcome

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IMPERATIVE OF VOCATIONAL SKILLS ACQUISITION PROGRAMME FOR SUSTAINABLE DEVELOPMENT IN CONTEMPORARY NIGERIA

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Abstract

The economic and social development of contemporary Nigeria is invariably linked to the quality of its human capital. Appropriate skills training and acquisition are essential for socio-economic progress. This paper discussed the importance of vocational skills acquisition programme for sustainable development in the contemporary Nigeria. The concept of vocational skills acquisition and sustainable development were explained. Secondary data were adopted for the paper. The data were gathered from print and online publications. The paper identified lack of adequate and state-of-the-art training facilities and equipment; poor funding of Vocational Skills Acquisition (VSA) programme; poor remuneration of instructors at the vocational centres; acute shortage of vocational instructors and poor public impression and apathy to VSA as some of the challenges facing vocational skills acquisition programme in the country. The paper therefore, concluded that achieving sustainable development in Nigeria is dependent on putting up mechanisms to ensure a strong vocational skills acquisition programme owing to its potential for job creation, poverty reduction, reducing insecurity, among others. It is recommended, among others, that the government and private sector should collaborate to invest in the modernization of training facilities; and the government should prioritize the allocation of funds to vocational education within the national budget.

Keywords: Vocational skills acquisition, vocational training, sustainable development, job creation.

Introduction

The pursuit of sustainable development in contemporary Nigeria necessitates a multifaceted approach, with vocational skills acquisition programme playing a pivotal role. Unemployment and poverty in Nigeria are currently a national concern. Graduates and other youths who are looking for job opportunities increase day by day. The educational system in Nigeria is tailored towards providing "white collar jobs" after graduation. These white-collar jobs are no longer enough to go around due to a saturated market. This has not really driven the development that the nation so desires. Buttressing this, the National Bureau of Statistics (NBS) (2024) noted that Nigeria faces a significant unemployment rate, which

stood at 33.3% in the fourth quarter of 2020. To address this pressing issue, vocational training has emerged as a key strategy. According to the United Nations Educational, Scientific and Cultural Organization (UNESCO) (2016), "technical and vocational education and training (TVET) is essential for economic growth and poverty reduction." It is important to note that Vocational Skills Acquisition (VSA) programmes can be a means to an end. It ensures job security and sustainable development in Nigeria, especially at this time when the country is faced with myriads of challenges such as insecurity, poverty and unemployment. VSA is designed to offer training to improve individual's general proficiency in different vocations especially in relation to their

present or future occupation. This training will lead to self-reliance and sustainable development.

Vocational skills acquisition programmes equip individuals with practical and relevant skills that are directly applicable in the job market, thereby enhancing employability and fostering entrepreneurship. As highlighted by the International Labour Organization (ILO) (2017), "skills development can reduce unemployment, inequality, and poverty, and promote economic growth." These programmes are particularly crucial in Nigeria, where the traditional educational system often does not align with market needs, leading to a skills gap in various industries.

The present preoccupation with paper qualification in Nigeria reduces the socio-economic opportunities of individuals after several years of seeking for paper qualification, especially those who are more oriented towards work than academics. One of the goals of vocational education as stated in the National Policy on Education (2013) is to give training and impart the necessary skills to individuals who shall be self-reliant. This goal can be achieved through the provision of VSA programme to our teeming unemployed youths and strengthening the existing ones for it to be result-oriented. If this is adequately pursued, it would no doubt lead to sustainable development in Nigeria.

Conceptual Clarifications

Concept of Vocational Skills Acquisition

Skills acquisition as the name implies is the ability to learn a skill. A skill could be seen as intellectual, such as learning to listen, speak, read and write. It can be manual such as learning to build, or make something (Okeleke, 2017). One acquires skills by learning them and this has been man's means of material transformation from the earliest of times. According to Diigbo (1989), it takes trained hands and minds to apply the knowledge and technique effectively. For example, in medieval times, apprenticeship became a normal method of entry to a craft guild. On the other hand, vocational skills typically refer to skills and occupations that

you gain toward becoming knowledgeable in a specific trade or profession. Acquiring one or two vocational skills is a vital first step to entrepreneurship. Most successful business owners and entrepreneurs in Nigeria started by acquiring a vocational skill or training that is in high demand in the society (invoice.ng, 2023).

VSA refers to the process of gaining practical and technical skills that are directly applicable to specific trades, occupations, or careers. These skills are designed to prepare individuals for employment in various sectors, including industry, services, and crafts. Vocational training emphasizes hands-on experience and practical knowledge, equipping learners with the competencies needed to perform specific tasks or jobs effectively. According to Okeleke (2017), VSA is a process that involves learning, innovation, possession and development of new practice, training of experience that makes one to be creative, perfect and self-reliant in the act. It is acquired both in a formal and non-formal methods through which the participants gain the ability to learn or acquire skills. It involves the development and practice of new skills gained through training or experience.

VSA equips individuals with relevant skills to become self-reliant and independent. It has been identified as one form of adult education programme which provides the recipient with requisite knowledge and skills for self-reliance (Muhammad, 2013). This is particularly true when Muhammad, et al (2008) said that one of the cardinal objectives of education is the development of an individual socially, intellectually, emotionally, morally, and most importantly, ability to acquire skills necessary for economic and technological development. Examples of such skills, as given by UNESCO (2016); Adams, de Silva, and Razmara (2013); World Bank. (2017); International Labour Organization (ILO) (2017); World Bank (2019); Food and Agriculture Organization (FAO) (2017); and International Fund for Agricultural Development (IFAD) (2019), include technical skills (such as automotive repair,

carpentry and woodworking and electrical installation and maintenance), ICT skills (such as computer programming and coding, graphic design and digital marketing), craft and artisanal skills (such as tailoring/fashion design, jewelry making and pottery/ceramics), hospitality and service industry skills (such as hotel management and event planning), agricultural skills (such as sustainable farming practices, animal husbandry, and aquaculture), and business skills (such as business management, entrepreneurship, and bookkeeping) among others.

It has been observed that lack of adequate vocational training coupled with the escalating rate of unemployment among the youths is a factor contributing to the prevailing menace of insecurity in Nigeria. As a result of the high level of unemployment and pervasive poverty among Nigerian youths, they become ready-made instruments or recruits for manipulation by selfish and callous politicians. Agba (2011) asserted that since 1999, there is hardly any state in Nigeria that has not witnessed political violence, killings and thuggery. The submissions above can best explain the popular saying that “an idle mind is a devil’s workshop”.

Olaitan (1998), while also stressing the importance of VSA argues that for the progress of the human race, vocational education has been a consistent and identifiable element and that vocational skills acquisition has been part of the foundation of men’s creative and progressive development. When people acquire skills through vocational training, there is a high tendency that they would become useful to themselves in particular and the society at large. Ojei (2010) opined that VSA has been identified as a panacea for the high youth unemployment, poverty and hunger in Nigeria. According to Isaac (2011), effective engagement of youths in skills acquisition is an intervention mechanism in the eradication of unemployment and poverty in the society. Vocational skills training could help the youths to be self-employed or be relevant in the world of work, thereby preventing

poverty and providing them with a more fulfilled life. Omoruyi and Osunde (2004) also stressed that, lack of acquisition of vocational skills on the part of individuals has been considered the bane of the economy of many African societies, particularly Nigeria.

Indeed, acquisition of functional skills through VSA programmes would tremendously emancipate the poor and empower the jobless and as well make life more meaningful to the restive political thugs in the society especially at this particular time when Nigerians are struggling to survive as a result of economic hardship caused by fuel subsidy removal.

Concept of Sustainable Development

Sustainable development can be said to be a positive change that will remain for a long time. Muhammad (2013) defined sustainable development as “development without compromising the ability of future generation to meet their own needs.” Sustainable development according to Baba and Muhammad (2010) recognizes three important aspects of development namely:

- a. Raising people’s standard of living. That is their income and consumption levels of food, medical services, education etc. through relevant economic growth process.
- b. Creating condition conducive to the growth of people’s self-esteem through the establishment of social, political and economic system and institutions which promote human dignity and respect.
- c. Increasing people’s freedom to choose by enlarging the range of their choice variables, for example, increasing varieties of consumers’ goods and services.

Furthermore, Ocheni and Nwankwo (2012) see Sustainable Development as a long-term human and material sustenance. It is the continued existence of programmes long after their establishment. Sustainability is central to all development efforts. In other words, development is seen as sustainable

when it comes to stay and can withstand all the impediments to its survival.

Vocational Skills Acquisition and Sustainable Development

Facts emerging from developed countries have revealed that effective training in VSA seems to have greatly contributed to the technological excellence and economic self-reliance of industrialised nations. In view of this, Ezeji and Okorie (1999), while stressing the importance of VSA to national growth, asserted that Nigeria's social and economic problems will be drastically reduced, if people are given adequate vocational skills acquisition training.

The importance of VSA and entrepreneurship training to national development cannot be underrated taking into consideration the intended objectives, which amongst others, include improved standard of living of the people, employment generation as well as reduction in the rate of crime. Ogundele, Akingbade and Akinlabi (2012) revealed that youth empowerment is influenced through acquired skills. When youths acquire skills, they will be gainfully employed and be useful to themselves and the society at large. The authors further revealed that VSA should play a crucial role in the social and economic development of a nation. The development of a nation's economy is predicated on the quality of skilled human capital in the pool. VSA equips people with skills that will make them to be productive entrepreneurs as it encourages creative and innovative ideas; enlarges the economic gain and increases personal freedom.

The business environment is changing at a fast pace due to the rapid emergence of technology and globalization. This has added to the increase in demand of valuable human skills necessary to respond to such drastic changes for economic progress. As a channel for entrepreneurial skills acquisition, VSA plays the role of improving the economic situation of a nation in a sustained manner through production and distribution of goods in different areas of specialisation. This is in line with the views of Lawal (2014), who opined that for a country to advance socially,

economically and technologically, its citizens must be creative and productive with a majority becoming job creators rather than seekers. The author concluded by emphasizing that optimum attention and recognition is to be given to the promotion of VSA in Nigeria, if the country wants to attain great achievement of productivity and sustainable development.

To achieve sustainable development, attention should be paid to strengthening the bridge between education and preparation for the world of work with attention paid to improving VSA in Nigeria. According to Oguejiofor & Ezeabasili (2014), the technological development of a nation depends on the available technical know-how, the rudiment of which is a function of the quantity and quality of available vocational and technical training. It is a clear view that the current preoccupation with paper qualification in Nigeria reduces the socio-economic opportunities of those who are more oriented towards work than academics. Unemployment is everywhere in Nigeria because most of our youths lack employability skills that are often acquired through VSA programme.

The society needs competent fashion designers, hair stylists, auto mechanics, carpenters, plumbers, electricians, electronics and computer operators, database and web technicians (and other personnel in this category) to function well. According to Enahoro (2008), VSA is what Nigeria needs presently to reshape her crumbling socio-economic status because it is the type of training directed towards the preparation for the world of occupation since its recipients are equipped to face the challenges of the world of work. Enahoro further stated that VSA entails the enrichment of the capabilities that influence the effective psychomotor and cognitive domains of individual in readiness for entry into the world of work in order to satisfy their intrinsic and extrinsic values, work, and aspirations such that local and national needs would be met.

VSA can play a vital role in the stability and security of Nigeria's economy. The more the numbers of vocational skilled

entrepreneurs the more money there is to be made and kept within the economy thereby translating to sustainable development. It takes less time than a traditional three-year, or four-year programmes from college, polytechnic and university respectively; it can be learned in a few months to two years at any vocational training institutes/centres.

Challenges facing Vocational Skills Acquisition in achieving Sustainable Development in Nigeria

There are numerous challenges facing VSA which has affected negatively our national life and sustainable development efforts. Among these challenges are:

- i. Inadequate and state-of-the-art training facilities and equipment:** Most vocational centres in Nigeria do not have adequate workshops and laboratories let alone usable facilities and where they exist, they are grossly inadequate. It is not an overstatement to say that what is seen and referred to as workshop in our vocational centres today is an eye-sore. This is in line with the submission of Ogunyemi & Ojelabi (2019) when they mentioned that Nigeria's vocational education system often lacks adequate infrastructure, modern equipment, and appropriate learning environments, making it difficult for learners to acquire practical skills.
- ii. Poor funding of VSA programme:** In Nigeria, just as the allocation to education is quite minimal, so also is the allocation that comes to the non-formal education sector to which VSA belongs. Okeke and Eze (2010), reported that sufficient fund has not been channeled to vocational education and training which is a major problem plaguing the system. Similarly, Ugiagbe in Okeke (2010) cited in Oguejiofor & Ezeabasili (2014) observed that poor funding cause acute shortage of the necessary facilities needed for effective implementation of the programme. Similarly, Ezeani & Uzoka (2020) posited that inadequate budget allocation results in a lack of resources for vocational skills training materials, facilities, and instructor salaries. This hampers the quality and accessibility of vocational training programmes.
- iii. Poor remuneration of instructors at the vocational centres:** Many vocational centres across the country are inadequately staffed because of poor remuneration of the instructors. This is due to lack of interest from our leaders especially those who feel that this area does not have an impetus for sustainable development.
- iv. Shortage of qualified instructors:** Acquisition of skills requires that strict attention and supervision be given to every learner. In a situation where you have 100 learners to a trainer, individualized instruction becomes very difficult especially when there is shortage of qualified instructors. In a similar vein, Eze & Okafor (2017) said that shortage of well-trained instructors who are experts in their respective fields hampers the quality of trainees. Instructors may not possess the necessary practical experience to effectively teach vocational skills. As a result, the aim of the programme may be defeated.
- v. Poor public impression and apathy to VSA:** VSA in Nigeria has suffered serious stigmatization and obscurity in the past. Parents prefer their children to study courses like pharmacy, medicine, law, and accounting among others, as observed by Olufunke, (2003) because they regard vocational training as a programme for illiterates and drop-outs. Buttressing this, Achor (2015) said that Vocational training is often considered inferior to academic education in Nigerian society. This perception discourages people from pursuing vocational training and leads to shortage of skilled workers in critical sectors.

Conclusion

The economic and social development of contemporary Nigeria is invariably linked to the quality of its human capital. Appropriate skills training and acquisition are essential for socio-economic progress. This paper addressed the importance of the implementation of vocational skills acquisition programmes for sustainable development in contemporary Nigeria. The traditional educational system in Nigeria has placed greater emphasis on academic qualifications which has resulted in a large pool of semi-skilled and unskilled workforce. This lack of vocational skills has been a major impediment to the economic progress of the country. In order to close this gap, there is an urgent need for the implementation of an effective and innovative vocational skills acquisition programme. Such a programme must be designed to provide comprehensive vocational skills training to individuals, different sectors and to the Nigerian workforce as a whole. It must also be contextualized to the specific needs of the Nigerian labour market, as well as its economic and social system.

Going by the discussions above, it is therefore concluded that achieving sustainable development in Nigeria is dependent on putting up mechanisms to ensure a strong VSA programme owing to its potential for job creation, poverty reduction, and reducing insecurity, among others. It is against this background that the following recommendations were proffered for effective VSA in Nigeria.

Recommendations

The followings are recommendations to counter challenges in vocational skills acquisition programmes in Nigeria:

1. To address the lack of adequate workshops and laboratories in vocational centres, the government and private sector should collaborate to invest in the modernization of training facilities. Public-private partnerships (PPPs) can be a strategic approach to fund the development of state-of-the-art infrastructure. Additionally, vocational

centers should seek international aid and grants specifically aimed at improving educational infrastructure. Establishing partnerships with international organizations can also facilitate the donation of modern equipment and technology.

2. The government should prioritize the allocation of funds to vocational education within the national budget. Advocating for policy reforms to increase funding is essential. Furthermore, exploring alternative funding sources such as international grants, corporate social responsibility (CSR) contributions from companies, and non-governmental organization (NGO) support can help bridge the funding gap. Creating a dedicated vocational education fund, supported by both public and private sectors, could ensure consistent financial support.
3. To improve the remuneration of vocational instructors, it is essential to revise salary structures to make them competitive with those in other educational sectors. Introducing incentive schemes such as performance bonuses, professional development opportunities, and career advancement prospects can also enhance job satisfaction and retention. The government should establish a minimum wage for vocational instructors that reflects the importance of their role in national developments.
4. To mitigate the shortage of qualified instructors, there should be a concerted effort to train and certify more vocational teachers. This can be achieved by expanding teacher training programs and providing scholarships for individuals pursuing careers in vocational education. Additionally, inviting industry professionals to take up teaching roles on a part-time basis can help bridge the gap between industry practices and educational instruction.
5. Changing the public perception of vocational education requires a robust

awareness campaign that highlights the benefits and success stories of vocational training. The government, media, and educational institutions should work together to promote vocational education as a viable and prestigious career path. Introducing vocational training at earlier educational stages and incorporating it into the mainstream curriculum can also help normalize it.

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MODELLING AND FORECASTING NIGERIAN UNDER-FIVE MORTALITY AND ITS RELATED FACTORS USING SUPERVISED LEARNING ALGORITHMS

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ABSTRACT

The study explore the determinant of under-five mortality in Nigeria with 2018 Demographic and health suevey data. Three different method of machine learning classification algorithms were applied wichich include Logistic regression, K-nearest neighbor (KNN) and Random forest model. The result showed that current age of the child, currently breasfeeding, birth weight in kilogram, respodent current age, child is twin, birth order number, highest educational level, region, source of drinking water, type of toilet facility is among the top ten (10) importantants predictors of under-five mortality in Nigeria. The study conclude that random forest model provide a better predictive power than the other two models in term of fore-casting associted factors of under-five mortality in the stiudy arera. The random forest model reveals some importantants predictors of under-five mortality in the country, this provide that the model can be use for policy making regarding the survival of under-five mortality in Nigeria.

Keywords: Under-five mortality, Machine Learning, Forecasting, Modeling

INTRODUCTION

The world health organization (WHO) define under-five mortality rate as the probability for a child born in a specified year to die before reaching the age of five, if subjected to age-specific mortality rates of that period (WHO,2018). It is usually expressed as number of deaths per 1,000 live births. It is a major indicator for assessing the quality of a country's healthcare system. The world has recognized that under-five mortality is a major challenge to humanity that should be addressed, hence the inclusion in the Sustainable Development Goals (SDGs). Health target number 2 under goal 3 of SDGs aims to reduce under-five mortality to 25 per 1,000 live births by 2030. Over the year's studies have shown that the under-five mortality rates of developing countries lag far behind that of the developed countries. The world made remarkable progress in child survival in the past three decades, and millions of children have better survival chances than in 1990 as 1 in 26 children died before reaching age five in 2021, compared to

1 in 11 children in 1990 (WHO,2018). Moreover, according to the united nations International Childrens Emergency Fund (UNICEF), Progress in reducing child mortality rates has been accelerated in the 2000s period compared with the 1990s, with the annual rate of reduction in the global under-five mortality rate increasing from 1.8 per cent in 1990s to 4.0 per cent for 2000-2009 and 2.7 per cent for 2010-2021 (UNICEF,2021)

The global under-five mortality rate declined by 59 percent, from 93 deaths per 1,000 live births in 1990 to 38% in 2021 (UNICEF, 2021). Despite this considerable progress, improving child survival remains a matter of urgent concern. In 2021 alone, roughly 13,800 under-five deaths occurred every day, an intolerably high number of largely preventable child deaths.

1.2 MORTALITY IN SUB-SAHARAN AFRICA

Sub-Saharan Africa continue to face the steepest odds of survival in the world the under-five mortality rate is estimated at 76 deaths per 1,000 live births in 2019, that is equivalent to 1 child in 13 dying before reaching age 5, which is 20 times higher than the rate of 1 in 264 in the region of Australia and New Zealand and 20 years behind the world average, which achieved a 1 in 13 rate by 1999. At the country level, the under-five mortality rates in 2019 ranged from 2 deaths per 1,000 live births to 117 and the risk of dying before the fifth birthday for a child born in the highest mortality country was about 70 times higher than in the lowest-mortality country. Sub-Saharan Africa is the region where all five countries with mortality rates above 100 deaths per 1,000 live births are located; and where 31 of the 37 'high mortality' countries (with under-five mortality rates above 50 deaths per 1,000 live births) are found (Amanuel.K etal, 2022).

Evidence from the United Nations International Childrens Emergency Fund (UNICEF) indicated that the global burden of under-five deaths weighs most heavily on just two regions. About 53 per cent of all under-five deaths in 2019 is 2.8 million occurred in sub-Saharan Africa, and roughly 1.5 million children died in 2019 before reazzching age 5 in Central and Southern Asia. These two regions alone accounted for more than 80 per cent of the 5.2 million global under-five deaths in 2019, but they only accounted for 52 per cent of the global under-five population. Nearly half (49 per cent) of all under-five deaths in 2019 occurred in just five countries which include Nigeria, India, Pakistan, the Democratic Republic of the Congo and Ethiopia while Nigeria and India alone account for almost a third,(UNICEF,2020).

1.1 UNDER-FIVE MORTALITY IN NIGERIA

According to the Nigeria Demographic Health survey (NDHS, 2018), the under-five mortality rate in Nigeria is 132 per 1000 live

births meaning that one in eight Nigerian children never reach the age of five. Infant deaths which account for half of child mortality have declined from 87 per 1000 live births in 1990 to 67 in 2018. One Nigeria women dies in childbirth every ten minutes and one Nigeria child under-five years of age dies every minute. It is apparent through the elevated mortality rates that the lack of access to quality delivery services is an issue of immense importance in Nigeria. Problems such as cost for treatment, deplorable state of the health facilities, distance to health facility, lack of awareness and knowledge for informed decisions and referral are some of the many difficulties stated by caregivers in describing difficulty with accessing healthcare (WHO, 2019). Integrated management of childhood illness (IMCI) and Intergrated Community case Management (ICCM) are the key child survival thrust being used by the Nigerian Government to address the unacceptably high under-five morbidity mortality indices.

PROBLEM STATEMENT

According to the world health organization (WHO), under-five mortality remains to be a major concern in many part of the world. In developing countries under-five mortality has been a serious problem. Under-five mortality remains a major public health challenge in Nigeria despite the substantial global decline in childhood deaths. Currently Nigeria has the highest reported number of under-five mortality in Africa and ranks as having the second with highest number of under-five mortality worldwide after India (WHO, 2022). Generally, nearly one million children age under- five years die in Nigeria annually and more than 60% of these deaths occur between 1 and 59 months of life. Evidence from the Nigeria demographic and health surveys (NDHS) show that in the past 10 years from 2008 to 2018 under-five mortality rate at 157 per 1000 live birth in 2008 to 138.8 per 1000 live births in 2020, It's still high and the targeted millennium development goal (MDG) to reduce under-five mortality to 25 per 1,000 live births by 2030.

Previous study have investigated several predictors of under-five mortality in Nigeria, Azurite EC, et al (2019) use univariate and multivariate logistic regression to study the determinants of under-five mortality in south eastern Nigeria, Similarly, Osita K. Ezehe, et al (2021) investigate Under-5 Mortality and Its Associated Factors in Northern Nigeria: Evidence from 22,455 Singleton Live Births (2013–2018) with generalize linear model, logistic regression and mixed model and Yaya et al (2017) applied regression analysis to study the prevalence and determinants of childhood mortality in Nigeria, Therefore to the best of my knowledge machine learning is yet to be apply to predict under-five mortality and its associate factors in Nigeria.

According to Ethel Alpaydin (2020), Machine learning provides solutions for all possible problems in vision, speech, and health robotics. Several studies have applied machine learning to solve health related problems, Kumar, et al (2020) Also use a machine learning approach for confirmation of covid-19 cases (Positive, Negative, death, release). This means there is no optimal machine learning techniques that fits all situations.

AIM AND OBJECTIVES

The study aim to apply three supervised machine learning approach to predict under-five mortality and to identify some importance associate risk factors with a nationally representative data on children aged below (5) years and the specific objectives are as follows:

- 1) To predict under five mortality using machine learning algorithms, Logistic regression, Random forest (RF) and K-nearest neighbors (KNN).
- 2) To compare the performance of the three widely supervised machine learning (ML) algorithms, Logistic regression, Random Forest (RF) and K-nearest neighbors (KNN) models.
- 3) To identify some importance risk factors associated with under five mortality

- 4) To use the findings from the study to inform and strengthen appropriate national policies and intervention strategies aimed at reducing under-five mortality in Nigeria.

RELATED LITERATURE REVIEW

The review was basically base on aim, data, methods, findings and conclusion of the related studies. Several studies have been done in developing countries using survey data and census with aim of investigating key predictors of under-five mortality.

Aayush K. S et al (2016) Applied machine learning in the analysis of infant mortality and its factors using the united states dataset .The study used the birth files of the year 2013 and its important factors were identifies using Kendall rank correlation coefficient. A randomized split of 80% to 20% was used to build a training dataset of 32432 cases and a testing dataset of 8081 cases out of 40541 cases. Three different classification models (Logistics Regression, Naïve Bayes and Lagragian Support Vector machine) were use for binary classification problem and three model were fitted with training data and cross validated in 10 folds using the test data. The evaluation metrics were used were accuracy, precision, recall and F1-score. The result determine that the performance of the logistic regression model was best with highest precision score follow by Naïve Bayes and Lagrangian support vector machine. The study also indicated that identifying a mother at high risk is more important than misclassification of a low risk mother given by recall. The result suggested that best model with high precision can be used to predict key factors and high risk mothers and thus they can be given proper medical care to mitigate the risk, hence reducing the infant mortality rate.

Adeyinka et al. (2020) Performed multilevel multinomial logistic regression analysis on data of a nationally representative sample of 29,786 (weighted=30,960) live births delivered 5 years before the survey to 18,497 women aged 15–49 years and nested within

16,151 households and 2227 communities. The findings showed that Determinants of under-five mortality differ across the neonatal, post-neonatal and toddler/pre-school stages in Nigeria. Unexpectedly, attendance of skilled health providers during delivery was associated with an increased neonatal mortality risk, although its effect disappeared during post-neonatal and toddler/pre-school stages. Also the study indicates that maternal-level factors such as maternal education, contraceptive use, maternal wealth index, parity, death of previous children, and quality of prenatal care accounted for high variation (39%) in childhood mortalities across the communities. The inclusion of other compositional and contextual factors had no significant additional effect on childhood mortality risks across the communities.

Azuike EC.etal (2019) applied univariate binary logistic regression to examine the association between the individual explanatory variables and the outcome variable finding from the result following multivariate analysis a number of determinants of under-five mortality were identified. They include: Geo-political zones of the children, Gender, Mother's educational level, Mother's number of births in the preceding 5 years, Mother's marital status, Maternal age, Mother's type of family planning method, Child's birth order, Family size, Family wealth index and Place of residence (urban/rural).The study finally conclude that Multiple logistic regression has enabled us to identify important determinants of under-five mortality in Nigeria and recommend that policy makers should consider the determinants as they design interventions to combat under-five mortality.

Brnabic,A&Lisa M. H.(2021),Investigate Systematic literature review of machine learning methods used in the analysis of real-world data for patient-provider decision making, this review found a wide variety of approaches, methods, statistical software and validation strategies that were employed in the application of machine learning methods

to inform patient-provider decision making. Based on these findings, there is a need to ensure that multiple modeling approaches are employed in the development of machine learning-based models for patient care, which requires the highest research standards to reliably support shared evidence-based decision making. Models should be evaluated with clear criteria for model selection, and both internal and external validation is needed prior to applying these models to inform patient care. Few studies have yet to reach that bar of evidence to inform patient-provider decision making.

Ayele, D etal(2017) Study the Survival analysis of under-five mortality using Cox and frailty models with 2011 Ethiopian Demographic and Health survey data. From the results, it was found that under-five children who live in Addis Ababa had a lower hazard (risk) of death (p value=0.048). This could be as a result of higher health facilities and living standards in Addis Ababa, compared to other regions. Under-five children who lived in rural areas had a higher hazard (risk) of death compared to those living in urban areas. In addition, under-five children who lived in rural areas had 18% (p value=0.01) more hazard (risk) of death than those living in urban areas. Furthermore, with older mothers, the chance of a child dying before reaching the age of 5 is lower. The research that the chances of a child dying before reaching the age of 5 are less if the mother does not become pregnant again before the child reaches the age of 5. Therefore, giving birth when older and not becoming pregnant again before the child reaches the age of 5 is one means of reducing under-five mortality.

Deprez et al. (2017) showed that machine learning algorithms are useful to assess the goodness of fit of the mortality estimates provided by standard stochastic mortality models (they considered Lee-Carter and Renshaw-Haberman models). They applied a regression tree boosting machine to analyze how the modeling should be improved based on feature components of an individual, such

as its age or its birth cohort. This (non-parametric) regression approach then allows us to detect the weaknesses of different mortality models. In addition, they investigated cause-of-death mortality.

Dominic E. Azuh (2019) study Factors influencing the survival of under-five children among women visiting government health care facility in semi-urban communities in Nigeria. Descriptive statistics and regression analyses were applied and result indicate that Knowledge of child preventable diseases, birth spacing, and duration of breast feeding and immunization status showed significant influence on child survival and conclude that knowledge of child preventable diseases and factors related to maternal child care practices were found to influence child survival in this communities.

Desalegn Bekele and Getu Mosisa (2021) Conduct Descriptive statistics and Multivariable logistic regression analysis for the determinants of Diarrhea in Under-Five Children among health Extension Model and Non-Model families. The two-week childhood diarrhea prevalence in under-five children was 7.8% in model and 27.8% in non-model families. Childhood diarrhea in under-five children was 2.4 times more likely among health extension non-model families than model families. Gobir A.A etal (2018) employed multivariate analysis and suggested that children of uneducated fathers were more likely to have been ill compared to those of educated fathers (RR = 1.20; 95% C.I = 0.78 – 1.91). Children who were weaned abruptly and transferred to their aunts or grandmothers (geographic weaning) were more likely to have been ill compared to those weaned normally (RR = 1.71; 95% C.I = 0.97 – 2.03). The result indicated that several factors like paternal education and geographic weaning are social determinants of health of under-fives in the study area. Improved access to formal education, Health education on effects of harmful cultural practices; community-based health insurance scheme and rural development are recommended.

Huda M. Haroun etal (2014) Applied chi-square to determine the level of infant and under-five mortality rates and to examine the effect of socioeconomic, demographic and environmental factors on the health status of the children under five years. The outcome of the study showed that Infant mortality rate was 77 per 100 and child mortality rate was 67 per 100. The results revealed that immunization, child order, child birth weight, birth interval and contraceptive use had a significant influence on the mortality of children under the age of five. The mother's level of education is highly significant on the mortality of children under five years old.

Justice Moses K. Aheto (2019) employed Single level binary logistic and multilevel logistic regression model to investigate determinants of under-five mortality in Ghana. The fit of the model was checked using Variance Inflation Factor and Likelihood Ratio tests. The Receiver Operating Characteristic curve was used to assess the predictive ability of the models. A p -value < 0.05 was used to declare statistical significance. The study produced a good predictive model and identified increase in number of total children ever born, number of births in last 5 years, and mothers who did not intend to use contraceptive as critical risk factors that increase the odds of under-five mortality. Also, children who were born multiple and residing in certain geographical regions of Ghana is associated with increased odds of under-five mortality. Maternal education and being a female child decreased the odds of under-five mortality. No significant unobserved household-level variations in under-five mortality were found. The spatial map revealed regional differences in crude under-five mortality rate in the country. The study was concluded by identified critical risk factors for under-five mortality and strongly highlights the need for family planning, improvement in maternal education and addressing regional disparities in child health which could help inform health policy and intervention strategies aimed at improving child survival.

Las Johansen B. Caluza (2018) applied descriptive-correlation design using data mining techniques specifically the decision tree algorithm, the annual population growth shows a very significant role in achieving a model in this study. Also, the generated model revealed very high acceptability of the model with a weighted average of 97.4% value of all classes of mortality rate under five years old. Finally, the generated model is an excellent baseline in predicting child mortality under five years old in the Philippines. However, further studies may be conducted to enhance this model.

M. A. Hussein et al. (2021) employed descriptive techniques to examine the levels and differentials of under-five mortality both in Kenya and in Egypt. In addition, background characteristics of women who had a last birth within the five-year period before the surveys were also investigated on the backdrop of under-five mortality. In descriptive analysis, Chi-square tests were used to test for existence of association between categorical variables, i.e. the dependent variable (child death) and some socio-demographic and behavioral indicators (independent) that determine childhood mortality.

The second technique was inference analysis, the study has a categorical response variable with only two possible outcomes (child alive/child dead), binary logistic regression model was used. The technique is useful in modeling the relationship between predictor variables and a categorical response variable. While predicting the significance of the regression model, binary logistic regression is crucial in describing the relationships between the socio-demographic and behavioral determinants and under-five mortality. It is worth mentioning that all predictor variables in this study are also categorical. The findings show that about half (51 percent) of the women in Egypt and 56 percent of their counterparts in Kenya who reported having a last birth during the study period were under 30 years of age. More than 60 percent of the births in the two countries

were reported by women aged 25 - 39. In addition, majority of the women were living in rural areas—57 percent in Egypt and 62 percent in Kenya, respectively. In terms of regional distribution, majority of births were reported in Rural Lower Egypt (28 percent). On the other hand, Rift Valley in Kenya reported majority of births (30 percent). Frontier governorates (6 percent) in Egypt and North Eastern (4 percent) and Nairobi (3 percent) in Kenya reported the lowest births; the study also pointed out those women with higher education in Egypt reported one percentage point higher births (17 percent) compared with those who never attended school (16 percent). Considering educational attainments of women who reported births, the study observed an interesting trend. Women with secondary level of education reported approximately three in five births (58 percent) in Egypt, while more than half of births (52 percent) in Kenya occurred among women with primary education. Another inverse relationship between the two countries in terms of reported births by wealth quintiles. Women in the rich quintile in Egypt reported 45 percent of births, while women in the poor quintile in Kenya reported 43 percent of births. Almost all births in Egypt were reported by married women (98 percent). In Kenya, about one in five births occurred among women who were not in union (not married, widowed, divorced or separated).

Khan, M.A et al (2021) examine trends and puts forward projections of under-5 mortality (U5M) in Bangladesh and identifies the effects of maternal high-risk fertility behaviors and use of healthcare services. Chi-square (χ^2) test was used to identify if there was any association with maternal high-risk fertility behaviors and use of healthcare services. A multivariate logistic regression model was used to determine the effects of fertility behaviors and healthcare usage on the occurrence of U5M adjusting with confounders. The study showed that U5M declined from 82.5 to 41.0 per 1000 live births during 1994–2014 and is projected to further reduce to 17.6 per 1000 live births by

2030. The study identified a noticeable regional variation in U5M with maternal high-risk fertility behaviors including age at birth <18 years (aOR: 1.84, 95% CI: 1.23–2.76) and birth interval <24 months (aOR: 1.56, 95% CI: 1.02–2.37) found to be significant determinants. There was a 39–53% decline in this rate of mortality among women that had used antenatal care services at least four times (aOR, 0.51, 95% CI: 0.27–0.97), delivery care (aOR, 0.47, 95% CI: 0.24–0.95), and had received postnatal care (aOR, 0.61, 95% CI: 0.41–0.91) in their last birth. Cesarean section was found to be associated with a 51% reduction in U5M (aOR, 0.49, 95% CI: 0.29–0.82) compared to its non-use.

The research concluded that with the current trend of reduction, Bangladesh will achieve the MDG target before the deadline. The study also found that maternal high-risk fertility behaviors and non-use of maternal healthcare services are very prevalent in some regions of Bangladesh and have increased the occurrence of U5M in those areas. This suggests therefore, that policies and programmes designed to reduce the pregnancy rates of women that are at risk and to encourage an increase in the use of maternal healthcare services are needed.

Masrie. G. et al (2020) use the Kaplan-Meier method and Cox proportional hazards regression model to identify the survival status and the proximate determinants associated with infant mortality. The study used the 2016 Ethiopian Demographic and Health Survey data for all 10641 live births and survival data of all 2826 infants born five years before the survey were reviewed. The result of Kaplan-Meier estimation determined that about 65% of infant deaths occur early in the month of life immediately after birth and reduced in the later months of follow-up time and the result of Cox proportional hazards model indicates that mothers' level of education, preceding birth interval, plurality, size of child at birth and sex of child were significant predictors of infant mortality. The study showed that risk

of dying in infancy was lower for infants whose mothers had secondary education level. The study also recommended that close monitoring and supporting reproductive age mothers to increase the uptake of family planning and antenatal care follow-up will increase the survival of infants.

Osita K. Ezehe et al (2021) investigated Under-5 Mortality and its Associated Factors in Northern Nigeria. Findings from this study showed that children younger than 5 years old whose mothers did not use contraception had significantly greater odds of dying in the U5M period than those who had access to contraceptives.

Sreehari. J (2020) Study Supervised machine learning algorithms SVM, Random Forest, KNN, Naive Bayes Algorithm, and Softmax Algorithm have been applied for the stock price prediction. The results reveal that for large dataset, Random Forest Algorithm outperforms all the other algorithms in terms of accuracy and when the size of the dataset is reduced to almost half of the original, and then Naïve Bayes Algorithm shows the best results in terms of accuracy. Also, reduction in the number of technical indicators reduces the accuracy of each algorithm in predicting the stock market trends.

After reviewing related literatures, it was observed that no much studies were done to predict under-five mortality and its associated factors with supervised machine learning algorithms in Nigeria. Therefore, there is a need to do comprehensive study to find out the most risk factors of under-five mortality rate in Nigeria with machine learning approach.

MATERIALS AND METHODS

The data source for this study is secondary data from the 2018 Nigeria demographic and health survey data (NDHS). The 2018 NDHS is a nationally probability sample survey with approximately 42,000 households (NDHS 2018).

The survey used a two-stage sample design based on Population and Housing Census of the Federal Republic of Nigeria (NPHC),

which was conducted in 2006 by the National Population Commission. The sample for the 2018 NDHS was a stratified sample selected in two stages. Stratification was achieved by separating each of the 36 states and the Federal Capital Territory into urban and rural areas. In total, 74 sampling strata were identified. Samples were selected independently in every stratum via a two-stage selection. Implicit stratifications were achieved at each of the lower administrative levels by sorting the sampling frame before sample selection according to administrative order and by using a probability proportional to size selection during the first sampling stage.

In the first stage, 1,400 EAs were selected with probability proportional to EA size. EA size was the number of households in the EA. A household listing operation was carried out in all selected EAs, and the resulting lists of households served as a sampling frame for the selection of households in the second stage. In the second stage's selection, a fixed number of 30 households was selected in every cluster through equal probability systematic sampling, resulting in a total sample size of approximately 42,000 households. The household listing was carried out using tablets, and random selection of households was carried out through computer programming. The interviewers conducted interviews only in the pre-selected households. To prevent bias, no replacements and no changes of the pre-selected households were allowed in the implementing stages.

The survey was successfully carried out in 1,389 clusters after 11 clusters with deteriorating law-and-order situations during fieldwork were dropped. These areas were in Zamfara (4 clusters), Lagos (1 cluster), Katsina (2 clusters), Sokoto (3 clusters), and Borno (1 cluster). In the case of Borno, 11 of the 27 LGAs were dropped due to high insecurity, and therefore the results might not represent the entire state. The eligible women for the interview were women age 15-49 years in the sample households. Those who were either permanent residents of the selected

households or visitors who stayed in the households the night before the survey were eligible to be interviewed. Out of 42,121 women age 15-49 were identified for individual interviews; interviews were completed with 41,821 women, yielding a response rate of 99%. In the subsample of households selected for the male survey, 13,422 men age 15-59 were identified and 13,311 were successfully interviewed, yielding a response rate of 99% (NDHS 2018).

The unit of analysis include children under-five years with total sample size of 42000 selected from 1389 clusters across Nigeria. The (2018 NDHS) dataset was downloaded from www.dhsprogram.com website, SPSS version 23 was used to open the data set and R programming Language is used to perform data analysis and processing.

LOGISTIC REGRESSION

Logistic regression sometimes called the logistic model or logit model, analyzes the relationship between multiple independent variables and a categorical dependent variable, and estimates the probability of occurrence of an event by fitting data to a logistic curve. There are two models of logistic regression, binary logistic regression and multinomial logistic regression. Binary logistic regression is typically used when the dependent variable is dichotomous and the independent variables are either continuous or categorical. When the dependent variable is not dichotomous and is comprised of more than two categories, a multinomial logistic regression can be employed. Independent variable (x) is combined linearly using coefficient values to predict dependent variable (y). Suppose the numerical values of 0 and 1 are assigned to the two outcomes of a binary variable. Often, the 0 represents a negative response and the 1 represents a positive response. The mean of this variable will be the proportion of positive responses. If p is the proportion of observations with an outcome of 1, then $1-p$ is the probability of an outcome of 0. The ratio $p/(1-p)$ is called the odds and the logit is the logarithm of the

odds, or just log odds. The logistic regression model is given by:

$$\text{Logistic regression } (p) = \ln\left(\frac{p}{1-p}\right)$$

The equation for sigmoid function are given by

STEPS FOR LOGISTIC REGRESSION ALGORITHMS

Step 1: Input set of training pair samples, call the input sample features x_1, x_2, \dots, x_n and the output results be y .

Step 2: Let $P(x)$ be a linear function of x . Every increment of a component function of x would add or subtract to the probability.

Step 3: Calculate odds ratio given as $Odds = \frac{p}{1-p}$

Where p stands as the probability of positive event

Step 4: Define logit function in order to evaluate the logarithm of odds ratio given as $\logit(p) = \log\left(\frac{p}{1-p}\right)$

Step 5: Logit function take input values in the range 0-1 and transform them to values over the entire real range which express the linear relationship between feature values and the log-odds.

Step 6: Use Logistic function/Sigmoid function to predict the probability in order to classify the class.

Step 3: Output Set of weights (W_i), one for each feature whose linear combination predicts the value of y .

K-NEAREST NEIGHBOR (KNN) ALGORITHMS

According to Najat.A etal(2019) K-Nearest Neighbor (K-NN) classifier is one of the simplest and most widely used in classification algorithms and was initiated by Fix and Huges in 1951 and modified by Cover and Hart (1967).The K-NN techniques can be used in both classification and regression problem.

K-NN depend on finding the distance between the tested and the training data samples in order to identify it nearest neighbor and the tested samples is then assigned to the class of it nearest neighbor.

K-Nearest Neighbor is a nonparametric algorithm, which means does not make any assumption on underlying data. it is also called a lazy leaner algorithm because it does

not learn from training set immediately instead it stores the dataset and at the time of classification, it performs an action on the dataset.

The K-NN algorithms at the training phase just stores dataset and when it gets new data then it classifies that data into a category that much similar to the new data.

The K-value is a parameter in K-NN that stands for the number of nearest neighbor. When $k=1$, the new data object is assigned to the class of its nearest neighbor and the neighbors are taken from a set of training data object where classification is already known. It works best with numerical data and various numerical measure have been applied such as Hamming distance function, Euclidean distance function, Manhattan distance function, Murkowski distance function. The

most widely used distance function is with Euclidean distance.

$$d(x, y) = \sqrt{\sum_{i=1}^n (x_i - y_i)^2}$$

Euclidean distance is defined by:

STEPS K-NN ALGORITHMS

Step 1: Select the number K of the neighbors.

Step 2: Calculate the Euclidean distance.

Step 3: Take the K nearest neighbors as per the calculated Euclidean distance.

Step 4: Among these K neighbors, count the number of the data points in each category.

Step 5: Assign the new data points to that category for which the number of the neighbor is maximum.

Step 6: The model is ready.

RANDOM FOREST

A random forest is a supervised machine learning algorithm that is constructed from decision tree algorithms. It is a machine learning technique that is used to solve regression and classification problems. It utilizes ensemble learning, which is a technique that combines many classifiers to provide solutions to complex problems.

A random forest algorithm consists of many decision trees; the forest generated by the random forest algorithm is trained through bagging or bootstrap aggregating. Bagging is an ensemble meta-algorithm that improves the accuracy of machine learning algorithms. The (random forest) algorithms establish the outcomes based on the predictions of the decision trees. It predicts by taking the average or mean of the output from various trees. Increasing the number of trees increases the precision of the outcome.

A random forest eradicates the limitations of a decision tree algorithm. It reduces the overfitting of datasets and increases precision. It generates predictions without requiring many configurations in packages.

TRAINING AND TESTING DATA

Training data and test data are two important concepts in machine learning.

Training data

Observations in the training set form the experience that the algorithms use to learn. In supervised machine learning problems, each

observation consists of an observed output variable and one or more observed input variables.

Test data

The test set is used as a set of observations used to evaluate the performance metric. It's important that no observations from the training set are included in the test set. If the test set does contain examples from the training set, it will be difficult to assess whether the algorithm has learned to generalize from the training set or has simply memorized it.

A program that generalizes well will be able to effectively perform a task with new data. In contrast, a program that memorizes the training data by learning an overly complex model could predict the values of the response variable for the training set accurately, but will fail to predict the value of the response variable for new examples. Memorizing the training set is called overfitting. A program that memorizes its observations may not perform its task well, as it could memorize relations and structures that are noise or coincidence. Balancing memorization and generalization, or overfitting and underfitting, is a problem common to many machine learning algorithms. Regularization may be applied to many models to reduce overfitting. Randomized split of 70% to 30% was done where 70% of the total sample was used as trained data to prepare the models and the

remaining 30% random sample was used as test data to predict the measures of model performance.

STUDY VARIABLES AND MEASUREMENT

In this study, the outcome variable was under-five mortality measured as a binary outcome, under-five mortality measured as being alive (coded as 0) or dead (coded as 1). Twenty seven(27) predictors (features) used in this study are mother’s age at birth, highest educational level, mother’s body mass index (BMI), Currently breastfeeding, Child alive, whether the child was wanted, sex of the child, birth order, child is twin, age in five years, given child anything other than breast, Birth weight in kg, Current age of child, Size of child at birth, source of drinking water, toilet facility, household wealth index, marital status, place of residence type, region, Native language ,religion, antenatal care visit, Delivery by caesarean, place of delivery, covered by health insurance and Number of antenatal care visit.

RESULT AND DISCUSSION

This deals extensively with the results and discussions obtained from the study. The discussion begins with exploring the relationship between child mortality and various factors in Nigeria. Followed by the modeling procedure and comparison of models performance. Child mortality remains a significant public health issue in many developing countries, including Nigeria. Although there have been efforts to reduce child mortality rates, it remains high in Nigeria, particularly in rural areas.

In this study, logistics regression analysis, K-Nearest Neighbors (KNN), and random forest analysis are used to predict child mortality and various demographic, economic, and health-related factors. It is worth noting that the data used in this study was not balanced, to have a non-bias result, the data was balanced using oversampling method. However, we believe that the findings from this study can still provide valuable insights into the factors associated with child mortality in Nigeria.

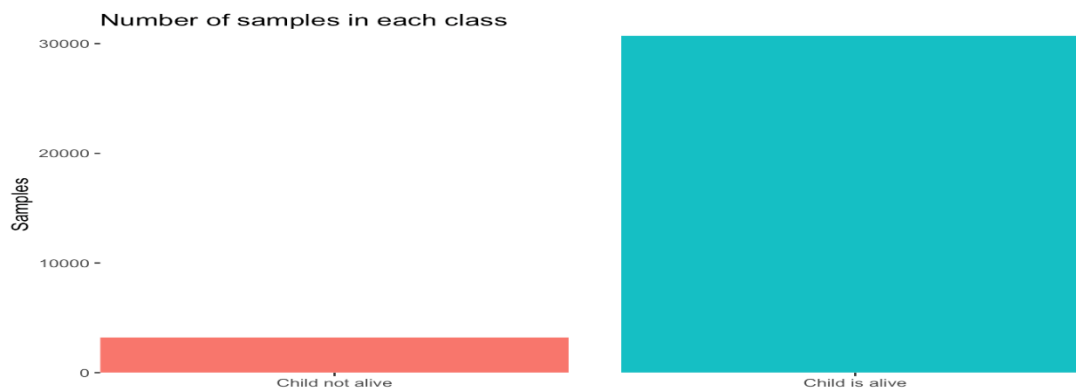


Figure 4.1: Presentation of Number of sample in each Class.

Based on the plot above, it appears that the Child is alive class is the dominant class, with a higher number of samples than the Child not alive class. This suggests that in the dataset being analyzed, there are more instances where a child is alive than instances where a child is not alive.

The difference in the number of samples between the two classes may be an important

factor to consider when interpreting the results of any subsequent analysis. For example, if the data is used to train a machine learning model to predict child mortality, the model may be biased towards predicting the dominant class (i.e., Child is alive) more accurately than the minority class (i.e., Child not alive).

Therefore, it is important to consider the class distribution when interpreting the results of any subsequent analysis and to take steps to address any imbalances that may affect the accuracy of the results. This lead to balancing the data using oversampling.

LOGISTICS REGRESSION

For this logistic regression, we first check for the significant level of the variables to find the most important features in the data set.

Variable	Estimates	Standard error	Statistics	p-value
Sex of child	-0.0770	0.0097	-7.9660	0.0001
Child is twin	0.2532	0.0088	28.9361	0.0001
Birth order number	0.0232	0.0159	1.4625	0.1436
Size of child at birth	0.1335	0.0094	14.2692	0.0001
Place of delivery	-0.0121	0.0117	-1.0336	0.3013
Highest educational level	-0.1214	0.0146	-8.3256	0.0001
Source of drinking water	0.0261	0.0113	2.3076	0.021
Type of toilet facility	-0.0853	0.0120	-7.0990	0.0001
Age in 5-year groups	0.0765	0.0464	1.6 478	0.0993

The p-values in the logistic regression table indicate the statistical significance of each variable in predicting the outcome variable (which is not specified in the given table). In general, a p-value less than 0.05 indicates that the variable is statistically significant and has a significant impact on the outcome variable.

Looking at the table, we can see that there are several variables with p-values less than 0.05, including Sex of child, Child is twin, Size of

child at birth, highest educational level, and Type of toilet facility, and Source of drinking water. This suggests that these variables are statistically significant and have a significant impact on the outcome variable.

On the other hand, Birth order number, Place of delivery, and Age in 5-year groups have p-values greater than 0.05, indicating that they are not statistically significant predictors of the outcome variable.

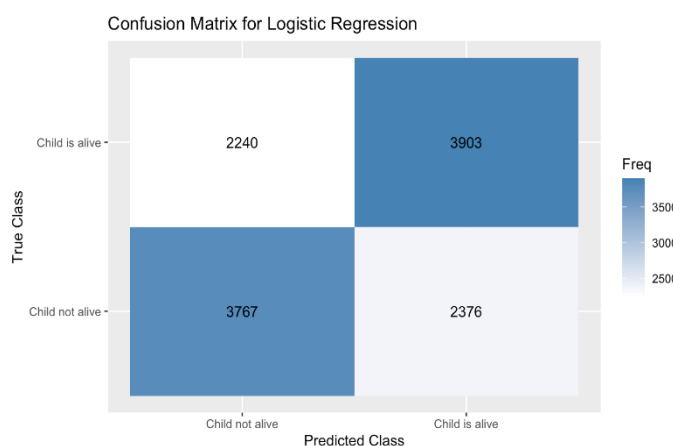


Figure 4.2: Confusion Matrix for Logistic Regression

Furthermore, based on the above provided confusion matrix for a logistic regression model that predicts whether a child is alive or

not, we can see that the model correctly predicted 3767 children as being alive (true positives) and correctly identified 3903

children as not being alive (true negatives). However, the model also made 2240 false positive predictions (predicted that a child is alive when they are not actually alive) and 2376 false negative predictions (predicted that a child is not alive when they are alive).

To further assess the performance of the model, we calculated various performance metrics such as accuracy, precision, recall, and F1 score. The accuracy of the model was found to be 0.624, indicating that the model correctly predicts the outcome about 62.4% of the time. The Specificity of 0.627 indicates

that when the model predicts that a child is alive, it is correct about 62.7% of the time. The Sensitivity of 0.613 means that the model is able to correctly identify about 61.3% of the children who are actually alive.

These metrics suggest that the model has some room for improvement, particularly in reducing the number of false positives and false negatives. To further investigate the performance of the model, we could visualize the confusion matrix to identify any patterns or areas for improvement.

Table 4.1 Performance metrics.

Metric	Sensitivity	Specificity	Accuracy
Score	0.613	0.627	0.624

Overall, these findings suggest that while the logistic regression model can correctly identify a significant proportion of the children who are alive or not alive, there is still room for improvement in its performance. Improving the model's performance would have important implications for identifying children who are at risk of mortality and could ultimately help to improve health outcomes for children.

RANDOM FOREST

The random forest algorithm shows a perfect prediction with an accuracy score of 1, and a recall and precision score of table 4.2

Table 4.2: Random Forest model accuracy metrics

Metric	Specificity	Sensitivity	Accuracy
Score	1	1	1

The confusion matrix (figure 4.3) for a random forest model provides information about the accuracy of the model's predictions. In this case, the confusion matrix shows that the model correctly predicted the class for all instances in the test data.

Specifically, the confusion matrix shows that the model correctly classified 6143 instances as belonging to child is not alive class and 6143 instances as belonging to child is alive class. There are no false positives or

false negatives, indicated by the absence of values in the off-diagonal cells of the matrix. Overall, this confusion matrix suggests that the random forest model performed very well on the test data, accurately predicting the class for all instances with no misclassifications. However, it's important to note that this result may not generalize to new, unseen data and further evaluation of the model's performance is recommended.

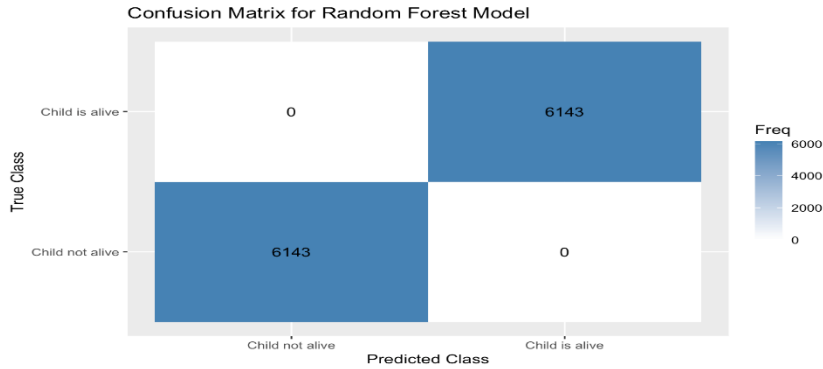


Figure 4.3: Confusion Matrix for Random Forest Classifier

K-NEAREST NEIGHBOR (KNN)

The K-nearest Neighbor also was implemented to check the performance against the other two model.

Table 4.5: K-Nearest Neighbor model accuracy metrics

Metric	Sensitivity	Specificity	Accuracy
Score	0.9937	0.6840	0.8388

To further assess the performance of the model, various performance metrics were calculated such as accuracy, precision, and recall. The accuracy of the model was found to be 0.8388, indicating that the model correctly predicts the outcome about 83.88% of the time. The Specificity of 0.994 indicates that when the model predicts that a child is not alive, it is correct about 99.4% of the time. The Sensitivity of 0.6840 means that the

model can correctly identify about 68.4% of the children who are alive.

These metrics suggest that the model has high sensitivity but lower specificity, indicating that the model is more conservative in predicting that a child is alive. To further investigate the performance of the model, we could visualize the confusion matrix to identify any patterns or areas for improvement

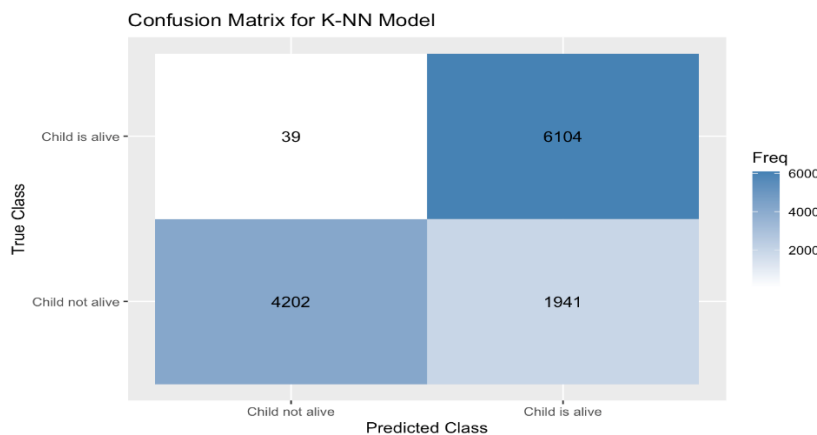


Figure 4.4: Confusion matrix for the K-NN classifier

Based on the provided confusion matrix (figure 4.4) above for a binary classification model that predicts whether a child is alive or not, we can see that the model correctly

predicted 6104 children as being alive (true positives) and correctly identified 4202 children as not being alive (true negatives). However, the ‘model also made 39 false

positive predictions (predicted that a child is alive when they are not actually alive) and 1941 false negative predictions (predicted that a child is not alive when they are alive). In summary, these findings suggest that the K-NN classifier model can correctly identify a significant proportion of the children who are alive or not alive, with high precision.

However, there is room for improvement in the model's specificity particularly in identifying more of the children who are alive. Improving the model's performance could have important implications for identifying children who are at risk of mortality and ultimately help to improve health outcomes for children

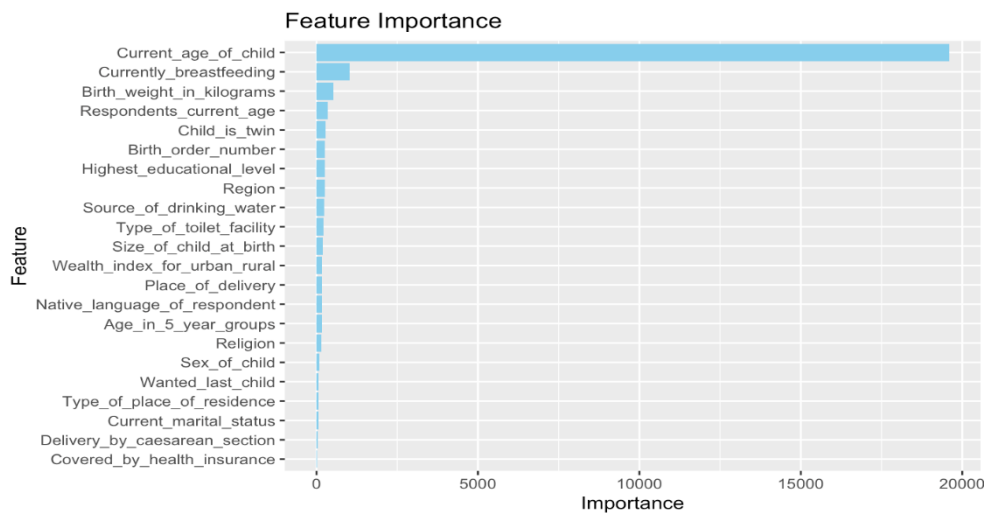


Figure: 4.5: Variables importance features for random forest model

Variables importance measure refers to how importance a variable is in predicting under-five mortality across all the cross validation estimate. The figure above shows the variable importance measure for the random forest model base on their mean decrease. Its Indicate that Current age of the child, currently breastfeeding, Birth Weight in kilogram, Respondent Current age and Child is twin are top five variables in the model while importance factors that appear in the top ten (10) variables are Birth order number, highest educational level, Region, source of drinking water, type of toilet facility.

RECIEVER OPERATIVES CHARACTERESTIC (ROC) CURVE

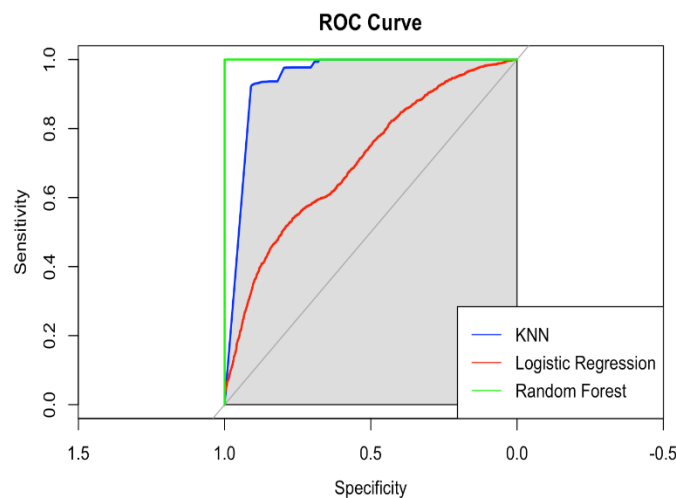


Figure: 4.6: The reciever operatives Characteristics curve (ROC) for each of the three models is displayed in the above figure. When compared to the two other models, the

random forest model curve in the graph indicated that it had the biggest area under the curve (AUC) or almost 100%, Suggesting that it was the most effective in the differentiating between cases that were dead or alive.

CONCLUSION

The study's findings suggest that the random forest model outperforms the k-nearest Neighbor (KNN) and logistic regression models in term of prediction accuracy, as a result it has a 100% accuracy rate. Based on the model's results, the following factors are among the top ten (10) importances predictors of under- five mortality in Nigeria: the child age, whether or not they are currently breastfeeding, the child birth weight in kilogrammes, the respondents's age, whether or not the child is twin, the highest educational level, the region, the type of toilet facility, and the source of drinking water.

The study forecast under-five mortality in Nigeria and identifies the most significant risk variables by utilizing three frequently used machine learning approaches. It is concluded that the random forest model outperforms the other two in terms of predictive capability.

Furthermore, the paper concludes and recommends that elements that have been discovered to have contributed to the increase in under-five mortality should be given more attention in order to bring it down to the lowest possible level.

Similar study was conducted in Ethiopia, Kaplan-Meier method and Cox proportional hazards regression model were employed to identify the proximate determinants associated with the infant mortality in Ethiopia with 2016 Ethiopian demographic and health surveys data, the results of Kaplan-Meier estimation showed that the highest infant deaths occurred in the early months of life immediately after birth and declined in the later months of follow-up time. About 65% of infant deaths occurred during the first months of life. Using the Cox proportional hazard model, it found that mothers' level of education, preceding birth interval, plurality,

size of child at birth and sex of child as significant predictors of infant mortality.

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EFFECT OF ARTIFICIAL INTELLIGENCE AND BIG DATA ON ENTREPRENEURIAL DECISION MAKING OF SMALL AND MEDIUM ENTERPRISES IN LAGOS, NIGERIA

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Abstract

The main objective of this paper is to examine the impact of AI on entrepreneurial decision making, while the specific objectives are to examine the effect of Big Data Analytic Method (BDAM) and Big Data Analytic Tools on entrepreneurial decision and investigate how Big Data (BD) mediates the relationship between BDAM and entrepreneurial decision. Based on a theoretical consideration a model was proposed and 4 hypotheses and research questions were formulated; Survey questionnaires were used in the data collection and a total of 320 useable responses were received from the IT owner/managers of SMEs in Lagos. Partial Least Squares Structural Equation Modeling (PLS-SEM) was employed in the data analysis. The results of the study show that significant relationship was found to exist between BDAM, BDAT and entrepreneurial decision. BD mediates the relationship between BDAM and entrepreneurial decision. BD also mediates the relationship between BDAT and entrepreneurial decision. These results suggest that BDAM and BDAT have emerged as the most important factors for generating meaningful insights for entrepreneurial decision-making and the Volume, velocity, and variety of BD are the fundamental features that ensure cost-effectiveness and innovative information processing techniques that culminate to process automation of accurate entrepreneurial decision-making. The study recommends among others that industry leaders and entrepreneurs must take advantage of the wide range of artificial intelligence applications; BDAM, BDAT and BD in order to enhance their decision-making process for the benefit of society and firms.

Key words: *Artificial intelligence, Big data, big data analytic method, big data analytic tool, entrepreneurial decision making.*

Introduction

Artificial Intelligence (AI) enables new entrepreneurial decisions such as the creation of new ventures as well as the design of corporate spin-outs. Ransbotham et al., (2017) found that more than 80% of organizations see AI as a strategic opportunity, and almost 85% see AI as a way to achieve competitive advantage (Ransbotham et al., 2017; AlSheibani et al., 2020). AI helps entrepreneurs to take high-risk decisions (Baron 2004) under highly unpredictable, ambiguous, time-constrained, and emotionally strained contexts (Wiklund & Shepherd 2008; Agrawal et al. 2019).

Recently, Big data analytics (BDA) has emerged as one of the most important factors

for generating meaningful insights for decision-making (Dubey et al., 2019; Murray et al., 2017). Due to the important role of BDA in organizations, scholarly attention has focused on exploring the links between BDA and decision-making performance in emerging market firms (Shamim et al., 2020). Despite BDA potential, however, there is relatively limited research that has empirically explored the antecedents of data-driven insights for enhancing decision-making quality (Rialti et al., 2019).

Many companies struggle to realize value from AI and BDA (Fountaine et al., 2019). Some studies adduced that the expected benefits of AI may be absent even though companies invest time, effort, and resources

into the adoption process (Makarius et al., 2020), While several studies to date highlighting the potential value that AI and BDA can deliver; that AI helps entrepreneurs evaluate, discover, and exploit opportunities and solutions under business uncertainties (Agrawal et al. 2019). A significant application of AI and BDA results in improved decision making and better business performance (Agrawal et al., 2018). The majority of these studies do not adopt a theoretical lens that can explain how organizations need to be set up in order to utilize these novel technologies toward entrepreneurial decision. In addition, the academic literature that exists to date primarily focuses on the technical elements pertaining to AI and BDA, often disregarding the challenges associated with deploying such solutions and aligning them with entrepreneurial objectives. This has led to several commentaries and research studies arguing that it is important to understand the necessary resources that organizations should foster in order to be ready to deploy AI and BDA technologies to support their core activities (Ågerfalk, 2020). Therefore, the major objective of this paper is to examine the effect AI's components on on entrepreneurial decision making. While the

specific objectives of the study are: To examine the effect of BDAM on EDM; to examine the effect of BDAT on EDM and investigate how BD mediates the relationship between BDAM and EDM.

2 Literature Review

2.1 Artificial Intelligence

Artificial intelligence (AI) refers to machines performing cognitive functions usually associated with human minds, such as learning, interacting, and problem solving (Nilsson, 1991; Huang & Rust 2018; Guibao 2016). Adopting AI seems likely to enable better entrepreneurial decision-making through a more efficient business automation process. AI is documented as one of the new technologies that businesses need to adapt in order to reduce costs, as well as increase performance and competitiveness in the market environment (Vasiljeva et al. 2021).

2.1.1 Big Data Analytics (BDA) and Entrepreneurial Decision

BDA applies new scientific methods to solve problems that were previously impossible to solve, because either the data or the analytic tools did not exist (Davenport 2014; Parmar et al. 2014) Table 1 shows how BDA analytics solve entrepreneurial decisions.

Table 1: Analytic Application and Entrepreneurial Decision

Analytical Application	Business Question	Entrepreneurial Decision
Customer Segmentation	What market segments do my customers fall into, and what are their characteristics?	Personalize customer relationships for higher satisfaction and retention
Propensity to buy	which customers are most likely to respond to my promotion	Target customer based on their need to increase their loyalty to your product line. Also increase campaign profitability by focusing on the most likely to buy
Customer profitability	What is the lifetime profitability of my customer	Make individual business interaction decision based on the overall profitability of customers
Fraud detection	How can I tell which transactions are likely to be	Quickly determine fraud and take immediate action to

	fraudulent?	minimize cost
Customer attrition	Which customer at risk leaving	Prevent loss of high-value customers and let go of lower value customer
Channel optimization	What is the best channel to reach my customer in each segment	Interact with customer based on preference and you need to manage cost

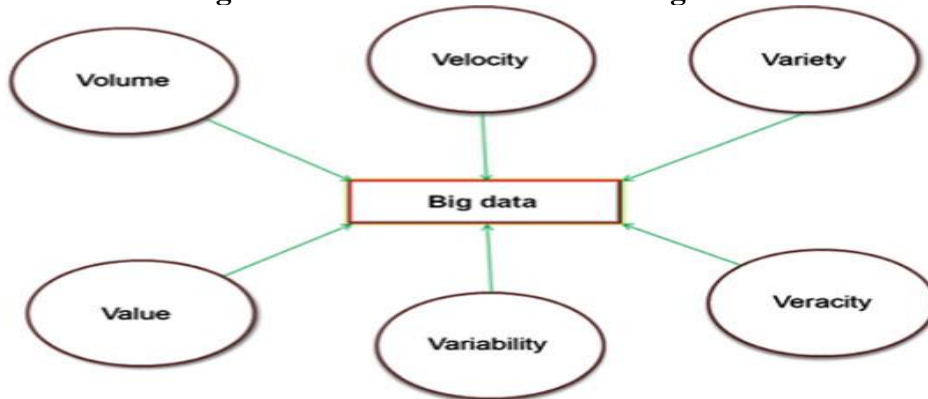
However, it is widely recognized that Nigerian firms have a weak technological capacity to upgrade by absorbing existing advanced technologies. SMEs experience limitations when adopting the latest technology as it is adopted by the big organizations. The number of studies concerning the drivers and outcomes of business digitalization for SMEs remains rather limited and primarily focused on large firms. These technical problems bedeviling SMEs performance in Nigeria are related to the data management, data extraction and functional structure of the organization that supports the new technology implementation might show a different outcome for BDA in Nigeria. Hence this study hypothesizes null hypothesis that:

H01: *BDA might not lead to superior entrepreneurial decision of producing more timely, relevant and actionable information in Nigeria.*

2.1.2. Big Data (BD) and Entrepreneurial Decision

BD is a large volume of high velocity, complex, variable and visible data that requires advanced techniques to enable the collection, storage, distribution, management and analysis of information in order to facilitate decision making (Waller & Fawcett, 2013). It refers to the six basic characteristics of BD, also known as 6 VS, which can be described as following (see Fig. 1) (Natalija, et al, 2017)

Figure 1: Basic Characteristic of Big Data



Accurate data are not obtained solely for the creation of practical insight, but also for their implementation in strategic business decision-making. Therefore, this is expected of entrepreneurs due to the significance of making precise decisions under unpredictable conditions, in order to discover business

opportunities (Shane & Venkataraman 2000). Entrepreneurs take high-risk decisions (Baron 2004) under highly unpredictable, ambiguous, time-constrained, and emotionally strained contexts. Using big data helps entrepreneur to make better decisions on the basis of evidences rather than intuition

Table 2: Big Data and Entrepreneurial Decision

Big data source	Big data driven Insights	Entrepreneurial Decisions	Reference
Google search for a product or brand	<ul style="list-style-type: none"> <input type="checkbox"/> Customer intention to buy a particular product <input type="checkbox"/> Identify customer preference for a particular brand 	Predicting demand for product	Mayer-Schönberger & Cukier, 2013
Google search by specific key words	What particular information citizens are looking for or concerned about	Predict spread of flu by geography by regions	Mayer-Schönberger & Cukier, 2013
Amazon search	Customer intention to buy a particular product	Reminder to customer next time she/he visits the site leading to chances of sale	Amazon.com website
Google search by specific key words	What particular information citizens are looking for or concerned about	Predict spread of flu by geography by regions	Mayer-Schönberger & Cukier, 2013
Amazon search	Customer intention to buy a particular product	Reminder to customer next time she/he visits the site leading to chances of sale	Amazon.com website
Amazon Purchase history	Using association rules mined from billions of records, identify which different products are bought by customers	Product recommendation (customer who bought this also bought)	Amazon.com website
Walmart POS data	<ul style="list-style-type: none"> <input type="checkbox"/> Using association rules mined from billions of records, identify which products customers buy together (market basket analysis) <input type="checkbox"/> Facing disaster such as hurricanes people buy some unusual things like pop-tarts etc. in addition to usual water, batteries, shovels etc. 	<ul style="list-style-type: none"> <input type="checkbox"/> Store layouts redesign to place such products together <input type="checkbox"/> Inventory planning based on buying patterns prior to disasters such as hurricanes 	<ul style="list-style-type: none"> <input type="checkbox"/> Waller & Fawcett, 2013 <input type="checkbox"/> Dyché, 2014

However, there is lack of holistic review of understanding potential of big data for entrepreneurial decision makers.. Entrepreneurial resources are complementary, i.e. they have to work together with other resources to maximize their impact (Barney 1986). The relationship between BD intensity and BDA in affecting entrepreneurial decision is proposed as an example of such complementarities (Masli et al. 2011). BD intensity in itself is not expected to have a

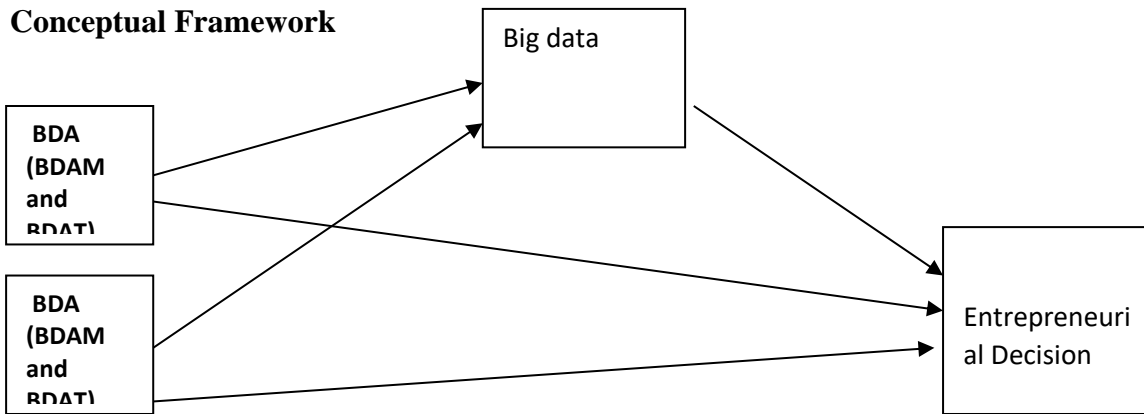
positive effect on ABDM. Just because an organisation has access to/uses a greater volume and variety of rapidly changing data will not per se create an incentive for managers to use that data for decision making – more likely the reverse: In the absence of proper BDA, BD intensity will more likely result in information overload, which will make it more difficult to understand and process the data (Yang et al., 2003; Rousseau 2006), and more likely deter managers from

using it. However, when more sophisticated analytic tools and methods are used with ‘bigger’ data, the analytic outputs are expected to offer greater insights than BDA

based on smaller and less diverse data sets, and will therefore be used more for decision making.

H03: The positive effect of Big Data Analytics Method on entrepreneurial decision is not mediated by the volume, variety and intensity of BD

Conceptual Framework



3. Research Method

A questionnaire survey was carried out among a population of registered SMEs in Lagos, Nigeria. Sekaran, (2003) provides a sample size decision table for population 3,224, 321 in Lagos (SMEDAN, 2013), the appropriate sample size according to sample size Decision Table is 300. In addition to this, the sample size of 300 was increased by 40% to further minimize low response rate from those respondents that might not cooperate (Salkind, 1997). The sum of this percentage (120) with 300 gave rise to total sample size of 420 In total 420 questionnaires survey was used to distribute questionnaire to the respondents, 330 were received. The questionnaires were completed by the IT managers of SMEs. However, only 320 respondents were considered as usable for the purpose of data analysis. The remaining 10 items of questionnaires were excluded from data analysis because they were incomplete or totally blank.

3.1 Measures

In this study, the measure of BDA was adopted from Thirathon et al. (2017). It was operational ized along two dimensions; (a) analytic tools and (b) analytic methods (Acito & Khatri 2014). IT managers of SMEs were

asked to rate their analytics expert/team in terms of various analytic tools and methods (skills) on a seven-point Likert scale in terms of frequency of use of each analytic tool or method, with 1 = never and 7 = very frequently (see Table 2 in the appendix). The measure of BD was also adopted from Thiraton et al. (2017) which were based on a three-dimensional scale for ‘BD intensity’ developed on the three Vs (volume, variety, and velocity). I T managers of SMEs were asked to rate the level of increase of each ‘V’ in terms of data (a) they have access to and (b) data they actually use in analytics in their organization using a five-point Likert scale. Similarly, Entrepreneurial decision’s measure is adopted from Thiraton et al. (2017) based on strategic, tactical, and operational (Nowduri 2011).

4. Data Analysis

This study employed a two step process to calculate and report the result of PLS-SEM path as suggested by Henseler, Ringle and Sinkovics (2009). These two -step processes are (1) the assessment of measurement model and (2) the assessment of a structural model (Henseler et al., 2009).

4.1 Assessment of Measurement Model

The PLS –SEM algorithm in the first stage shows that all the constructs scores are estimated to determine items reliability, internal consistency, convergent validity and discriminant validity. (Hair et al., 2013). The indicators with outer loadings between 0.40 are retained, while some items below the threshold of 0.40 are deleted (Hair et al., 2013). About 14 items are deleted out of 14 items. The items deleted are; BDAM (BDAM01, BDAM05, BDAM08, BDAM06

& BDAM07), BD (V0LBD1 and VARBD2), BDAT(BDAT4 and BDAT6) and entrepreneurial decision (EBD2, EBD5, EBD6, EBD7, EP8). The remaining 11 items are retained as they have loadings that range between 0.700and 0.866.

This study employed composite reliability to ascertain the internal consistency of the measures adapted. Table 4.1 depicts the Composite Reliability (CR), items loading and Average Variance Extracted (AVE) for the measurement model.

Table 4.1: Items, loading, CR and AVE of the Latent Variables

Constructs	Items	Loadings	CR	AVE
BDAM	BDAM2	0.832	0.884	0.717
	BDAM3	0.849		
	BDAM4	0.859		
Big Data	VarBD1	0.866	0.903	0.701
	VolBD2	0.813		
	VelBD4	0.828		
	VelBD5	0.839		
BDAT	BDAT1	0.815	0.844	0.576
	BDAT2	0.773		
	BDAT3	0.742		
	BDAT5	0.700		
Entrepreneurial Decision	EBD1	0.844	0.810	0.588
	EBD3	0.728		
	EBD5	0.723		

Table 4.1 depicts the composite reliability coefficient of the latent construct. The composite reliability of each construct ranged from .810 to .903. This connotes internal consistency of the scale. The composite reliability of all constructs is above the threshold of .70. Table 4.2 further shows construct reliability and validity of the indicators.

4.1.1 Convergent validity

All outer loading of the indicators above .40 are retained and AVE above .50 is threshold of convergent validity (Fornell and Larker, 1981). Outer loading of all the constructs ranged between 0.700 to 0.859. Table 4.2 also shows construct reliability and validity

Table 4.2: Construct Reliability and Validity of the indicators

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Entrepreneurial Decision	0.652	0.678	0.810	0.588
Big Data	0.857	0.859	0.903	0.701
ABDM	0.805	0.818	0.884	0.717
BDAT	0.754	0.765	0.844	0.576

Source: Survey data analyzed using Smart PLS, 2023

4.1.2 Discriminant Validity

In Table 4.3, the squared root of the AVE, (0.767, 0.837, 0.847 & 0.759) are all greater than the correlation among the latent constructs which shows discriminant validity (Fornell & Larcker).

Table 4.3: Square Root of AVE and Correlation of Latent Variable

Latent Variables	Entrepreneurial Decision	BD	BDAM	BDAT
Entrepreneurial Decision	0.767			
Big Data	0.628	0.837		
BDAM	0.500	0.413	0.847	
BDAT	0.582	0.628	0.412	0.759

Sources: Survey data analyzed using Smart PLS, 2023

Table 4.4 compares the indicator loading with other reflective indicators. All the available indicators BDAM ; 0.832, 0.849 and 0.859 are greater than other reflective loading. Similarly, for Big Data; 0.866, 0.813, 0.828 and 0.839 are greater than other reflective indicators. Moreover, BDAT indicators loading; 0.815, 0.773, 0.742 and 0.700 are greater than reflective indicators. The indicators loading of Entrepreneurial Decision; 0.844, 0.728 and 0.723 are also greater than the entire reflective indicator. This means that the requirement of discriminant validity has been established.

Table 4.4 Cross Loading Factor Analysis

Source: Survey data analyzed using SMART PLS, 2021

4.2 Structural Model

Table 4.5 summarizes the results of reflective measured constructs, BDAM, BDAT and entrepreneurial decision and mediation of BD by showing the original outer weights estimates, the t values and the corresponding significance levels marked in asterisks as well as the p values.

Table 4.4: The Result of Cross Loading /Factor Analysis

Variables	Entrepreneurial Decision	Big Data	BDAM	BDAT
EBD1	0.844	0.591	0.457	0.514
EBD3	0.728	0.387	0.359	0.401
EBD5	0.723	0.440	0.319	0.412
VarBD1	0.516	0.866	0.324	0.573
VolBD2	0.492	0.813	0.358	0.447
VelBD4	0.544	0.828	0.329	0.496
VelBD5	0.546	0.839	0.373	0.583
BDAM2	0.351	0.340	0.832	0.323
BDAM3	0.427	0.320	0.849	0.321
ABDM4	0.475	0.386	0.859	0.395
BDAT1	0.515	0.517	0.375	0.815
BDAT2	0.449	0.467	0.283	0.773
BDAT3	0.385	0.447	0.226	0.742
BDAT5	0.402	0.473	0.356	0.700

Table 4.5: The Result of the Structural Model and Mediator

Hypotheses	Beta	T Statistics	P Values	Decision
Ho1: BDA T -> Entrepreneurial decision	0.371	5.968***	0.000	Not Supported
Ho2: BDA M -> Entrepreneurial Decision	0.244	4.652***	0.000	Not Supported
Ho3: BDAM ->BD ->Entrepreneurial Decision	0.248	3.725***	0.000	Not Supported
Ho4: BDAT->BD->Entrepreneurial Decision	0.114	3.353***	0.000	Not Supported

Note: *** (P<0.01), ** (P<0.05), *(P<0.1)

Result

The Ho1: The result from the Table 4.6 shows that Big Data Analytics tool enables the development of new entrepreneurial

decision in Lagos, with $\beta=0.371$, $t=5.968$, $P=0.000$. Thus Ho1 is not supported and therefore rejected at 5% level of significance, since there is enough statistical evidence to

reject the null hypothesis, the study accept the alternative hypothesis that Big Data Analytics tool enables the development of new entrepreneurial decision in Lagos. Similarly, Ho2's result from the Table 4.6 shows that Big Data Analytic method aids firm to develop entrepreneurial decision with $\beta=0.244$, $t=4.652$, $p=0.000$. Thus Ho2 is not supported and therefore rejected at 5% level of significance, since there is enough statistical evidence to reject the null hypothesis, the study accept the alternative hypothesis that Big Data Analytic method aids firm to develop entrepreneurial decision in Lagos. Moreover, HO3' result from the Table 4.6 shows that the positive effect of Big Data Analytics Method on entrepreneurial decision is mediated by the volume, variety and intensity of BD in Lagos, with $\beta=0.248$, $t=3.725$, $P=0.000$. Thus Ho3 is not supported and therefore rejected at 5% level of significance, since there is enough statistical evidence to reject the null hypothesis, the study accept the alternative hypothesis that The positive effect of Big Data Analytics Method on entrepreneurial decision is mediated by the volume, variety and intensity of BD.

Furthermore, Ho4's result, the positive effect of Big Data Analytics Method on entrepreneurial decision is mediated by the volume, variety and intensity of BD in Lagos, with $\beta=0.114$, $t=3.353$, $P=0.000$. Thus Ho4 is not supported and therefore rejected at 5% level of significance, since there is enough statistical evidence to reject the null hypothesis, the study embrace the alternative hypothesis that The positive effect of Big Data Analytics Method on entrepreneurial decision is mediated by the volume, variety and intensity of BD in Lagos.

5 Discussions and Conclusion

The major objective of this study is to examine the effect of AI's components on entrepreneurial decision making (EDM). The result of the data gathered from IT managers of SMEs in Lagos Nigeria and analyzed using

Partial Least Squares Structural Equation Modeling (PLS-SEM) Shows that BDAM on entrepreneurial decision making in various business functions, e.g. marketing, operations, and procurement. This denotes that AI enables to develop entrepreneurial decision. The finding is consistent with Shamim et al. (2020), Thirathon et al. (2017) on Impact of big data analytics on decision making. Similarly, AI Analytics helps to develop actionable decisions or recommendation for actions based upon insights generated from historical data. BDAM and BDAT drills down into past or current data to discover trends or patterns to support entrepreneurial managerial decisions. Moreover, the findings of this study also show BDAM and BDAT as established influencer of entrepreneurial decision (Germann et al., 2014). BDAM helps entrepreneurial firms to evaluate the strategies through the lens of data (Amankwah-Amoah, 2016). Particularly in the context of this study BDAM and BDAT are becoming extremely crucial component of decision-making process and enabling entrepreneurial firms for data driven decision-making (Hagel, 2015; Janssen et al., 2017).

In addition, H3 and H4 proposed that the positive effect of BDAM and of BDAT on entrepreneurial decision is not mediated by the volume, variety and intensity of BD. The outcome of the analysis carried on data collected from IT managers of SMEs in Lagos Nigeria shows that volume, variety and intensity of BD mediate the relationship between BDAM and entrepreneurial decision, and also mediate the relationship between BDAT and entrepreneurial decision. The findings suggest that BDAM and BDAT influence entrepreneurial decision-making quality through the mediating role of data-driven insights, which means it relies on data-driven insights to connect with decision-making quality. This finding is consistent with Ghasemaghaei and Calic (2019), Shamim et al. (2020), Mayer- Mayer-Schönberger & Cukier, (2013), Waller and Fawcett (2013) Dyché, 2014 and Schönberger & Cukier, (2013) findings on how

entrepreneurial decision of predicting demand for product is achieved by Big data driven insight through customer intention to buy a particular product, identify customer preference for a particular brand using Google search for a product or brand. Table 1 of this study shows how big data driven insights lead to information, prediction and actionable entrepreneurial decisions.

In conclusion, this paper discovered that presently businesses are dynamic and largely digital. Therefore, entrepreneurs benefit from this transformation. This study recommends that Industry leaders and entrepreneurs must take advantage of the wide range of artificial intelligence (AI) applications BDAM, BDAT and BD in order to enhance their decision-making process for the benefit of society and firms. There is a need for national policy to create entrepreneur friendly legislations and regulations in order to provide incentives to aspiring entrepreneurs, as well as to provide incentives to existing entrepreneurs in order to expand the scope of their businesses. Moreover, there is the need for government enact policy toward overcoming barriers to entrepreneurial development, such as lack of digital infrastructure and access to finances,

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EFFECT OF INTRINSIC MOTIVATION, EXTRINSIC MOTIVATION, AND JOB SATISFACTION ON ORGANIZATION CITIZENSHIP BEHAVIOR AMONG BANK EMPLOYEES: A STUDY OF SELECTED BANKS IN KANO METROPOLIS

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Abstract

The Nigerian banking sector in recent years has made a significant transformation and withstands new and unpredictable environment, characterized by deregulation, product innovation, globalization, expansion in technology and concentrated competition. The incremental modification/transition has shaped the potential for increase in competition and performance. The objective of this study is to examine the effect of intrinsic motivation, extrinsic motivation and job satisfaction on organizational citizenship behavior among bank employees in Kano Metropolis. A census of the population was employed, and a well design structure questionnaire was used as the method of data collection. The target respondents for this study comprised of employees from top, middle, and lower level management cadre of Access Bank, Eco Bank, First Bank, GT Bank, UBA, and Zenith Bank Plc. One hundred and eighty five (185) valid out of two hundred and seven (207) copies of questionnaires administered were returned. Pilot study that comprised of Factor Analysis and Reliability Test was captured in the study. Multiple Regression Method of Analysis using Statistical Package for Social Science (SPSS Version 23) was used as the method that tested the hypotheses of the study. The result showed that intrinsic motivation has significant positive relationship on organizational citizenship behavior, extrinsic motivation has insignificant negative relationship on organizational citizenship behavior, and finally, the result showed that job satisfaction has significant positive relationship on organization. Therefore, it is recommended that, the banking industry should use diverse motivational strategies to improve ability of staff, pay attention to creativity and innovation, and to support spontaneous performances, the banks should focus on improvement of morale, job moral sense, empathy and supportive processes, through presentation of rewards, among others.

Keywords: Intrinsic Motivation, Extrinsic Motivation, Organizational citizenship behavior, Job Satisfaction

1.1 Introduction

The banking industry has contributed tremendously to the economy along with financial facilitation for the businesses and individual consumers it has also created employments. The world's economy is mainly dependent on the banking system and an effective banking system is known as the backbone of any economy (Ali & Butt, 2021). The Nigerian Banking industry has contributed 3.99 % to the country's Gross Domestic Product (National Bureau of Statistics, 2023).

One significant element that might support an organization's survival is its employee citizenship behavior (Orishede & Eboka, 2024). One of the factors that influence organizational citizenship behavior are employee work motivation. Motivation can be intrinsic and extrinsic (Deci & Ryan, 2020). Both intrinsic and extrinsic motivations impact positively on OCB behavior (Ibrahim & Aslinda, 2015). Another variable that also affects organizational citizenship behavior is job satisfaction. The relationship between satisfaction and organizational citizenship behavior has

attracted the attention of scholars in recent years (Cek & Eyupoglu, 2020).

Employees of deposit money banks in Nigeria exhibit citizenship behavior by working for long hours beyond their work schedules, carrying heavy workloads and assisting other colleagues in achieving set targets to help accomplish organizational goals (Faajir, Asenge, & Kyanyon, 2021). A lack of good citizenship conduct will cause businesses to struggle with low output, subpar products, inefficiency, low customer satisfaction, poor teammate communication, excessive expenses, absenteeism, decreased innovation, low likelihood of survival, and high labor turnover (Orishede & Eboka, 2024).

Central Bank of Nigeria in its 2021 report showed that employee turnover in the Nigerian banking sector increased from 12.5% in 2018 to 28.1% in 2021 which translate to an increase of 35.1% increase within the period (CBN, 2021). It was also reported in the survey that the increased in the employee turnover was occasioned by poor job satisfaction occasioned by poor work engagement, poor rewards system and lack of effective organizational support necessary to retain valuable employees. Thus, this leads to poor organizational citizenship behavior. Therefore, this study aims to examine whether there is significant effect of intrinsic motivation, extrinsic motivation, and job satisfaction on organization citizenship Behavior among banks employees in some selected banks in Kano Metropolis.

1.2 Problem Statement

Previous studies on the relationship between motivation in the form intrinsic and extrinsic motivation, job satisfaction and organizational citizenship behavior has been documented in Africa, Asia, Europe, and American continents (Ahmed & Kha, 2016; Sultana, 2019; Cek & Eyupoglu, 2020; Ali & Butt, 2021; Bature, Bello, Jauro, & Kassim, 2022, Margahana, Haryono, & Zainal, 2018, Rinaldi & Riyanto, 2021). Studies in these continents have revealed a positive

relationship between intrinsic and extrinsic motivation, job satisfaction and organizational citizenship behavior.

Studies on construct of organizational citizenship behavior in Nigeria industries have focused on Maritime sector (Amadi, Seth & Ojiabo, 2017), manufacturing sector (Bature et al., 2022), hotels (Omoankhanlen & Issa, 2021) only few if any on banking sector. Employers in private organizations are becoming increasingly aware that motivations increase productivity. From the foregoing, and looking at today's economic trend, it is evident that the pace of change in our business environment presents fresh challenges daily.

In Nigeria, several studies have been carried out on organizational citizenship behavior practices but not alongside its relationship with intrinsic motivation, extrinsic motivation, and job satisfaction (Omoankhanlen & Issa 2021, Ifeyinwa & Vincent, 2020, Dagomie, 2018, Amadi, Seth & Ojiabo, 2017). Furthermore, most of the studies on organizational citizenship behavior used 5 point Likert Scale. Given the identified knowledge gap, the current study point of departure from earlier research is to empirically fill this observed gap. Therefore, this intends to use the 10 point scale scrutinize the relationship between the dimensions of organizational citizenship behavior. This is because 10 point Scale from 1 strongly disagree to 10 strongly agree gives more freedom of choice to the respondents where the forced measure would not occur. This is supported in the work of Zainudin (2012).

Thus, the main purpose of this research is to examine effect of intrinsic motivation, extrinsic motivational, and job satisfaction on organizational citizenship behavior among bank employees in some selected banks in Kano Metropolis.

1.3 Objectives of the Study

The objectives of the study are:

- i. To examine the effect of intrinsic motivation on organization citizenship behavior in the Nigerian banking industry.
- ii. To examine the effect of extrinsic motivation on organization citizenship behavior in the Nigerian banking industry.
- iii. To examine the effect of job satisfaction on organization citizenship behavior in the Nigerian banking industry.

1.4 Research Hypotheses

The hypotheses of the study are proposed to test the proposition put forth as a part of the research framework and are as follows:

H₀₁: Intrinsic motivation has no significant effect on organization citizenship behavior in the Nigerian banking industry.

H₀₂: Extrinsic motivation has no significant effect on organization citizenship behavior in the Nigerian banking industry.

H₀₃: Job satisfaction has no significant effect on organization citizenship behavior in the Nigerian banking industry.

2.0 Literature Review

2.1 The Concept of Organizational Citizenship Behavior

The concept of organizational citizenship behavior (OCB) has been mentioned and pioneered by Organ (1988). OCB occurs when any task that an employee chooses to do, spontaneously and out of his or her own accord, which often lies outside of his or her specified contractual obligations is done (Ahmed & Kha, 2016). Organizational citizenship behavior is considered to be the employee behavior that is not mandatory, not directly recognized by the official reward system and that collectively contributes to the effective functioning of the organization (Geckil & Tikici, 2015). Extra-role behavior is a work behavior that is not found in the employee's formal job description but will be

highly valued if it is displayed by the employees because it increases the effectiveness and survival of the organization (Sylviana et al., 2020). Organizational citizenship behavior plays very important role for the better functioning of any organization (Ifeyinwa & Vincen, 2020).

2.2 The Concept of Motivation

Motivation is concerned with the factors that influence people to behave in certain ways (Armstrong, 2006). The concepts of motivation is very important for organizational leaders because a number of researches have established that high level of motivation leads to high level of performance. Motivation helps to induce performance in a number of ways such as it helps in employee behavior management, meet organizational goals, generate more job satisfaction, raises employee efficiency, helps both leaders and employees to meet their personal goals, encourages team harmony and ensures organizational citizenship behavior by stabilizing the workforce (Ganta, 2014).

2.2.1 Intrinsic Motivation

The intrinsic motivation is an important aspect to increase motivation of employees and their intention to stay with the organization (Aguenza, 2012). Intrinsic motivation is defined as the doing of an activity for its inherent satisfactions. It makes an individual much more likely to be motivated and perform well as opposed to those that were extrinsically motivated (Deci & Ryan, 2020). Intrinsic motivation like job security, task significance, feedback, task variety, autonomy, and authority, were found ominously and positively related to better employee retention (Ajmal et al., 2015). Therefore, it can be concluded that the intrinsic motivators are psychological feelings that employees get from doing meaningful work and performing it well (Bature et al., 2022).

2.2.2 Extrinsic Motivation

Extrinsic motivation can be described as pay, bonus, promotions, job security

(Prabakaran, Ispriya, Amsa, & Angulakshmi, 2014). Extrinsic motivation like recognition, advancement, and relation with co-workers are related to employee cooperation (Ajmal et al., 2015). According to Armstrong (2006), extrinsic motivations are defined as tangible benefits such as salaries/ incentives, fringe benefits, security, promotional benefits and service contracts and working conditions are required to motivate their employees. Deci & Ryan (2020), suggested that salary, financial incentives and bonuses are the types of extrinsic rewards which are directly linked with efficiency of the employee.

2.2.3 Job Satisfaction

Job satisfaction (JS) has been researched by various social science scholars and they are in support that it has to do with a positive emotional reaction of an employee towards a particular job (Aslaug & Espen, 2017). The study of job satisfaction can perhaps be said to have started in earnest with the famous Hawthorne Studies, conducted by Elton Mayo at the Western Electric Company in the 1920's. Up to date, those that engage in Industrial Psychology still have much interest in examining the effects of physical conditions, equipment design, and the productivity of individuals. Job satisfaction is also defined as the magnitude to which individuals are satisfied with their jobs or their perceptions and how they feel about the different aspects of their jobs (El Din Mohamed, 2016). Affect is central to definitions of job satisfaction (Rinaldi & Riyanto, 2021).

2.3 Theoretical Framework

The underpinning theory of this research work is Herzberg's theory. This study uses Herzberg's theory to explain organizational citizenship behavior. Herzberg's theory argues that motivation in form of intrinsic and extrinsic factors, should be emphasized to develop employee job satisfaction. Intrinsic and extrinsic factors are created by changing the work nature by increasing an individual need in the organization. Herzberg Theory has been applied as a guide for the researcher to demonstrate the influence of the intrinsic and extrinsic motivating factors, job satisfaction on employees' citizenship behavior. So, this study focuses on intrinsic and extrinsic motivation, job satisfaction that could significantly impact employees' citizenship behavior. It has been predicted that intrinsic extrinsic motivation factors indirectly influence organizational citizenship behavior through the existence of job satisfaction. Moreover, the theoretical framework for this study is aligned with the theoretical framework developed by Ahmed & Khan (2016), which is a vital contribution to this study. Based on the foregoing discussion and empirical evidence, a framework is developed to examine the relationship between intrinsic motivation, extrinsic motivation, and job satisfaction on organizational citizenship behavior among bank employees in some selected banks Kano metropolis. The research framework for this study is depicted in Figure 2.1.

2.4 Conceptual/Theoretical Framework

The research framework is developed based on the previous literatures (Ibrahim & Aslinda, 2015, Rinaldi & Riyanto, 2021).

Independent Variables

Dependent Variable

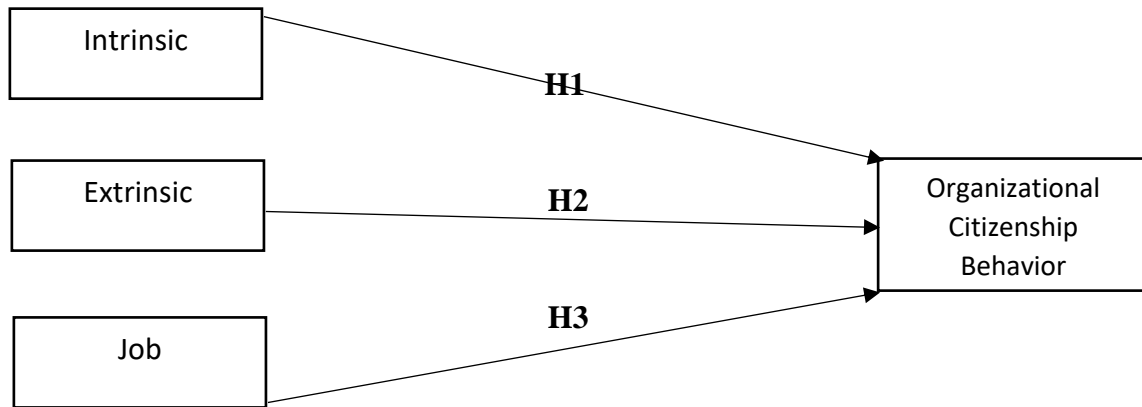


Figure 2.1: The Conceptual/Theoretical Framework

Source: Ahmed & Khan, 2016.

3.0 Methodology

3.1 Research Design

This study employed the survey research design of collecting and analyzing information. The unit of analysis for the study is the employee of some commercial banks in Kano metropolis.

3.2 Population of the Study

The population of the study comprised of employees from top, middle, and lower level management cadre of Access Bank, Eco Bank, First Bank, Guarantee Trust Bank, UBA, and Zenith Bank operating in Kano

Metropolis. The study covered the following departments: Marketing, Human Resource, Operation, Corporate Banking, Risk, Management Investment, Audit and Inspection, Technology/IT Department. These banks were selected based on market capitalization and bank performance. Zenith Bank Plc has a market capitalization of N1.92 trillion, UBA, N1.778 trillion, Access Bank Plc, N1.64 trillion, First Bank Plc, N1.37 trillion, Eco Bank Plc, N1.37 trillion, and GT Bank Plc, N1.273 trillion (Leadership, 2023).

Table 3.1: Population of the Study

Banks	Department	Top	Middle	Lower	Total
Access	Marketing	1	2	3	6
	Human Resource	1	1	2	4
	Operation/Transaction Group	1	2	2	5
	Corporate Banking	1	2	2	5
	Risk Management	1	1	1	3
	Investment/Management	1	1	2	4
	Audit and Inspection	1	1	1	3
	Technology/IT	1	1	1	3
Subtotal					33
Eco	Marketing	1	1	2	4
	Human Resource	1	1	2	4
	Operation/Transaction Group	1	1	1	3
	Corporate Banking	1	1	1	3

	Risk Management	2	1	1	4
	Investment/Management	1	2	2	5
	Audit and Inspection	1	1	1	3
	Technology/IT	1	1	2	4
Subtotal					30
First	Marketing	2	2	3	7
	Human Resource	1	2	2	5
	Operation/Transaction Group	1	2	2	5
	Corporate Banking	1	2	1	4
	Risk Management	1	1	1	3
	Investment/Management	1	1	2	4
	Audit and Inspection	1	1	2	4
	Technology/IT	1	2	2	5
Subtotal					37
GT	Marketing	1	1	2	4
	Human Resource	1	1	2	4
	Operation/Transaction Group	1	2	1	4
	Corporate Banking	1	1	1	3
	Risk Management	1	1	2	4
	Investment/Management	1	1	1	3
	Audit and Inspection	1	1	1	3
	Technology/IT	1	1	1	3
Subtotal					28
UBA	Marketing	1	1	3	5
	Human Resource	1	2	2	5
	Operation/Transaction Group	1	1	2	4
	Corporate Banking	1	2	1	4
	Risk Management	1	2	2	5
	Investment/Management	1	1	2	4
	Audit and Inspection	2	2	1	5
	Technology/IT	1	1	2	4
Subtotal					36
Zenith	Marketing	1	1	5	7
	Human Resource	1	2	3	5
	Operation/Transaction Group	2	2	2	6
	Corporate Banking	1	2	2	5
	Risk Management	1	2	1	4
	Investment/Management	2	1	2	5
	Audit and Inspection	1	2	2	5
	Technology/IT	2	2	2	6
Subtotal					43
	Total				207

Source: Field Survey (2023)

Therefore, the population of the study is the two hundred and seven (207) employees of the six selected banks in Kano Metropolis as at December, 2023.

3.3 Sample Size

The researcher adopted the entire population of the study as the sample size which is 207 bank employees because the number of the target respondents in the selected deposit money bank branches

covered is not large enough of a study of this nature.

3.4 Method of Data Collection

The data collection of this study was done by sourcing primary data from the respondents. The data were collected through the self-administered questionnaire to the respondents. Two hundred and seven (207) copies of questionnaire were administered to the respondent. The data were collected from top, middle, and lower level management cadre Access Bank, Eco Bank, First Bank, Guarantee Trust Bank, UBA, and Zenith Bank in Kano Metropolis. **3.5 Pilot Test**

The Pilot test is conducted in First Bank main branch at No. 10, Lagos Street and GT Bank, No. 22 Zaria Road, in Kano Metropolis with a view to reduce the data into manageable size. A total of 25 respondents were used in the Exploratory Factor Analysis (EFA).

3.6 Reliability and Validity

A reliability test was used to determine the reliability of the data to be collected before the principal component analysis. Furthermore, the study employed Explorative Factor Analysis (EFA). Principal Component Analysis (PCA) were used to reduce the data into manageable size

Table 3.1 Summary of the Reliability Test

Construct	Number of Items	Cronbach`s Alpha
Intrinsic Motivation	7	0.938
Extrinsic Motivation	8	0.796
Job Satisfaction	15	0.995
Organizational Citizenship Behavior	15	0.893

Source: Computed by using IBM SPSS version 23

The pilot study result reveals a good reliability for all the variables having 0.938 for intrinsic motivation, 0.796 for extrinsic motivation, 0.995 for job satisfaction, and 0.893 for organizational citizenship behavior respectively. All the Cronba alpha value is above the recommended value of 0.70 (Zainudin, 2015), reveling and acceptable for internal consistency. From the above table, the result clearly indicates that the item of each construct of the pilot study is reliable and recommended for further study.

3.5 Method of Data Analysis

The statistical package for social science (SPSS) version 23 was used for analysis. Multiple regressions were used to find out the extent of relationship between the independent variables and dependent variable. And also to find out the degree to

which the independent variables predicts the dependent variable.

3.6 Measurement of the Variables

The study employed the measure of intrinsic and extrinsic motivation adapted from Tyilana & Riley (2005). The job satisfaction was measured by fifteen items adapted from Parvin & Kabir (2011). Organizational citizenship behavior was measured with Persian version of the organizational citizenship behavior scale adapted from the Podsakoff et al. (2009). The questionnaires were measured by 10 point Likert Scale, from 1 (strongly disagree) to 10 (strongly agree) developed by Zainudin (2012). This is because the 10 point scale gives more freedom of choice to the respondents where the forced measure would not occur (Zainudin, 2012). Furthermore, the 10 points of Likert scale is more efficient than 5 points of Likert scale (Zainudin, 2015).

4.0 Result and Discussion

Table 4.1 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Chang	df1	df2	Sig. F Change
1	.363a	.131	.126	1.654	.131	24.971	3	495	.000

Source: Computed by using IBM SPSS version 23

The table above shows the coefficient of determination (R^2) = .131 and adjusted R^2 .126. This implies that 13% of the variation of organizational citizenship behavior (dependent variable) has been significantly explained and shared by the independent variables (intrinsic motivation, extrinsic

motivation, and job satisfaction). The remaining 87% is explained by variables that are not captured in the regression model. The F-test= 24.971 measures the adequacy and fitness of the model used in the study which is significant at 5%. This shows that the model is well fitted.

Table 4.2 ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	204.859	3	68.286	24.971	.000 ^b
	Residual	1353.646	495	2.735	1	
	Total	1558.505	498			

Source: Computed by using IBM SPSS version 23

From the above ANOVA table 4. It shows that the overall model is significant, considering the Sig. F Change value $F(3, 495) = 24.971, p < 0.005$). The level of

significance is .000 which shows that the analysis of variance for the study has fallen within the acceptable standards. This shows that the model is good and fit for the study.

Table 4.3 Summary of Regression Result

Variables	Coefficients	t-value	p-value	Result
(Constant)	3.555		0.000	
Intrinsic Motivation	0.217	4.300	0.000	Significant
Extrinsic Motivation	0.039	0.855	0.393	Insignificant
Job Satisfaction	0.232	5.561	0.000	Significant

Source: Computed by using IBM SPSS version 23

4.1.1 Testing Hypothesis I

H₁ Intrinsic motivation has no significant effect on organizational citizenship behavior in the Nigerian Banking industry. Based on the multiple regression analysis result in table above, the beta and P-value of intrinsic motivation are .217 and 0.000. This implies that intrinsic motivation is statistically significant in predicting the variations in organizational citizenship behavior. Therefore, the alternate hypothesis is accepted.

4.1.2 Testing Hypothesis II

H₂ Extrinsic motivation has no significant effect on organizational citizenship behavior in the Nigerian Banking industry. Based on the multiple regression analysis result in table above, the beta and P-value of extrinsic motivation are .039 and 0.393. This implies that extrinsic motivation is statistically insignificant in predicting the variations in organizational citizenship behavior. Therefore, the alternate hypothesis is rejected.

4.1.3 Testing Hypothesis III

H₃ Job satisfaction has no significant effect on organizational citizenship behavior in the Nigerian Banking industry. Based on the multiple regression analysis result in table 20 above, the beta and P-value of job satisfaction are .232 and 0.000. This implies that job satisfaction is statistically significant in predicting the variations in organizational citizenship behavior. Therefore, the alternate hypothesis is accepted.

5.1 Conclusion

The study investigated the effect of intrinsic motivation, extrinsic motivation, and job satisfaction on organizational citizenship behavior in some selected banks in Kano Metropolis. The study concluded that both intrinsic and job satisfaction plays an important role in enhancing organizational citizenship behavior among bank employees in Kano Metropolis. Hypothesis one result showed that intrinsic motivation has significant effect on organizational

citizenship behavior in some selected banks in Kano Metropolis. Hypothesis two result showed that extrinsic motivation has insignificant effect on organizational citizenship behavior in some selected banks in Kano Metropolis. Finally, Hypothesis three result showed that job satisfaction has significant effect on organizational citizenship behavior in some selected banks in Kano Metropolis.

5.2 Recommendations

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

- i. Based on the findings which confirmed that intrinsic motivation has significant positive effect on OCB among bank employees in Kano metropolis. Therefore, bank management should deepen their analysis on the factors that motivates employees to increase OCB. It is recommend that bank management should try to promote and improve life quality using such mechanisms as health planning, salary, welfare, workforce security and consulting services.
- ii. Based on the findings of the current study, the bank management should focus more to promote the employee's prosocial behavior. In order to make employee exhibit citizenship behavior, the incentive or motivation system should be reviewed, especially to the employee who is younger, less experience, lower position worker, or single.
- iii. Based on the findings of the current study, this research discovered that job satisfaction has become the major factor for enhancing organizational citizenship behavior. Therefore, the management of banking sector should produce atmosphere where employees feel satisfied on their jobs. Hence, it is recommends that the management of

the banks should adequately provide job satisfaction to the employees as that will enhance their level of OCB in the banks.

5.3 Suggestion for Future Research

This research is very limited in scope behavior it only examines the effect of intrinsic motivation, Extrinsic among bank motivation, and job satisfaction on organizational citizenship behavior Employees in Kano metropolis. Therefore, there is a gap for conducting research in different sectors, industries, or institutions with large sample size to validate the result of this study. Future research should focus on different dependent variables like organizational performance or employee performance. Furthermore, this study makes use of Multiple Regression to test the study hypotheses, and so the researcher is suggesting future research should use Structural Equation Modelling (SEM) or any other parametric statistics.

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APPENDIX II
QUESTIONNAIRE

Section I- Biographical Characteristic

Please kindly fill in the box as Appropriate

1. **Gender:** Male ()

Female ()

2. Age

a) 18-25 years ()

b) 26-34years ()

c) 35-44 years ()

d) 45-54 years ()

e) 55 years above

3. Marital Status

a) Single ()

b) Married ()

c) Divorced ()

d) Separated ()

e) Other (specify) ()

4. Work Experience

a) Last than 1 years ()

b) 1-5 years ()

c) 6-10 years ()

d) 11-15 years ()

e) 16 years and above

5. Educational Qualification

a) O level or equivalent ()

b) Diploma or equivalent ()

c) Degree or equivalent ()

d) Master Degree or equivalent ()

e) Other (Specify) ()

SECTION II

Intrinsic Motivation

the following statement represent how you perceive intrinsic motivation (IM) in your organization, kindly tick according to your perception and experiences based on the 10 point scale provided from 1-5 (Strongly Disagree), 6-10 (Strongly Agree).

	ITEMS	SCALE
IM	My work gives me a sense of accomplishment	1 2 3 4 5 6 7 8 9 10

EM	My pay and benefit are very satisfying	1 2 3 4 5 6 7 8 9 10
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	ITEMS	
JS	I am satisfied with the working environment of the organization.	1 2 3 4 5 6 7 8 9 10

OCB	I attend meeting that are not mandatory, but are considered important	1 2 3 4 5 6 7 8 9 10
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ORGANISATIONAL CLIMATE AND EMPLOYEES' TURNOVER INTENTIONS IN SELECTED MANUFACTURING COMPANIES IN ASABA, DELTA STATE, NIGERIA

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Abstract

Among the biggest challenges faced by modern organisations are employee turnover and the nature of the workplace. The study investigated organisational climate and employees' turnover intentions with focus on four dimensions of organisational climate as follows: rewards and benefits; management style; organisational policies; and training and development. Convenience sampling and survey research design were used in the study. From the population of 593 employees, 238 were chosen as the study's participants. Consequently, 202 out of the 238 copies of questionnaire administered were returned and appropriately completed, and these were utilised for the analysis. Both descriptive and inferential statistics were applied to the acquired data for analysis. Multiple regressions were used to test the formulated hypotheses. The findings showed that rewards and benefits have significant influence on employees' turnover intentions and that management styles have significant effect on employees' turnover intentions. However, both organisational policies and training and development have no significant effect on employees' turnover intentions. The study concluded that organisational climate has effect on employees' turnover intentions but that not all dimensions of organisational climate form major considerations in employee intention to stay or exit an organisation. A major recommendation of the study is that organisations should create positive and strong organisational climate so that employees would be more committed and engaged and hence minimise the thoughts of quitting the organisation.

Keywords: Climate, employees, manufacturing, organisational, turnover intentions

1.0 Introduction

Organisations differ from each other due to their unique characteristics. These peculiar features have effect on employees' behaviour and their views about the organisation. When one compares employees of today and those of antiquity, it would be observed that there are differences in their ways of life and how they react to workplace issues. For example, Hussainy (2019), noted that contemporary employees rarely plan to build their career in one organisation till retirement and they also do not make enduring plan to stay and work in a particular organisation. This assertion may be because contemporary employees have more opportunities and are more likely to attach

greater importance to experience, growth and lifelong learning than the workers from the past generations that have the tendency to be engaged with a single company over a long period of time.

Hussainy (2019) further argued that this modern category of workers would exit an organisation as soon as they encounter some discomforting conditions in their current position. It should be noted that a positive working condition makes an employee feel good about work attendance and gives needed motivation to support them throughout their working lives (Ashraf, 2018). In view of the generational shift and changes in the demography of workers in modern workplaces, organisations have

embarked on re-evaluations and restructuring of their environmental policies, procedures, strategies and systems (Kossivi et al., 2016). Mayrhofer and Prange (2015) opined that for an organisation to effectively compete in the international market sustainably, it should create flexible and dynamic workplace climate that supports the needs of a multi-generational workforce. It is the view of Mathew and Selvi (2007) that employees would most likely prefer to work in organisations that provide them some level of autonomy, consistency, justice, and acknowledgment, among other things. It is noted that interest in organisational climate studies by researchers could be related to employees' job-hopping mentality and the increased level of turnover in today's workplaces.

It is important to note that empirical research on employees' turnover intentions and organisational climate is severely lacking. For example, most of the empirical studies that investigated organisational climate and employees' turnover intentions such as (Ghosh and Sahney, 2011; Lancaster and Di Milia, 2015; Naz et al., 2020; Rai, 2014) focused on varying dimensions of organisational climate. More so, observations from extant literature revealed the dearth of empirical studies that focus on organisational climate and employees' turnover intentions in manufacturing companies situated in Asaba, Nigeria. It should be noted that most of the limited recent studies on organisational climate were equally focused on organisations domiciled outside Nigeria (Hao & Wang, 2022; Rai, 2014; Shinohara & Kato, 2021; Yong, Huang & Chen, 2020). In some instances, the studies listed above were conducted in service industries such as hospitals and educational institutions. It is on that note that, the focus of this study is on organisational climate and employees' turnover intentions in selected manufacturing companies in Asaba, Nigeria.

The following research questions were framed based on the identified gaps in literature:

1. How do rewards and benefits influence employees' turnover intention?
2. What effect does management style have on employees' turnover intentions?
3. To what extent do organisational policies affect employees' turnover intentions?
4. In what ways do training and development affect employees' turnover intention?

2.0 Review of Relevant Literature

2.1 Conceptual Review

The study of organisational climate has been on for a while and as noted by Mukheriji et al., (2021), studies on organisational climate started in the 1960s and organisational climate has been referred to different things by different researchers from divergent perspectives such as goal-oriented environment, people-oriented environment and rule and innovation environment. Organisational stakeholders' perceptions of organisational or institutional characteristics are the main focus of organisational climate. Organisational climate could be described as stable quality of an organisation's internal environment or the set of characteristics that are perceived by employees and which also influences their behaviour. It could also be viewed as a major factor that is responsible for employee satisfaction and or dissatisfaction and that also affects the rate or frequency of their turnover.

Employee retention and turnover have become major challenges to human resource practitioners and organisations because they are necessary ingredient for long-term competitive advantage and success of most organisations. As noted by Xuecheng et al., (2022), the recent Covid-19 pandemic brought employee retention to the fore as a major problem that is faced by organisations globally. In Nigeria, the current political and economic situations have led to mass exodus of employees to more stable economies and have equally exposed employee retention as a major problem for Nigerian organisations.

Employees' turnover intention could be described as employees' awareness and view of the choices open to them and as an important indicator of their thinking and plans to resign from or stay in an organisation. Employees' turnover intention explains the psychological state that shows the chances of an employee having the thought to exit from an organisation sometime in the future or to stay and work for a longer time period. As noted by Naz et al. (2020), scholars attribute different climate that may influence an employees' intention to quit or remain in the employment of an organisation. Different employment practices and characteristics that include training and development, leadership style, reward and compensation, physical working conditions are expected to be positively related with employee retention (Hytter, 2007).

2.2 Theoretical Framework

Gestalt Psychology Theory

Gestalt Psychology Theory is attributed to the works of a Czech scholar and psychologist based on his publication, *experimental studies of the perception of movement* in 1912. The theory is made up of two meanings which include the general characteristics of a phenomenon and the individual attributes of the phenomenon. The theory is focused on the relationship between the whole and the parts of the object. As noted by Yang and Yuan (2022), Gestalt Theory views problems as a gestalt (whole) rather than from separate parts. It means that Gestalt Theory sees climate as made up of many perceptions and experiences. The relevance of this theory in the study of organisational climate is anchored on the fact that it supports the view that employees create order in the organisations where they work and accordingly display or adapt their behaviour to the work environment.

Functionalism Theory

Functionalism theory was popularised by Bronislaw Malinowski in the 1920s. The functionalist explanation according to Otopo (2013) argued that the unusual or specific characteristics of primitive systems could be

understood in terms of functions that they perform. In this regard, organisations should be viewed in terms of a complex whole and understood as a relationship between the various parts and their environment. Otopo (2013) further noted that one of the strong points of functionalism is that behaviour at the workplace can only be regular and hence assume some level of predictability and reciprocity when some values are widely and commonly held. This theory is used to underpin this study because it helps us understand how socialisation encourages the adoption of some values and norms by many employees in the organisation.

Person-Environment (PE) Fit Model

Person-Environment (PE) Fit Model is attributed to Lewin (1935). Lewin (1935) stated that the interaction between the person and environment is the basis for understanding individuals' cognitive, affective and behavioral reactions. Further in Lewin' study titled 'Field theory in social change' published in 1951, it was stated that behaviour is a function of the interaction between a person and the environment. The PE Fit model opines that employees in a workplace desire that their work environment and their personal characteristics should be synchronised. PE Fit refers to the extent of compatibility between employees' and organisation's characteristics. What this implies is that, by the nature of characteristics, some individuals would do better than others with some environments. This model is relevant to this study because it helps us to explain why the fit between individual characteristics and the organisational attributes affect the behaviour and the choices individuals make.

2.3 Empirical Review of Literature

In their study, Lan et al., (2020) investigated the correlation among job stress, organisational climate, workplace burnout, and retention of pharmacists. The study found that significant correlation exists among organisational climate, workplace burnout, job stress, and retention. The outcome of the study aimed to assist hospital management to

establish a friendly and healthy workplace and show hospital management how to improve their workplace climate and reduce job stress and burnout among pharmacists and hence enhance their quality of service and medical safety and ultimately improve their turnover intention.

Also, Li et al., (2020) examined the extent of turnover among the child welfare workers and its link to individual-level work attitudes, workforce demographics, and organisational conditions. The study therefore investigated indirect effects of organisational climate on turnover through the job satisfaction of voluntary child welfare workers. The results from the study established that job satisfaction mediated how organisational climate affects turnover intention of workers. Based on the finding, it was recommended that voluntary child welfare agencies should make effort to redirect their resources and pay attention to the way and manner organisational changes may affect workers' job satisfaction in career advancement opportunities, benefits and pay.

Employees' turnover intentions and a supportive organisational climate were studied by Hao and Wang (2022). According to the study, employees' turnover intentions are considerably lower in environments that are supported by the organisation. On their part, Sprink and Johnson (2013) carried out a study to establish the association between organisational climate and employees' turnover intention in a service franchise system in New Zealand. The study adopted cross-sectional research design and workers in nineteen units of the food and beverages franchise system participated in the study. The findings from the multi linear regression tests revealed no significant association between organisational climate and employees' turnover intentions.

Shinohara and Kato (2021) in their study investigated how organisational climate affect retention and turnover of hospital workers. The study was based on semi-structured interviews with 27 participants. The findings demonstrated that organisations can create a great work environment by combining two supportive systems, job

satisfaction, and staff relationships in a respectful environment. This reduces employee turnover and increases retention rates. Equally, Madhura (2020) investigated the relationship between organisational climate and employees' organisational commitment. The study's findings demonstrated that all scopes of climate and commitment were strongly correlated with welfare facilities, business prestige, and cooperative work relationships. According to Madhura (2020), there exist a significant positive association between organisational commitment and all of the study's adopted climate dimensions, which include opportunities for advancement, handling of grievances, financial benefits, objectivity and rationality, participatory management, safety and security, recognition and appreciation, training and education, and welfare facilities.

Following the reviews mentioned above, the following hypotheses were developed for the study:

H₁: Rewards and benefits do not significantly influence employees' turnover intentions

H₂: Management style has no significant effect on employees' turnover intentions

H₃: Organisational policies do not have significant effect on employees' turnover intentions

H₄: Training and development do not have significant effect on employees' turnover intentions

3.0 Methodology

This study focused on three manufacturing companies located in Asaba, Delta State, Nigeria and the population of the study covered the entire workforce of the three organisations, that chose to remain anonymous, selected for this study and herein referred to as companies A, B and C. These companies that chose to remain anonymous were selected because they represent the top three manufacturing companies by the size of their workforce and age of operations in Asaba. Survey research design was adopted and participants were drawn from employees of the selected organisations which numbered 593. Yamane (1967) formula was used to estimate the sample size for the study because

the population is finite and this resulted in 238 sample size proportionately formed as in

the table below.

Table 1: Population and Sample Size

Selected Company	Population	Sample Size
A	207	83
B	200	80
C	186	75
Total	593	238

Source: Field Survey 2023

Based on the determined sample size, a total of 238 copies of questionnaire were administered to the selected respondents through convenience sampling technique. Although probability sampling technique, such as simple random sampling, would have been more appropriate because of the finite nature of the study population, but based on the nature of work in the selected manufacturing companies, random sampling would be practically impossible as the researchers do not have the opportunity to follow through the standard process of probability sampling. It was based on this constraint, that convenience sampling was adopted. 202 copies of the administered questionnaire were retrieved, yielding an 84.5

percent response rate. Since these returned copies of questionnaire were correctly completed, they were utilised for the analysis.

The research instrument used for this study contained closed-ended statements with the 4-point Likert scale denoted by strongly agree (4), agree (3), disagree (2) and strongly disagree (1). The authors subjected the research instrument to both content and face validity, and reliability test. To determine the validity of the instrument, the questionnaire was given to professionals and academic experts to validate.

The Cronbach’s Alpha reliability coefficients for the subscales are as presented in table 1 below.

Table 2: Cronbach Alpha Reliability Coefficients

Scale	Cronbach’s Alpha	No. of Items
Rewards and benefits	0.749	5
Management Styles	0.500	8
Organisational policies	0.822	7
Training and development	0.853	5
Employee’s turnover intentions	0.603	8

Field Survey: 2023

Cronbach Alpha Coefficient ranges from 0 to 1. There are however, no absolute rules with regards to internal consistencies. For example, Nunnally and Bernstein (1994), stated that Cronbach Alpha Coefficient that is greater than 0.60 is considered acceptable. On the other hand, Hinton et al. (2004) reiterated that there are four cut-off points for internal consistencies as follows: greater than 0.90 specifies excellent reliability; above 0.7 but less than 0.90 shows high reliability; from 0.50 to 0.70 indicates moderate reliability and less than 0.50 is low reliability. Since the

coefficients for the subscales as stated above range from high reliability to moderate reliability, they are therefore, considered acceptable for analysis.

Before the administration of the questionnaire, the consent of participants was obtained and they were also informed that their participation apart from being voluntary would neither pose any risk to them nor to their job. Participants received the same assurances with regard to the privacy of the information gathered, and the questionnaire was made anonymous, as no attempt was

made to obtain respondents' personal identifiable information. Employees from the human resource departments of the chosen organisations assisted in administering the questionnaire. The Statistical Package for the Social Sciences (SPSS) software (V20) was utilised in the analysis of the data using both descriptive and inferential statistics. The study adopted the frequency distribution that presented both frequencies and percentages. Additionally, the study hypotheses were

tested at the 5% significant level with multiple regressions.

4.0 Presentation and Analyses of Data

4.1 Socio-Demographic Profile of the Respondents

The socio-demographic characteristics of the respondents are presented and analysed in this section. These characteristics include respondents' gender, marital status, age, educational qualification, length of service and level in the organisation.

Table 3: Socio-Demographic Characteristics of the Respondents

Gender	Frequency	Valid %
Male	108	53.5
Female	94	46.5
Marital Status	Frequency	Valid %
Single	81	40.1
Married	94	46.5
Separated	21	10.4
Divorced	6	3.0
Total	202	100.0
Age of Respondents	Frequency	Valid %
Below 31 years	68	33.7
31-40 years	79	39.1
41-50 years	52	25.7
51 and above	3	1.5
Total	202	100.0
Educational Qualifications	Frequency	Valid %
O/L Certificate	63	31.2
NCE/Diploma	48	23.8
Bachelors/HND	63	31.2
Masters	26	12.9
Others	2	1.0
Total	202	100.0
Length of Service	Frequency	Valid %
0-2 years	52	25.7
3-5 years	103	51.0
More than 5 years	47	23.3
Total	202	100.0
Level in the organisation	Frequency	Valid %
Management	25	12.4
Senior	87	43.1
Junior	90	44.6
Total	202	100.0

Source: Field Survey (2023)

It is revealed from the above Table that 53.5% of the participants are male while 40.1% are single and 46.5% of the participants are married. This implies that there is balance in gender and marital status of the surveyed population hence good for research purpose. Analysis of the age of respondents shows that, 33.7% of the respondents were below 31 years, 39.1% were between 31 and 40 years while 27.2% of the respondents were above 40 years of age. The age data reveals that the age group within the organisations is diversified, showing the presence of many workforce generations. A review of the respondents' academic backgrounds shows that, of those with the highest levels of education, 55% had an ordinary level certificate or diploma and a National Certificate of Education, while 45% had a Bachelor's degree or higher, a Higher National Diploma (HND), or a Master's degree or above. The respondents have sufficient education to understand and choose the appropriate statements in the questionnaire. Analysis of the length of service shows that 74.3% have worked in the selected organisations for over three years.

The implication of this is that the respondents have adequate work experience and are adjudged competent to give appropriate responses to the statements. Finally, 87.7% are either senior or junior staff category. This is an indication that the respondents fall within the category employees that mostly feels the impact of unpleasant work environment and is therefore, appropriate to participate in the research.

4.2 Test of Hypotheses

Multiple regressions were used to test the following hypotheses.

Hypothesis one: Rewards and benefits do not significantly influence employees' turnover intentions

Hypothesis two: Management style does not have significant effect on employees' turnover intentions

Hypothesis three: Organisational policies do not have significant effect on employees' turnover intentions

Hypothesis four: Training and development have no significant effect on employees' turnover intentions

Table 4: Test of Hypotheses

Table 4a: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.315 ^a	.099	.081	3.93773

a. Predictors: (Constant), Training and Development, Management Style, Rewards and benefits, Organisational Policies

Table 4b: ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	335.377	4	83.844	5.407	.000 ^b
	Residual	3054.628	197	15.506		
	Total	3390.005	201			

a. Dependent Variable: Employees' Turnover Intentions

b. Predictors: (Constant), Training and Development, Management Style, Rewards and benefits, Organisational Policies

Table 4c: Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	13.026	1.511		8.623	.000

Rewards and Benefits	.267	.123	.211	2.179	.030
Management Style	.353	.089	.292	3.956	.000
Organisational Policies	-.099	.098	-.106	-1.011	.313
Training and Development	-.155	.115	-.143	-1.344	.180

a. Dependent Variable: Employees’ Turnover Intentions

The regression analysis outcome reveals that the $R^2 = 0.099$ elucidates how much of the dependent variable’s (Employees’ Turnover Intentions) variance the model explained. This implies that 9.9 percent of the variance in employees’ turnover intentions in the organisations are explained by the model. The regression coefficients showed that the hypotheses that reward and benefits do not significantly affect employees’ turnover intentions and that management styles have no significant influence on workers' turnover intentions are rejected ($p = 0.030$ & $0.000 < 0.05$). On the other hand, the analysis revealed that the hypotheses that organisational policies, and training and development have no significant effect on employees’ turnover intentions are accepted ($p = 0.313$ & $0.180 > 0.05$).

The findings revealed that rewards and benefits, and management styles have significant effect on employees’ turnover intentions. While organisational policies, training and development have no significant effect on employees’ turnover intentions.

5.0 Discussion of Findings

The results for hypotheses one and two show that rewards and benefits have a significant influence on employees’ turnover intentions and that management styles have a significant effect on employees’ turnover intentions in selected manufacturing companies in Asaba, Delta State, Nigeria. These results are in line with those of other studies, which found that supervisory support at work can reduce stress and increase job satisfaction and employee intentions to stay (van Dierendonck et al., 2002), as well as that supportive environments are created by organisations that support effective leadership styles (Lancaster and Di Milia, 2015). Also, the findings support the view of Hao and Wang (2022) that supportive organisational

climate significantly reduces employee turnover intention.

The results for hypotheses three and four show that organisational policies do not have significant effect on employees’ turnover intentions and that training and development have no significant effect on employees’ turnover intentions in selected manufacturing companies in Asaba, Delta State, Nigeria. These outcomes are consistent with the findings of Sprink and Johnson (2013), that no significant relationship exists between organisational climate and employees’ turnover intentions.

In line with the findings of the study, not all dimensions of organisational climate have significant effect on employees’ turnover intentions as some of the effects of the studied dimensions are not significant. The consequence of this is that, there are some organisational climates that do not significantly contribute to the thoughts and decisions of employees to either remain or exit an organisation. This supports the view of Naz et al. (2020), that scholars attribute different climates to employees’ intention to quit or remain in the employment of an organisation. The study has however showed that organisational climate is an important consideration in employees’ turnover intentions.

6.0 Conclusion and Recommendations

This study examined organisational climate and employees’ turnover intentions in selected manufacturing companies in Asaba, Delta State, Nigeria with focus on the following dimensions of organisational climate: reward and benefit, management styles, organisational policies and training and development. Thus, the study's particular objectives were to investigate how employees' turnover intentions are impacted by the four dimensions of organisational

climate. The outcomes of the test of hypotheses showed that rewards and benefits, and management styles have significant effect on employees' turnover intentions. Conversely, the results of hypotheses three and four revealed that organisational policies and training and development do not significantly affect employees' turnover intention. These results led the study to the conclusion that although organisational climate has effect on employees' turnover intentions but not all dimensions of organisational climate are major considerations in an employee's intention to stay or leave an organisation.

The study's conclusions and findings led to the recommendations detailed as follows:

- i. For an organisation to get its employees committed thereby maximising the benefit from the potentials of its workforce by reducing their thoughts about exiting the organisations, they ought to pay adequate attention to reward and compensation of employees.
- ii. Also, the study recommends that organisations should encourage management styles that engender supportive organisational climate so as to reduce employees' turnover intention.
- iii. Management should understand that not all dimensions of organisational climate influence employees' turnover intentions. Therefore, effort should be made by management to identify those dimensions of organisational climate that influence employees' turnover intentions and pay adequate attention to such dimensions.
- iv. On the whole, it is the recommendation of the study that organisations should create a positive and strong organisational climate so that employees would be more committed and engaged and hence minimise their thoughts to quit the organisation.

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BOARD ATTRIBUTES AND FINANCIAL PERFORMANCE OF LISTED CONSUMER GOODS COMPANIES IN NIGERIA

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Abstract

This study examines the relationship between board attributes and financial performance of listed consumer goods companies in Nigeria for the period 2011 to 2022. Using Tobin's Q and Return on Asset as a measures of financial performance, four board attributes were used as independent variables (board size, board independence, managerial ownership and gender diversity) while firm size and firm age were used as control variables. Fourteen companies were selected as working population out of the twenty-one listed consumer goods companies within the period. Panel corrected standard errors (PCSEs) was used to find the relationship between board attributes and financial performance. Findings revealed that board size, board independence managerial ownership and gender diversity have a significant influence on the financial performance of consumer goods companies in Nigeria. Therefore, the study determines that, board attributes have a significant influence on the financial performance of listed consumer goods companies in Nigeria.

Key words: Board attribute, financial performance, agency theory, board size, board independence.

Introduction

Globalization facilitates business activities by eliminating the barriers existing in corporate trade and financial investment, businesses can have a wider opportunity to grow. In addition, with the highest spread of generation in technology, people who are interested and concerned in achieving their jobs from anywhere are encouraged to look for any company around the world that shows high performance for investment. The performance of companies is the first to be evaluated by investors around the world before making any investment decision. Financial performance measures how well a company configures its skills and resources that will generate revenues for the purpose of achieving a desired returns and its serve as a measure of the financial health of the company (Abubakar, Onipe &Nma, 2021)

Board attributes is one of the internal mechanism of corporate governance, their nature and composition play significant roles in determining the efficiency and effectiveness of the board. The board is saddled with the responsibility to oversee the

affairs of the company through scrutiny of company's strategies, policies and plan before approval. Board size refers to the number of directors in the board. It is an important factor in determining the effectiveness of the board. Board independence refers to the proportion of non-executive directors to total directors. Non-executive directors are viewed as representatives and protectors of the wider range of stakeholders. Managerial ownership refers to the proportion of total equity owned by executive and non-executive directors, it indicates the level of ownership of the directors and along with their monitoring power within organization to implement effective corporate governance. Gender diversity shows the proportion of female that constitute the board of directors, the presence of female directors in the boards enhance the board independence. (Al-Manaseer *et al.*, 2012; Shahwan, 2015; Kakanda, *et al.*, 2016; Kakanda, *et al.*, 2017). The harsh economic and operating environment caused by poor infrastructure, rising inflation, trade and foreign Exchange (FX) restrictions, porous land borders logistical setbacks, COVID 19

pandemic and level of insecurity have really affected the performance of the consumer goods industries as such there is need to bridge the practical gap so as to provide information that will help in decision making. Studies such as (Olabisi, *et al.*, 2018; Jacob, *et al.*, S2020) on board attributes and firms' performance have produced varied results ranging from supporting to opposing a positive relationship leading to a different empiric on board attributes and firm's performance. With respect to these problems, this study seeks to examine the relationship between board attributes and financial performance of listed consumer goods companies in Nigeria.

Acknowledging how relevant the consumer goods sector is crucial because it is spread over a wider area than other sectors of the economy. This research intends to offer greater insight into board attributes and development in Nigerian consumer goods sector.

Conceptual/Theoretical Framework and Literature Review

Concept of Financial Performance

Financial performance is a measure of how well or poorly an entity is putting its resources into use. It measures the level at which financial objectives are being met. Financial performance measures the efficiency applied by a firm in the use of its assets to create profits. It is known as the fact that; a business entity's purpose of existence is to create or increase the wealth of its stakeholders through its economic activities. Therefore, the financial performance of a business entity is crucial, thus requiring proper measurement (Mustapha, *et al.*, 2020).

The current study employed one of the market based measure of performance which is Tobin's Q and one accounting based measure of performance which is Return on Asset in measuring the performance of consumer goods companies in Nigeria due to the fact that, the former is forward looking aspect and a reflection of the expectation of the shareholders concerning firm's future performance, which has its basis on previous or current performance while the latter

indicate how profitable a company was in relation to its total asset. It gives managers, investors and analysts an idea as to how efficient a company's management was at using its asset in order to generate earnings (Shan & McIver Ron, 2011). Tobin's Q is the ratio between physical asset market value and its replacement value and it is measured as ratio of market capitalization plus total debt divide by the total asset of the company (Wahla, *et al.*, 2012). Return on asset is measured as percentage of net income over the total asset at the end of the year. Mohammed *et al.*, (2014). Therefore, the integration of the two measures will provide a clear picture of the companies under review.

Concept of Board Attributes

The board is saddled with responsibility for monitoring the quality of information contained in financial statements and thus controlling the behaviour of managers to ensure that their actions are aligned with the interests of stakeholders. Board attributes refer to features of corporate board that are tasked with overall management of the firm. The success or collapse of company is associated with the role acted by the management and firm governance as a process. Thus, for the board of directors to perform their functions effectively, some attributes like board size, board independence, managerial ownership, gender diversity, to mention but a few, must be in place (Kakanda, *et al.*, 2016).

Board Size and Financial Performance

Board size refers to the number of directors in the board. It is an important factor in determining the effectiveness of the board (Kakanda, *et al.*, 2016). It has been argued that, a larger board size leads to a diversity of the board that assists in safeguarding resources of the firms, aid in reducing environmental uncertainties in which they operate, ensures better management decisions, and improve directors' oversight function (Kakanda *eta al.*, 2017). Identifying an appropriate and optimal board size of a company has been a matter of debate in numerous studies. Some researchers

suggest for small size of board to enhance performance whereas others suggest larger board size to enhance performance.

Ahmed and Kehinde (2022), carried out a research on the relationship among board size, meetings and financial performance of thirteen listed industrial goods companies in Nigeria for the period 2012-2021, using return on asset a measure of performance and multiple regression as technique for analysis. Their findings show that board size has a positive and significant impact on financial performance while board meetings have a negative and insignificant impact on financial performance.

Saha and Kabra, (2019) conducted a research titled Does corporate governance influence firm performance? Evidence from India for the period 2014-2017, using one hundred non-financial and non-utility firms listed on Bombay stock exchange India as sample size, two stage least square as method of analysis and Tobin's Q as measure of performance. Findings show that board size has a positive and significant influence on firm's performance. Based on the above literature, we developed the following hypothesis.

H1: Board size has a significant influence on financial performance of listed consumer goods companies in Nigeria.

Board Independence and Financial Performance

Board independence can be defined as the proportion of non-executive directors relative to the total number of directors (Freihat, et al., 2019). It was argued that a board with a greater number of non-executive directors can be able to control the behaviour of managers and protect shareholders' interests and as well help in enhancing the stock prices of the firm better than a board with a lot of executive members (Freihat, et al., 2019). The reason was that, shareholders interest could be well protected by outside directors than the inside directors.

Empirical findings on board independence and financial performance are mixed with studies reporting positive, negative, significant and insignificant

influence of board independence on financial performance. Abubakar *et al.*, (2023) carried out a research on board characteristics and financial performance of listed banks in Nigeria for a period 2018-2022, using return on asset as a measure of performance. Board size, independence, gender and meeting were used as board characteristics, fourteen listed banks as sampled size and panel data regression was used as technique for analysis. Finding shows that board independence has a positive and insignificant influence on financial performance. Yammen *et al.*, (2019) conducted a research on impact of corporate governance practice on firm's performance: An empirical evidence from Indian tourism sector for a period 2013-2016, using thirty-nine hotels as sample size, Tobin's Q as measure of performance and ordinary least square regression as measure of performance. Findings revealed that, board independence has a negative and significant influence on firm's performance. Based on the above literature, we developed the following hypothesis.

H2: Board independence has a significant influence on financial performance of listed consumer goods companies in Nigeria

Managerial Ownership and Financial Performance

Managerial ownership is the proportion of total equity owned by executive and non-executive directors which indicates the level of ownership of the directors along with their monitoring power within the organization. It was observed that managers have a tendency of allocating firm's financial resources for their personal interest, this self-tendency behaviour is exacerbated by the separation of ownership and control creating conflict among the owners and the managers. This can be mitigated by having significant managerial ownership which will help in increasing the value of the company. Saha & Arifuzzaman (2011)

Empirical studies on managerial ownership and financial performance are of different views with positive and negative relationship. Augustine and Juliet (2022), carried out a research on the Influence of

Corporate Board Attributes on the Financial Performance of Conglomerate in Nigeria for the period 2011-2020, using return on asset as a measure of performance. Board size, independence, committees, meetings and shareholding were used as corporate board attributes, regression method was used for analysis. The result shows that board size, independence, stockholding and committees have significant influence on financial performance while board meetings have insignificant influence on financial performance of conglomerate in Nigeria. Also Ud Din, *et al.*, (2019) conducted a research on ownership structure and corporate financial performance in an emerging market: A dynamic panel data analysis, using one hundred and forty-six manufacturing firms listed at the Pakistan stock exchange for the period 2003-2012. Tobin's Q was used as a measure of performance and panel generalized method of moment was used to analysed the data. Finding shows that managerial ownership is positively and significantly related to financial performance. Based on the above literature, we developed the following hypothesis.

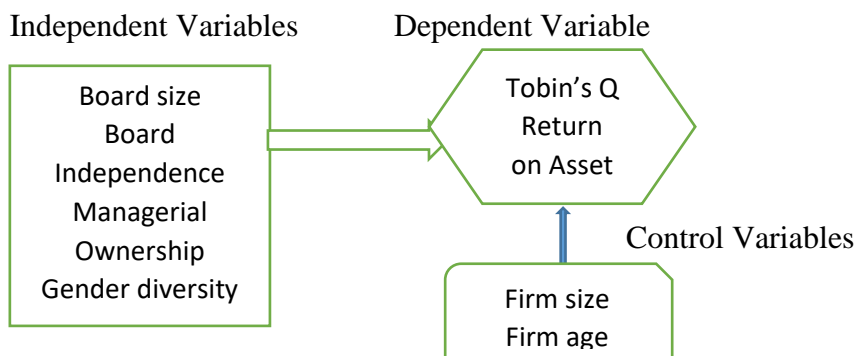
H3: Managerial ownership has significant influence on financial performance of listed consumer goods companies in Nigeria.

Gender Diversity and Financial Performance

Gender diversity shows the number of women that constitute the board of directors.

Conceptual Frame Work

The conceptual frame work presents the relationship that exist between the independent variables, the control variables and the dependent variable.



Source: Author compilation (2023)

Diversity is associated to enrich the firm's value and financial performance as it provides different insights and perspectives by enhancing the board independence and playing a vital role toward the perception of shareholders and their confidence about the company's success (Naseem *et al.*, 2017)

Empirical studies based on gender diversity and financial performance has a mixed finding. Abubakar *et al.*, (2023), carried out a research on board characteristics and financial performance of listed banks in Nigeria for a period 2018-2022, using return on asset as a measure of performance. Board size, independence, gender and meeting were used as board characteristics, fourteen listed banks as sampled size and panel data regression was used as technique for analysis. Finding shows that board gender has insignificant influence on financial performance. Also, Charles, *et al.*, (2018), conducted a research on corporate board diversity and performance of deposit money banks in Nigeria for a period 2011-2015, using Tobin's Q as measure of performance and generalized least square technique as measure of analysis. Finding shows that, gender diversity was positively related to financial performance. Therefore, we developed the following hypothesis.

H4: Gender diversity has significant influence on financial performance of listed consumer goods companies in Nigeria.

Theoretical Frame Work

The theoretical framework for the understanding of board attributes was supported by the agency theory

Agency Theory

Agency theory as postulated by Jensen and Meckling (1976) which is termed as a contract under which one or more persons (the principal(s)) engage another person (the agent) to perform some service on their behalf which involves delegating some decision-making authority to the agent. It explains the problems arising from the separation of ownership and control. Agency theory provides a useful way of explaining relationships where the parties' interests are at odds and can be brought more into alignment through proper monitoring and a well-planned compensation system. The agency relationship explains the association between providers of corporate finances and those entrusted to manage the affairs of the firm. Agency theory has been found to be more appropriate to anchor this study

Methodology

The study was quantitative in nature. The population for this study includes

consumer goods companies listed on the Nigerian Exchange Group. Filtration technique was adopted to select fourteen companies out of the twenty-one listed. This was due to the fact that data needed were not sufficient in the annual reports of all the listed companies. The companies selected were Cadbury Nig Plc, Champions Breweries Plc, Dangote sugar refinery plc, Flour Mills Nig Plc, Guinness Nig plc, Honeywell flour mills Plc, Northern Nig flour mills plc, Nascon allied industries plc, Nestle Nig plc, Nigerian Breweries Plc, Nigerian enamelware plc, PZ Cusson Nig plc, Uniliver Nig plc and Vitafoam Nig plc

The data used for this study was secondary data derived from the annual financial statements of the selected companies. The period considered for this study was from 2011 - 2022. The study employed Panel data regression analytical technique in order to observe all variables of the period. The dependent variables, financial performance, was measured using Tobin's Q and Return on Asset while the independent variables, board attributes have board size (BS), board independence (BI), managerial ownership (MO), and gender diversity (GD) as its indicators. The control variables were firm size (SIZE) and firm age (AGE).

Description of Variables

Measure	Variable	Abbreviation	Measurement
Independent	Tobin's Q	TOQ	Ratio of market capitalization plus total debt divide by total asset of the company Profit before tax divide by the total asset of the company at the end of the year
Independent	Return on Asset	ROA	
Dependent	Board size	BS	Total number of directors serving on the board of directors
Dependent	Board independence	BI	Number of non-executive directors divided by the aggregate number of directors
Dependent	Managerial ownership	MO	Proportion of total equity owned by directors of the company
Dependent	Gender diversity	GD	Is a dummy variable which takes the value of 1 if women are present in boards and zero otherwise
Control	Firm size	SIZE	Natural Log of total assets
Control	Firm age	AGE	Number of years since listed

Source: Researcher (2023)

Model Specification

A linear multiple regression tools were used to examine the relationship between board attributes, control variables and financial performance.

$$TOQ = \beta_0 + \beta_1 BS_{it} + \beta_2 BI_{it} + \beta_3 MO_{it} + \beta_4 GD_{it} + \beta_5 SIZE_{it} + \beta_6 AGE + \epsilon_{it} \dots (1)$$

$$ROA = \beta_0 + \beta_1 BS_{it} + \beta_2 BI_{it} + \beta_3 MO_{it} + \beta_4 GD_{it} + \beta_5 SIZE_{it} + \beta_6 AGE + \epsilon_{it} \dots (2)$$

Where

TOQ = Tobin’s Q

ROA = Return on asset

BS = Board size

BI = Board independence

MO = Managerial ownership

GD = Gender diversity

SIZE = Firm size

AGE= Firm age

ϵ_{it} = is the random error

$\beta_1 - \beta_6$ = is the regression coefficients of the of the study variables

it = Panel indicator

Results and Discussion

The study adopted the use of both descriptive and inferential statistics in ascertaining the relationship between board attributes and financial performance. The descriptive statistics adopted includes frequencies, mean, minimum, maximum and standard deviation while inferential statistics included correlation, robustness and regression analysis.

Descriptive Statistics of Variable

Table 1 shows the descriptive statistics of all the variables used in the study. It was revealed that, the mean of the dependent variable Tobin’s Q was 1.8569, which indicates the proportion of market value to the book value of company’s total assets with a minimum value of 0.18 times and a maximum value of about 9.0 times. The standard deviation of 1.7553 indicates significant dispersion among the companies with regards to Tobin’s Q. The mean value of the dependent variable return on asset was 0.08624, indicating that, on average the profit earned by the consumer goods companies was about 9% with a maximum loss of 28% and a maximum profit of about 38%. The standard deviation of about 0.11 shows no significant dispersion among the companies. The mean value of board size was 10 members with

minimum of 6 members and maximum of 15 members. The standard deviation of 2.4822 shows that, there was significant variation among the size of the board of the companies. The mean value of board independence was about 0.74 with a minimum of about 43% and a maximum of 93%. This indicate that 74% of the members of the boards for the period consist of non-executive directors while 26% of the directors were executives which imply that, the board of directors comprised mostly of non-executive directors, the standard deviation of 0.1325 indicates that, there was no much difference in proportion of membership of the board among the listed companies.

Furthermore, the mean value of managerial ownership was 5%, with a minimum of 0% and a maximum of about 75%. The standard deviation of 0.14 signifies that managerial shareholding among the directors of the companies was widely varied among the companies. The mean value of gender diversity was 0.05, indicating that an average of 5% of the directors of the companies were females with a minimum of 0% and a maximum of 14%. The standard deviation of 0.3984 shows that, there was no significant variation among the female gender of the board of the companies. Firm size has a mean of about 1.07e+11, with a minimum of

1.31e+09 and maximum of 6.21e+11. But the standard deviation of 1.25e+11 suggests a high level of dispersion in the total assets among the companies. This indicate that on average the sampled companies have a total asset of N 107,000,000,000 with a minimum total asset of N 1,310,000,000 and a

maximum of N 621,000,000,000, N 125,000,000,000 shows that, there was a significant variation among the companies. Firm age has a mean value of about 35 years with a minimum of 2 years and maximum of 57 years.

Table 1 Descriptive Statistic

Variables	Observation	Mean	Std Deviation	Minimum	Maximum
Tobin's Q	168	1.8568	1.7553	0.1832	8.9659
ROA	168	0.0862	0.1124	-0.2837	0.3776
Bsize	168	10.0060	2.4823	6	15
Bind	168	0.7382	0.1321	0.4286	0.9333
Mo	168	0.0578	0.1442	0	0.7474
Gend	168	0.8036	0.3985	0	0.1428
Fsize	168	1.07e+11	1.25e+11	1.31e+09	6.21e+11
Fage	168	34.8571	12.7605	2	57

Source: Authors computation using STATA 13

Correlation Analysis

The Pearson Correlation was carried out on both the dependent and independent variables in order to check for multicollinearity and relationship between the various variables in the study. The values of the correlation coefficient range from -1 to 1. The correlation matrix as shown in table 2

indicates that the assumption of multicollinearity has not been violated because none of the variables was greater than 0.5 except gender diversity & firm size and managerial ownership & firm age which have a strong positive correlation of 0.69 and strong negative correlation of -0.55 respectively.

Table 2 Pearson Correlation Analysis

Variables	Tobin's Q	ROA	Bsize	Bind	Mo	Gend	Fsize	Fage
Tobin's Q/ROA	1.000	1.000						
Bsize	-0.1866	-0.0834	1.000					
Bind	-0.1072	-0.0289	0.2583	1.000				
Mo	-0.2238	-0.1183	0.1785	0.0576	1.000			
Gend	-0.0527	0.3373	0.3039	0.1226	0.0598	1.000		
Fsize	0.1213	0.3011	0.3966	0.1589	0.0632	0.6915	1.000	
Fage	0.0974	-0.1826	-0.0830	-0.2629	-0.5477	-0.0668	0.0207	1.000

Source: Authors computation using STATA 13

Robustness Test

The robustness test was conducted in order to ensure the validity of all statistical inferences of the study.

Normality Test and Normality of the residual- This was carried out in order to check for outliers and to find out whether data

is normally distributed or is not normally distributed. Table 3 indicate a good fit and does not indicate the presence of outliers among the regression standardized residual and also affirms the normality of the research data.

Table 3 Normality Test Result

Variables	Skweness	Kurtosis
Tobin's Q	1.9670	6.7560
Return on asset	0.0113	3.8412
Bsize	0.4432	2.4190
Bind	-0.1622	1.8822
Mo	4.1218	19.7494
Gend	-1.5282	3.3354
Firm size	-0.4095	2.2304
Firm age	-1.0671	3.3718

Source: Result output using STATA 13

Multicollinearity Test - is a statistical phenomenon in which two or more predictor variables in a multiple regression model are highly correlated. The result of variance inflation factor (VIF) test which ranges from

a minimum of 1.01 to a maximum of 1.02 indicates the absence of collinearity between the independent variables of the study.

Table 4 Variance Inflation Factor

Variables	VIF
Bsize	1.28
Bind	1.18
Mo	1.51
Gend	1.95
Fsize	2.12
Firm age	1.60

Source: Result output using STATA 13

Heteroskedasticity Test - This test was conducted in order to check whether the variability of error terms is constant or not. The result of the heteroskedasticity test shows that, there was no presence of heteroskedacity in the second model because the probability was 0.2172 and insignificant. For the first

model the result of the heterokedasticity test shows the presence of heterokedasticity with a significant probability of 0.0000. This was corrected through robust test which is normally carried out whenever there was strong suspicious or existence of heterokedasticity.

Table 5 Heteroskedacity Test Result

Ho	Variables	Chi2(1)	Prob>chi2
Constant variance	Fitted values for tobin'sq	35.79	0.0000
Constant variance	Fitted values for roa	1.52	0.2172

Source: Result output using STATA 13

Hausman Specification Test – is a test performed in order to decide between fixed or random effect models. The result of the tests reveals that both models were correlated with

a probability of (0.0000) and 0.038. This lead to the rejection of random effect regression in favour of fixed effect regression.

Table 6 Hausman Test Result

Ho	Chi2(11)	Prob>chi2
Coefficient not systematic	46.94	0.0000
Coefficient not systematic	13.37	0.038

Source: Result output using STATA

Regression Analysis

Regression analysis between board attributes and financial performance for listed consumer goods companies in Nigeria based on model (1) was presented in Table 7, which

showed the regression results between dependent variable, (Tobin’s Q) independent variables (board size, board independence, managerial ownership and gender diversity) and control variables (firm size and firm age)

Table 7 Panel corrected standard error

Tobin’s Q	Coefficient	Std error	Z –value	P-value
Constant	-5.9973	1.8232	-3.29	0.001
Bsize	-0.1499	0.0339	-4.42	0.000***
Bind	-1.3529	0.7829	-1.73	0.084*
Mo	-3.0634	0.5688	-5.39	0.000***
Gend	-1.1303	0.4702	-2.40	0.016***
Fsize	1.1202	0.2222	5.04	0.000***
Fage	-0.0152	0.0113	-1.35	0.178

No of Obs = 168.00

R- Squared = 0.1601

Wald Chi2 (6) = 125.90

Prob > Chi2 = 0.0000

Note: ***, ** and * indicate 1% and 5% and 10% significant levels respectively.

Source: Authors computation using STATA 13

Table 7 present the regression result of the relationship between board attributes and financial performance of listed consumer goods companies in Nigeria. The regression results show the cumulative R-square (0.1601) which is the multiple coefficient of determination which gives the proportion or percentage of the total variation in the dependent variable explained by the explanatory variables jointly. Hence, it signifies that, 16% of total variation in Tobin’s Q of listed consumer goods companies in Nigeria was caused by board size, board independence, managerial ownership, gender diversity, firm size and firm age of the companies. Similarly, the result of the P-value of 0.0000 implies that the model was fit and significant at 1% level. Therefore, the model was fit and the explanatory variables were properly selected, combined and used as substantial value of the Tobin’s Q as was accounted for by the explanatory variables.

Test of Hypotheses

Result of the regression in table 7 indicates that, board size was negatively and significantly related to Tobin’s Q at 1% level. This indicate that an increase in board size of the Nigerian consumer goods will lead to a decline in financial performance. This result was in line with the prediction of agency theory and in consonance with that of Nath, et al., (2015). Therefore, the study failed to reject the hypothesis (1) which state that, board size has significant influence on financial performance of listed consumer goods companies in Nigeria.

Also, the result in table 7 indicates that, board independence was negatively and significantly related to financial performance at 10% level. This shows that, increase in non-executive directors contribute negatively and significantly to the performance of listed consumer goods companies in Nigeria. This result was in line with agency theory and also in consistent with Yammen, *et al.*, (2019). Therefore, we failed to reject hypothesis (2)

that says, board independence has significant influence on financial performance of listed consumer goods companies in Nigeria.

Similarly, the regression result revealed that, managerial ownership has a negative and significant influence on financial performance at 1% level. This shows that the proportion of shares ownership by the board members negatively and significantly affect the performance of the listed consumer goods companies in Nigeria. This is in line with agency theory and in consistent with Nath, *et al.*, (2015). Therefore, we failed to reject hypothesis (3) that state managerial ownership has a significant influence on financial performance

of listed consumer goods companies in Nigeria.

Moreover, the regression result shows that, gender diversity has a negative and significant influence on financial performance at 1% level. This reveals that, the proportion of female that constitute the board of directors negatively and significantly affect the financial performance of the listed consumer goods companies in Nigeria. This finding is in line with that of Naseem, *et al.*, (2017). Therefore, we failed to reject hypothesis (4) which state that gender diversity has a significant influence on financial performance of listed consumer goods companies in Nigeria.

Table 8 Panel corrected standard error

Return on asset	Coefficient	Std error	Z –value	P-value
Constant	-0.1727	0.1338	-1.29	0.196
Bsize	-0.0091	0.0025	-3.62	0.000***
Bind	-0.1160	0.0448	-2.59	0.010***
Mo	-0.2557	0.0473	-5.41	0.000***
Gend	0.0590	0.0244	2.41	0.016***
Fsize	0.0493	0.0167	2.95	0.003***
Fage	-0.0036	0.0006	-5.91	0.000***

No of Obs = 168.00

R- Squared = 0.2907

Wald Chi2 (6) = 221.66

Prob > Chi2 = 0.0000

Note: ***, ** and * indicate 1% and 5% and 10% significant levels respectively.

Source: Authors computation using STATA 13

Regression analysis between board attributes and financial performance for listed consumer goods firms in Nigeria based on model (2) was presented in Table 8, which showed the regression results between dependent variable, (Return on Asset) independent variables (board size, board independence, managerial ownership and gender diversity) and control variables (firm size and firm age). The regression results revealed the cumulative R-square of 0.2907 which is the multiple coefficient of determination which gives the proportion of the total variation in the dependent variable explained by the explanatory variables jointly. Therefore, the result shows that about

29% of total variation in financial performance of listed consumer goods companies in Nigeria was caused by board size, board independence, managerial ownership, gender diversity, firm size and firm age of the companies. Similarly, the result of the P-value of 0.0000 implies that the model was fit and significant at 1% level. Therefore, the model was fit and the explanatory variables were properly selected, combined and used as substantial value of the profitability as was accounted for by the explanatory variables.

Test of Hypotheses

Result of the regression in table 8 indicates that, board size has a negative and

significant influence on return on asset at 1% level. This indicate that, board size of the listed consumer goods companies in Nigeria was negatively and significantly influencing the financial performance of the listed companies. This result was in line with the prediction of agency theory and in consistent with the result of model (1). Therefore, the study failed to reject hypothesis (1) which state that, board size has a significant influence on financial performance of listed consumer goods companies in Nigeria

Furthermore, the regression result indicates that, board independence has a negative and significant influence on the financial performance of listed consumer goods companies in Nigeria at 1% level. This shows that, increase in non-executive directors contribute negatively and significantly to the financial performance of listed consumer goods companies in Nigeria. This result was in line with agency theory and consistent with the result of model (1). Therefore, we failed to reject hypothesis (2) which state that, board independence has a significant influence on financial performance of listed consumer goods companies in Nigeria.

Also, the regression result revealed that, managerial ownership has a negative and significant influence on financial performance of the listed consumer goods companies in Nigeria at 1% level. This shows that, the proportion of shares owned by the board members contribute negatively and significantly to the financial performance of listed consumer goods companies in Nigeria. This was in line with the result of model (1). Therefore, we failed to reject hypothesis (3) which state that, managerial ownership has a significant influence on the financial performance of the listed consumer goods companies in Nigeria.

Similarly, the regression result shows that, gender diversity has a positive and significant influence on the financial performance of listed consumer goods companies in Nigeria at 1% level. This revealed that, the proportion of female that constitute the board of directors were positively and significantly influencing the

financial performance of listed consumer goods companies in Nigeria. This finding is in line with that of Charles, et al., (2018). Therefore, we failed to reject hypothesis (4) which state that, gender diversity has a significant influence on the financial performance of listed consumer goods companies in Nigeria.

Conclusion and Recommendation

This study examines the influence of board attributes on financial performance of listed consumer goods companies in Nigeria. The findings revealed that, board size, board independence, managerial ownership, gender diversity and firm size have a significant influence on financial performance of listed consumer goods companies in Nigeria. while firm age has an insignificant influence on financial performance of the listed consumer goods companies in Nigeria.

The study recommends skilled, experience and expedience board size which will help to reduce conflicting interest in boards, efficiency, expediency in decision making and competitiveness. Also, there is need for companies to revise their level of independence in their boards so as to provide a proper monitoring. In addition, the study recommends that, managerial ownership and gender diversity need to be improve in order to impact on the financial performance of the listed consumer goods companies in Nigeria. This study may be improved by including other sectors of the economy and some other variables that may affect corporate financial performance.

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INFORMAL FINANCIAL SERVICES AND WOMEN ENTREPRENEURSHIP DEVELOPMENT, AMONG SMALL SCALED ENTERPRISES IN KATSINA, KATSINA STATE, NIGERIA

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Abstract

The study investigated the Informal Financial Services and Women Entrepreneurship Development among Small-Scaled Enterprises in Katsina, Katsina State. The study adopted a multi-stage sampling technique questionnaire were used to collect the data. Results of the study revealed a significant relationship between loan from friend/relative, Adashe (daily contributions), rotational saving, and corporative societies, and financing of women entrepreneurship in Katsina state, Based on the findings, loans from friend/relative, was found not to predicts financing of women entrepreneurship with the β value 0.11, which increased by 11.1%, While Adashe (daily contribution) was a good predictor of financing of women entrepreneurship in Katsina state with the β value 0.123. Rotational saving, was found not to predict financing of women entrepreneurship with the β value 0.025, and corporative societies, with β value 0.390. Based on the findings, it was recommended that the women SMEs managers needs to looks other effective informal sources of finance to supports new ideas, experimentations, and processes to create new services, products or advanced technological processes. It was also recommended, that the woman SMEs managers must be able to identifying, and exploiting other informal finance opportunities to capture vacant market positions with sustainable profit potential.

1.0 INTRODUCTION

In most developing nations, such as Nigeria, the rapid rise of informal financial institutions is a result of conventional financial services' incapacity to close significant gaps in the financial support provided to individuals and small company owners. About 35% of Nigeria's economically active population receives services from the formal financial system, with the remaining 65% receiving services from informal financial providers (CBN, 2017). The name is also different in Nigeria, where there are three major ethnic groupings or languages. According to CBN (2017), Rotating Savings and Credit Associations (ROSCA's) are known as Esusu among the Yoruba people in the west, Etoto among the Igbo people in the east, and Adashe among the Hausa people in the north. Informal financial institutions are mainly lawful sources of funding, although they are frequently unregistered, unrecorded, and unregulated by the government (Nwokocha, 2022). The purpose of this study is to

evaluate the funding options for women entrepreneurs operating small-sized businesses in Katsina, Katsina State, Nigeria, as well as the informal financial services available to them.

WSEs, or women-owned small-sized businesses, are businesses that provide manufacturing, services, and processing to the unemployed youth population. They also help to support the manufacturing sector of the economy (Nwokocha, 2022). Nwosu, Onoyima, Madu, and Nwokocha (2019) claim that these businesses have given the women the opportunity to improve both the financial security of their families and the standard of living for the impoverished in rural areas. Research indicates that 35% of Nigerian women entrepreneurs own and manage small businesses in the nation's industrial sector (Nwokocha, 2022). These businesses employ between 10 and 49 people and have a maximum asset value of between 5 and less than 50 million naira, excluding working capital (Nwokocha & Madu, 2020; Nwokocha & Nwankwo, 2019).

The SDGs Resource Center's report states that gender equality is an essential and unalienable human right. However, major economic, social, and legal obstacles prevent women from achieving equality throughout the world (Oluwakemi, Györke, & Gubacsi, 2023). Women still provide a disproportionate amount of unpaid care giving, and prejudice connected to pregnancy is a common occurrence for them. The development and expansion of their enterprises present additional difficulties for female entrepreneurs, such as limited access to capital and professional networks. Women-owned companies receive less than 1% of the money that large companies spend on suppliers (Oluwakemi *et al.*, 2023).

On the other hand, women entrepreneurs who lack access to standard bank loans typically obtain their capital from unofficial sources such as personal savings, friends, family, parents, and spouses (Oluwakemi, *et al.*, 2023). These resources usually offer startup funding that is adequate for small-scale businesses, which include restaurants, retail stores, and daycare centers—some of the most popular ventures owned by female entrepreneurs.

Small scaled businesses are critical to attaining the Sustainable Development Goals (SDGs) globally and at all development levels (Organization for Economic Co-operation and Development [OECD], 2017). Small-sized businesses generate employment possibilities in a variety of industries and geographic regions, hiring a wide range of laborers, including low-skilled workers, and offering chances for skill advancement (OECD, 2018). According to the 2019 Small Scale Enterprises Finance Forum Report, Small Scale made up 90% of all businesses in 176 countries and contributed more than 50% of the world's gross domestic product (GDP). 99.2% of all enterprises in Malaysia are small scale enterprises, which also account for 32% of the country's GDP, 59% of jobs, and 19% of exports (Tahir, Razak & Rentah, 2020). In China, Small scale enterprises account for around 97% of all businesses. They provided over 58% of the GDP and 68% of China's export earnings (Hoffmann, 2017). In

emerging economies, Small scaled enterprises accounted for up to 60% of total employment and 40% of national income (World Bank, 2021). As a result, several nations have concentrated on growing Small scaled businesses in recent decades in order to promote economic growth (Imran & Aldaas, 2020). According to National Bureau of Statistics (NBS, 2019) studies, only 20% of small-sized businesses in Nigeria survived past their fifth year, despite the significant contributions made by these businesses.

It is against this background of the study aims to assess the informal financial services and women entrepreneurship development among small-scaled businesses in Katsina, Katsina State Nigeria. Thus, the purpose of this study is to evaluate the funding options for women entrepreneurs operating small-sized businesses in Katsina, Katsina State, Nigeria, and the informal financial services available to small-sized businesses. The main objectives of these research, is to examine the informal financial services (Loan from relatives/friends, Adashe (daily contribution), Rotational savings, and Cooperative Societies) and women entrepreneurship development among Small-sized businesses, using some selected Small-Scaled in Katsina, Katsina State, as a case study.

1.5 Research Hypotheses

The following hypotheses are formulated to guide the study:

Ho1: Loans from relatives/friends is not significantly related to Women Entrepreneurship development, among Small-Scaled Enterprises in Katsina, Katsina State.

Ho2: Adashe (daily contribution) is not significantly related to Women Entrepreneurship development, among Small-Scaled Enterprises in Katsina, Katsina State.

Ho3: Rotational saving is not significantly related to Women Entrepreneurship development, among Small-Scaled Enterprises in Katsina, Katsina State.

Ho4: Cooperative societies are not significantly relating to Women Entrepreneurship development, among

Small-Scaled Enterprises in Katsina, Katsina State.

2.0 LITERATURE REVIEW

2.1 Concept of Women Entrepreneurship

Women's economic empowerment is a cornerstone of the 2030 Agenda for Sustainable Development. The 2016 Report of the United Nations Secretary-General's High-Level Panel on Women's Economic Empowerment provides strong evidence that women are lagging men in terms of the number of female business owners, the size of women-owned businesses, and their access to economic resources. Specifically, women-owned enterprises are smaller and disadvantaged in their access to credit, resources, and assets (UN Secretary-General's High-Level Panel on Women's Economic Empowerment 2016). With data on the existing gender gap in female entrepreneurship as against their counterpart, tracking the progress achieved by women in this area becomes more important.

Women entrepreneurs are simply women that carry out total entrepreneurial role and activities, which involve taking risks and resource combination in a unique way to take advantage of the identified opportunity in their immediate locality and environment which result in production of goods and services to meet such needs (Oseremen, 2015). It involves women utilizing their skills, means, and knowledge to establish a new business venture by facing the issues and challenges until attaining financial gain by business venture (Nagarajan, 2016). Mordi et al.'s (2010) concept of women's entrepreneurial development in Nigeria is defined as the challenges women entrepreneurs face as they develop their businesses in the Nigerian context (Mordi et al., 2010). Mordi et al.'s 2010 paper is one of the most highly cited scholarly papers on the issue of Nigerian women's entrepreneurship, with close to 300 scholarly citations up to 2022 (Google Scholar, 2022). Institutional theory (Meyer & Rowan, 1977), as used by Mordi et al. to ground their research, is a foundational theory that has been utilized to more closely analyze the institutional,

business, and developmental environment's potential to define, limit and eradicate opportunities for the woman entrepreneur in Nigeria (Halkias & George-Ufot, 2021).

Olarewaju and Fernando (2020) described African women's collective action through entrepreneurship as the action taken by African women entrepreneurs who shared socioeconomic needs and worked to drive female empowerment outcomes, economic empowerment, and positive social change (Ojong et al., 2021; Caruso & Cini, 2020). In developing economies, including Nigeria, collective action is increasingly seen as an indirect outcome of women's entrepreneurship, pushing the socio-political boundaries for gender equality (León-Himmelstine et al., 2022; Olugbemi & Omoniyi, 2021). Olarewaju and Fernando's (2020) scholarly work on African women's collective action through entrepreneurship was grounded in institutional theory with its wide-ranging application to entrepreneurship research. The biggest problem still facing African women entrepreneurs is cultural barriers. Due to customs and cultures that forbade them from owning or inheriting property, women found it difficult to borrow money without the required collateral (Anyansi-Archibong, 2021).

2.2 Concept of Informal Financial Services

Access to financial resources is considered one of the most important single factors essential for both the growth and survival of many entrepreneurial ventures (Wellalage & Locke, 2017). In advanced financial markets, new ventures access start-up capital from a range of sources, including angel investors, bank loans, and venture capitalists (Berger & Udell, 2003). Financial institutions in these markets operate within established economic and social structures. In contrast, in market conditions with high institutional voids largely in the developing world, informal financing mechanisms, including community-based cooperatives, often operate in parallel or as an alternative to formal finance systems (Baydas et al., 1995; Bruton et al., 2021; Madestam, 2014). Within such market conditions, businesses tend to

heavily rely upon informal sources of funding (see Degryse et al., 2016; Ojong, 2019; Zhang et al., 2020). Common sources of finance in these markets include rotating saving groups, RSGs (e.g., community-based cooperatives) and reciprocal financial schemes (e.g., interpersonal financial borrowing—money from friends, family and neighbours) (Allen et al., 2019; Lee & Persson, 2016; Ojong, 2019).

Such informal financing schemes have attracted the attention of disadvantaged communities in the developing world due to their relatively high processing speed, ease of access, lower or no administrative fees, and in the majority of cases, no collateral requirements (Nguyen & Canh, 2021) compared with micro lending arrangements (Bhatt & Tang, 1998). Similarly, scholarly research elsewhere reports that such informal financing schemes are not only an important source of finance for the poor (see Bruton et al., 2021) but also provide a lifeline for projects (e.g., sewing clubs) initiated by women in Africa (Biggart, 2001; Clark, 1997; Karaivanov & Kessler, 2018). Thus, and as a means of financing entrepreneurial activity, such informal arrangements provide the leverage businesswomen need to raise start-up funds at lower transaction costs (Pham & Lensink, 2007).

2.3 Theoretical Framework

The study was guided by the theory of moneylender, social capital theory, and gender and entrepreneurship theory.

2.3.1 Social Capital Theory

Social capital theory emerged as a concept in the field of sociology and social sciences during the latter half of the 20th century. The term "social capital" gained prominence as scholars sought to understand the role of social networks and relationships in shaping individuals' and communities' well-being and success. The theory examines how the quality and quantity of social connections can lead to various benefits and resources, including trust, cooperation, support, information sharing, and access to opportunities. According to Yahaya (2009).

Nan Lin, a prominent Chinese-American sociologist, also made significant contributions to social capital theory. His book "Social Capital: A Theory of Social Structure and Action" (2001) expanded the understanding of social capital by proposing a framework to measure and analyze social capital at the individual and network levels. Lin's work has been influential in understanding the implications of social capital on various social processes and outcomes.

Additionally, social capital is thought to contribute to social cohesion and community resilience, promoting positive outcomes in areas such as health, education, and economic development (Liley, 2011).

2.3.2 Theory of Moneylenders

The theory implies that formal and informal credit can be either complements or substitutes. The model also explains why weak legal institutions increase the prevalence of informal finance in some markets and reduce it in others, why financial market segmentation persists, and why informal interest rates can be highly variable within the same sub-economy. Model Consider a credit market consisting of risk-neutral entrepreneurs (for example, farmers, households, or small firms), banks (who provide formal finance), and moneylenders (who provide informal finance). In the competitive benchmark case, I follow Burkart and Ellingsen (2004) by assuming that formal banks offer overdraft facilities of the form $f \leq (1+r)LE$, where LE is the loan, $(1+r)LE$ the repayment, and LE the credit limit.

2.3.3 Gender and Entrepreneurship Theory

According to Grootaert & Van Bastelaer (2002), gender and Entrepreneurship theory emerged as a field of study in response to the recognition that woman's experiences and contributions to entrepreneurship differed significantly from those of men. Historically, entrepreneurship research tended to focus on male-dominated industries and predominantly male

entrepreneurs, neglecting the unique challenges and opportunities faced by women entrepreneurs. The theory seeks to understand how gender roles, societal norms, and cultural practices influence women's engagement in entrepreneurship, as well as the impact of entrepreneurship on gender equality and economic development. It explores the barriers and enablers that women encounter in starting and growing businesses, as well as the potential benefits of promoting women's entrepreneurship for overall economic growth and societal well-being.

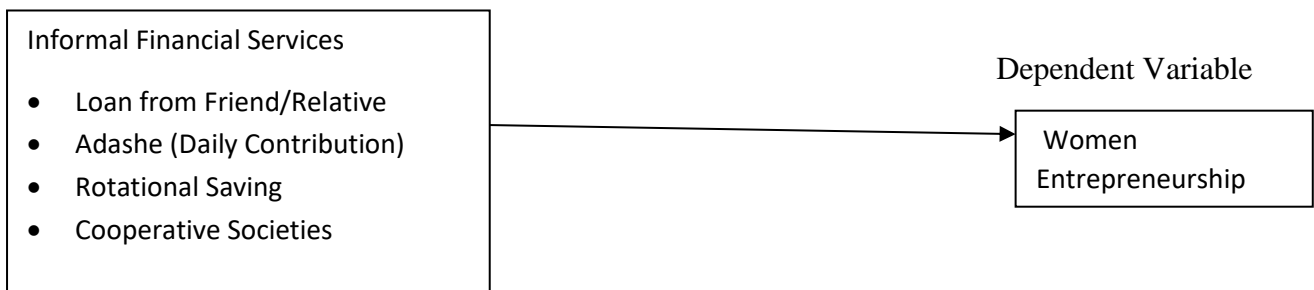
2.4 Empirical Reviews

Fidelis (2021) in a study on female entrepreneurship, credit availability, and firm performance in Nigeria carried out at Nord University. The study focuses on factors that influence women's entrepreneurship, how female-owned businesses obtain credit, and how credit availability affects the success of these businesses in Nigeria. Using logistic regression analysis and descriptive statistics to analyze data from the 2014 Nigerian Enterprise Survey, the study produced a number of findings that led to the following conclusions: In Nigeria, factors such as land availability, financial accessibility, infrastructural availability, political stability, education, mentorship, regional affinities, economic outlook, business registration, licensing, and trade regulations all play a role in promoting female entrepreneurship.

The impact of financial accessibility on the expansion of female entrepreneurs in Abia State, Nigeria, was examined by Okezie *et al.* (2016). The study's particular goals were to ascertain the variables influencing women entrepreneurs' access to financing and the impact of that accessibility on the expansion of women entrepreneurs in the state of Abia. Using a basic random sampling technique, 60 respondents were given a structured questionnaire. The data was analyzed using multiple regression analysis and descriptive statistics. According to the study, the majorities of the respondents were married with small households, less than 40 years old, and had postsecondary education.

Zwingtona *et al.* (2017) use the Federal Capital Territory of Abuja as a case study to investigate the impact of official and informal funding sources on the growth of women-owned businesses in Nigeria. The research design used in the study was survey. Based on their size and entrepreneurial activity, three distinct women's entrepreneurship groups in Abuja were given structured questionnaires. The study's population consists of all registered associations of female entrepreneurs in Abuja as of December 2017. These associations include the Abuja Market Women Association (AMWA), Business Professional Women (BPW), and National Association for Small Scale Industries (NASSI).

**2.5 Conceptual Framework
Independent Variables**



3.0 METHODOLOGY

A cross-sectional sample survey field study is employed in this research as data were collected at a single point in time. The population of this study consists of all the

female owned or led Small- Scale enterprises in Katsina, Katsina State and also some selected Micro Finance Institution in and around Katsina town with a total population of 493, the female owned business stood at 308, and there are 185 micro business

registered with Katsina State Ministry of Commerce and Industry as at December, 2022. A sample size of 221 Business is used to represent the entire population, through Bowla’s formula. The sample size was

determined using Bowla’s formula which is concerned with applying of the normal approximation with 95% confidence level and 5% error tolerance.

Thus:
$$N = \frac{n}{1+ne}$$
 Where: N = Total Population
 n = Sample size
 1 = Constant
 e = Limit of tolerance (0.05)

Based on the above, the sample size is given as:

$$N = \frac{493}{1+493(0.05)^2}$$

$$N = \frac{493}{1+1.2325}$$

$$N = \frac{493}{2.2325}$$

$$N = 221$$

A mixed-method sampling technique is adopted, this involves a stratified sampling technique that is used in a population that is heterogeneous and there is a need to obtain a representative sample. The researcher used primary sources of data where data was collected by using administered questionnaire.

the researcher travelling to the respondents’ location and hand-delivering survey questionnaires to them. The Statistical Package for Social Science (SPSS) version 22 was used for data analysis. Informal financial services were measured using Adejo (2015) measures. Financing women entrepreneurship measures was adapted from the work of Anyansi-Archibong, (2021).

A drop-off and collect method was applied in this research. This method involves

Hence, the model is expressed as $WE = \beta_0 + \beta_1LRF + \beta_2DC + \beta_3RS + \beta_4CS + e$

Where:

WE = Women Entrepreneurship

LRF= Loan from relatives/friends

AD = Adashe (Daily contribution)

RS = Rotational Savings

CS = Cooperative Society

β_0 = Parameters to be estimated (average amount of variation of dependent variable to influence of independent variable).

$\beta_1 - \beta_4$ = Partial derivatives or the gradient of the independent variables.

e = Error term.

The validity of this research refers to the consistency with which the facts are collected in texts or reports without being disturbed by a researcher. As for this research, the reliability of the constructs ranges from 0.870 to 0.936, all within the acceptable range as described in the literature.

4.0 RESULTS

4.1 Results of Regression Analysis

The dependent variable of model is women entrepreneurship development and loan from friend/relative, daily contribution,

rotational saving and corporative societies as the proxies of independent variable (informal financing services). The result of the regression for model is presented in the table below:

Table 1: Reliability Coefficients

No	Variables	Items	Cronbach's Alpha
1	Loan from a Friend/Relative	5	0.870
2	Adashe (Daily Contribution)	5	0.887
3	Rotational Saving	5	0.908
4	Corporative Societies	6	0.936
5	Women Entrepreneurship Development	9	0.929

Source: Survey 2023

The validity result of the PPMC score of the responses shows that the item questionnaire significantly correlated with the total score, which indicates that the items are valid. On the other hand all the variables obtained the required Cronbach Alpha's

coefficient values. Therefore, this indicates that the instrument used is reliable as Cronbach alpha values are all greater than 0.7 minimum benchmarks for examining the reliability.

Table 2: Model Summary

Model	R	R square	Adjusted R square	Std. Error of the Estimate
1	.428 ^a	.183	.168	.46872

a. Predictors: (Constant), Loan from Friends\Relative (LFR), Daily Contribution (DC), Rotational Savings (RS), Corporative Societies (CS)

Source: from the field study 2023

Findings from the regression analysis result women entrepreneurship development in Katsina State, Nigeria as depicted in the above table 2, depicts that from the model, the R² which is often referred to as the coefficient of determination of the variables was 0.183. The R-Squared which is also a measure of the overall fitness of the model indicates that the model is capable of explaining about 18.3% of the variability of women entrepreneurship development. This means that the model explains about 18.3% of the systematic variation in the dependent variable. That is, about 81.7% of the variations in women entrepreneurship development in Katsina State, Nigeria are

accounted for by other factors not captured by the model. This result is complimented by the adjusted R² (adjusted R-squared) of about 16.8%, which is in essence the proportion of total variance that is explained by the model. Similarly, findings from the Fishers ratio (i.e. the F-Statistics which is prove of the validity of the estimated model) as reflected in table, presents a p-value that is less than 0.05 (p-value < 0.05); this invariably suggests clearly that simultaneously the explanatory variable (i.e. loan from friend/relative, daily contribution, rotational saving and corporative societies) is significantly associated with the dependent variable (women entrepreneurship development).

Table 3: ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	10.217	4	2.554	11.627	.000 ^b
Residual	45.477	207	.220		
Total	55.695	211			

a. Dependent Variable: WED

b. Predictors: (Constant), LFR, DC, RS, CS

Source: from the field study 2023

The study conducted ANOVA to test determine whether the model works. As shown in above table 3, the F value was 11.627 at significance level of 0.000. Since the significance level (0.000) was less than the alpha level 0.05, it implies that the

independent variables (i.e. loan from friend/relative, daily contribution, rotational saving and corporative societies) contributed significantly to variations in the dependent variable (women entrepreneurship development).

Table 4: Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	Comment
	B	Std. Error				
(Constant)	.981	.429	-	2.286	.023	
LFR	.111	.103	.089	1.077	.283	Supported
DC	.123	.039	.057	3.186	.002	Not Supported
RS	.025	.057	.031	0.447	.655	Supported
CS	.390	.102	.318	3.812	.000	Not Supported

a. Dependent Variable: WE

Source: from the field study 2023

Above table 4 present the results of regression test applied to dependent variable (women entrepreneurship development) and proxies of independent variable (i.e. loan from friends/relatives, daily contribution, rotational saving and corporative societies). Loan from Friends\ Relatives (LFR) not supported, Daily Contribution (DC) supported, Rotational Savings (RS) not supported, Corporative Societies (CS) supported.

4.2 Test of Hypotheses

Firstly, the null hypothesis one is accepted, which states that there is no a significant relationship between loan from friends/relatives, and women entrepreneurship development in Katsina, Katsina state. Secondly, the null hypothesis two is rejected which states that there is no significant relationship between Adashe (daily contributions) and women entrepreneurship development in Katsina, Katsina state. Thirdly, the null hypothesis three is accepted, which states that there is no a significant relationship between rotational

saving, women entrepreneurship development in Katsina, Katsina state. Lastly, the null hypothesis one is rejected, which states that there is no a significant relationship between corporative society and women entrepreneurship development in Katsina, Katsina state.

4.3 Discussions of the findings

The first research question of the study is whether there is a significant relationship between loan from friend/relative and financing of women entrepreneurship development in Katsina state. The aim of the question is to assess whether loan from friend/relative can be a good predictor toward women entrepreneurship development in Katsina state, Nigerian. The multiple regressions results shows that among the four predicting variables, loan from friend/relative, was found not to predicts women entrepreneurship development with the β value 0.111, meaning that a unit increase in the loan from friend/relative while other variable remains constant will not lead to an increase women entrepreneurship development by 11.1% and vice versa. This

result shows that loan from friend/relative was not a predictor women entrepreneurship development in Katsina state, Nigerian. The outcome is consistent with the study of Nwangwu (2022). Also the result is not consistent with the study Aladejebi (2020); Roy et al (2017); Fidelis (2021).

The second research question of the study is whether there is a significant relationship between Adashe (daily contribution) women entrepreneurship development in Katsina state. The aim of the question is to assess whether Adashe (daily contribution) can be a good predictor toward women entrepreneurship development in Katsina state, Nigerian. The multiple regressions results shows that among the four predicting variables, Adashe (daily contribution), was found to predicts women entrepreneurship development with the β value 0.123, meaning that a unit increase in the Adashe (daily contribution) while other variable remains constant lead to an increase women entrepreneurship development by 12.3% and vice versa. This result shows that Adashe (daily contribution) was a good predictor entrepreneurship development in Katsina state, Nigerian. The outcome is consistent with the study of Onyenwaka and Fabiyi (2001); Zwingina et al (2017). Also the result is not consistent with the study Nwangwu (2022).

The third research question of the study is whether there is a significant relationship between rotational saving and women entrepreneurship development in Katsina state. The aim of the question is to assess whether rotational saving can be a good predictor toward financing of women entrepreneurship in Katsina state, Nigerian. The multiple regressions results shows that among the four predicting variables, rotational saving, was found not to predicts financing of women entrepreneurship with the β value 0.025, meaning that a unit increase in the rotational saving while other variable remains constant will not lead to an increase financing of women entrepreneurship by 2.5% and vice versa. This result shows that rotational saving was not a predictor of financing of women

entrepreneurship in Katsina state, Nigerian. The outcome is consistent with the study of Nwangwu (2022). Also the result is not consistent with the study Fidelis (2021); Onyenwaka and Fabiyi (2001); Zwingina et al (2017).

The fourth research question of the study is whether there is a significant relationship between corporative societies and women entrepreneurship development in Katsina state. The aim of the question is to assess whether corporative societies can be a good predictor toward financing of women entrepreneurship in Katsina state, Nigerian. The multiple regressions results shows that among the four predicting variables, corporative societies, was found to predicts financing of women entrepreneurship with the β value 0.390, meaning that a unit increase in the corporative societies while other variable remains constant lead to an increase financing of women entrepreneurship by 39% and vice versa. This result shows that corporative societies were a good predictor of financing of women entrepreneurship in Katsina state, Nigerian. The outcome is consistent with the study of Onyenwaka and Fabiyi (2001); Zwingina et al (2017); Okezie et al (2016). Also the result is not consistent with the study (Nwangwu, 2022).

5.0 CONCLUSION AND RECOMMENDATIONS

This study has provided a comprehensive understanding that informal finance services dimensions have and positive influences on women entrepreneurship development in Katsina state. The study concludes that corporative societies and Adashe (daily contribution) has a significant and positive influence on financing women entrepreneurship in Katsina state. Loan from friend/relative and rotational saving (Esusu) has no significant influence on the financing of women entrepreneurship in Katsina state. Therefore, women SMEs managers should sources their informal financing through corporative societies and daily contribution (Adashe) so as to provoke and recognize opportunities in order to produce unique

products in distinctive markets using unique strategies. Also, they should be propagated and encouraged as it seeks novel ways in creating value for the customers. Women entrepreneurs should continue to invest on those dimensions that yielded positive and significant influences toward the SMEs performance in Katsina state of Nigeria.

On the basis of the above findings and conclusions, the following recommendations can be forwarded.

- i. As loan from friend/relative reported no significance effect on financing women entrepreneurship in Katsina state, therefore it is recommended that the women SMEs managers needs to looks other effective informal sources of finance so as to supports new ideas, experimentations, and processes to create new services, products or advanced technological processes.
- ii. As daily contribution reported positive and significance effect on financing women entrepreneurial business in Katsina state, therefore it is recommended that the women SMEs managers needs to increase their daily contribution and used it as a retained earning so as to focus on their willingness to dominate competitors through a combination of proactive and aggressive moves.
- iii. As rotational saving reported no significance effect on financing women entrepreneurship, therefore it is recommended that the woman SMEs managers must be able to identifying and exploiting other informal finance opportunities so as to capture vacant market positions with sustainable profit potential.
- iv. As corporative societies reported positive and significance effect on financing women entrepreneurship in Katsina State, therefore it is recommended that the woman SMEs managers needs to be more focus on financing from corporate societies so as to stretching resources much further than competitors do, making use of the resources others are unable

to realize, using other people's resources to achieve one's own goals, combining more than one firm's resources to create higher value and using certain resources to obtain other resources and recycling.

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AN APPRAISAL OF THE CHALLENGES OF MUSLIM WOMEN'S PARTICIPATION IN SMALL SCALE BUSINESSES IN GOMBE, NIGERIA

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Abstract

Small scale businesses have been recognized as primary engine of economic growth in the society. A quite number of Muslim women in Gombe state have engaged themselves in various forms of small scale business due to socio- economic factors such as means of livelihood, poverty reduction and self- reliance. However, there are many challenges facing Muslim women in their operation in small scale businesses like: mixed gender, unveiling, inadequate capital to run the business, lack of favourable environment, lack of access to Islamic micro-finance credit facilities among others. Therefore this work aims to seek out the level of participation of Muslim women of Gombe in small scale business as assessing the challenges of their business operations from Islamic perspective. Explorative, descriptive and analytical methods of data collection were employed to discover the factors responsible for the involvement of Muslim women in small scale businesses in the study area. The findings of this study reveal that, there are a lot of interventions from government and non-governmental organisations that empower women in order to run small scale business in Gombe. Zakah and Waqf foundation Gombe also played a vital role in promoting small scale businesses among Muslim women in Gombe. Therefore, the study recommends Islamic banks and other financial institutions to provide credit facilities to small scale business owners in order to add to their capital. Finally, it concludes that Islam as a religion that allowed Muslim woman to engage in business activities in as much as it does not contradict the norms and values of Islam and did not prevent her from practicing her religious obligations.

Keywords: Small Scale Businesses, Muslim Women, Factors, Challenges

Introduction

Islam is a complete way of life; it is not only concerned with the spiritual upliftment of human beings, it is also concerned with their political, social and economic well-being. Islam guides its followers in financial and economic matters and provides man with the basic concepts of life on the foundation of which economy is built. Islam gives due importance to trade and business, but does not consider it to be the main concern of human's life. There are evidences in the Qur'an which point to the importance of gaining wealth through entrepreneurship, Allah (*Subhanahu wa Ta'ala*) says in the Qur'an:

And we have certainly established you upon the earth and made for you therein ways of livelihood. Little are you grateful" (Al-A'raf:10)

According to the hadith: It was narrated from Aisha (*Radiyahallahu anha*) that the Messenger of Allah (Sallahu Alaihi wa sallam) said:

The best (most pure food) a man consumes is that which he has earned for himself (and his child's wealth) is part of his earnings. (Muhammad, 2007).

Based on the above Qur'anic verse and hadith, Islam encourages Muslims to remain always in search of bounties of Allah; it accords business and entrepreneurship a place of high esteem. Islam also provides a framework for mankind as they can undertake a number of actions to survive. These range from the buying and selling of goods, ownership of property, investments, agriculture, importing and exporting among

others. One of the entrepreneurial endeavors that have much reward from Allah is farming and animal husbandry. Through agricultural farming, food items, medicines and raw materials are produced and value added to the products. However, there are some restrictions attached to it. A Muslim woman who engages in any kind of economic activity should not do so contrary to the *Shariáh* norms. Therefore Muslim women who engage in small scale business should be different from other women in their motives and goals. Muslim women entrepreneurs must have good faith and belief in Allah the Almighty. They should also be able to manage their business successfully and observe modesty according to the teachings of the Qurán and *Sunnah*. Based on the above background this paper is going to assess the level of engagement of Muslim women of Gombe in small scale business, factors that led to their involvement, prospects and challenges facing the operation of their business from Islamic perspective.

1.1 Meaning of Small Scale Business

The definition of small scale business is amorphous and defies a universal meaning, academics, institutions and practitioners. Its definition varies historically, by country and by industry; it has been relative and dynamic and depends, to a large degree, on the level of development of a country. Generally, small scale business has fewer employees and relatively low volume of sales. Individuals also defined small scales according to their understanding; the definition of small scale business has varied overtime as the country advances in its pursuit of economic development. Small scale business is defined as form of business having total investment of between one hundred thousand naira to two million naira, excluding land but including working capital (Peter, 2013).

1.2 Examples of Small Scale Business

Examples of small scale businesses include: shops where items like accessories, bags, cloths, and electronics are sold. There is also bakery and catering services such as selling frying *masa*, bean cakes, snacks or

chocolate making e. t. c. There is also daycare center where women who are trained as *Nannies* while parents who are working leave their kids with the *Nannies* to entertain and take care of them. There is also making accessories such as hand necklace, bracelets, earrings, rings and other types of fashionable accessories. Farming is also a small scale business, it can supply natural product to bakeries, shops, cafes and restaurant. (Peter, 2013)

1.3 Advantages of Small Scale Business.

There are many advantages of small scale business among which are:

- a) It serves as a primary engine of economic growth and wealth creation in any economy.
- b) It improves the standard of living, which bring substantial local capital formation and achieving high level of productivity and capacity and equitable sustainable diversification.
- c) It helps in the development of economy, reduction of poverty, increase in employment, output and innovation in technology and uplifting in social status. (Smitri)

1.4 Disadvantage of Small Scale Business

The disadvantages of small scale business are as follows:

- a) The cost of production per-unit increases because there is high cost of labor, a very little scope for division of labor and lesser use of machinery.
- b) Difficulty in getting loans, there is problem of inadequate capitals, therefore funds are not available and if they are, they have to pay high rates of interest.
- c) Difficulty to face economic crises due to the limited resources and financial weakness, the small scale producers cannot face economic crises; some of them do not have the capacity to bear losses for long. In fact during small economic crises, many small factories are closed down.

2.1 Factors Responsible for the Participation of Muslim Women in Small Scale Business in Gombe State

The following are considered to be the reasons that made some Muslim women to embark in Small Scale Businesses in Gombe state:

2.1.1 Poverty

The economic condition of some of the Muslim women in the area of study compelled them to engage in small scale businesses. It is evident that most of the families in Gombe are polygamous with a lot of children to cater for while the income of the husband is too meager. Maryam known as *Adda mai Danwake* who is a famous business woman in *Dawaki* quarters revealed that many women are faced with financial challenges due to the inability of their husband to fulfill their social responsibilities such as lack of sufficient food, payment of children's school fees, medical bills and other basic needs..

2.1.2 Widowhood

This factor is one of the devastating factors that led some of the Muslim women of Gombe to establish a small scale business to cater for the family needs. Their lives become endangered simply because they lost their husbands and mostly it is difficult to get someone from the husband's family who is willing to take care of their children responsibilities whether they have the financial means or not

Aisha known as *Hajiya Wada* described her situation after the death of her husband who left behind six children, she said: after the death of her husband his relatives shared the legacies, what is left for them sustained them for a month only, from that period they began to live in abject poverty therefore she decided to initiate a business and sold all her electronics in order to have a starting capital, she is presently a dealer in all second hand items including furniture, electronics, clothes e. t. c with Allah's endless blessings two of her sons have successfully finished their secondary

education and one is presently in the university while three of her daughters are married.

2.1.3 Divorce

Divorce is also another factor of consideration when discussing the reasons for Muslim women's involvement in small scale business in Gombe state. Uwani who is also a victim of divorce from *Funakaye* local government area mentioned her reason for selling *Masa* in the street as follows: "My husband divorced me with four children and ask me to go along with them when I took them with me, my father also refused to accept them because he is incapable of taking all our responsibilities, when I decided to take them back to their father, I received the bad news that he was accused of arm robbery and was jailed in prison so i decided to sell all my properties and start a business in order to continue paying my children's school fees and provide them with basic needs."

2.1.4 Unemployment

Unemployment has become a popular national problem which weakens the economic status of the country, *Magajiya mai masa*, who is a famous business woman in *Dawaki*, Gombe narrates her business story that : she spent almost forty years selling *Masa* in her house ,she fries one bag of rice daily and employed about five people to assist her, about ten children carries it to motor parks, markets, streets, hospital gates, schools e. t. c. for sell and pay each of them wages which they usually take it to their parents to save for them and with that three among the hawkers are able to get married with that money .

2.1.5 Delayed Marriage

In an interview with *Zainab Dawaki*, who expressed her situation thus: She was brought up from a poor family; she is more than thirty years without a suitor while her parents are very old and weak. She happened to be the first child in the family. She said she had a lot of needs which they cannot be catered for. She wanted to wear expensive

clothes shoes and bags, in order to avoid unlawful means she decided to enter into partnership business which her maternal aunt in a form of *Mudarabah*, her Aunt provided the capital to trade with, she uses her time, energy, initiative and skills to do the business. With the profits they used to share she assists her parents in running the affairs of the family.

2.1.6 Materialism

Materialism means a tendency to consider material possessions and physical comfort as more important than spiritual values. Today, many Muslim women are so materialistic and are not contented with what their husbands provide them with. In an interaction with one of the business women in Tudun wada, she revealed that: she is running a business neither because of poverty, divorce nor widowhood but because of her high taste to wear expensive clothes, shoes, earrings during wedding and naming ceremonies and give large amount of contribution to avoid been downgraded by her relatives and friends

2.1.7 Competition

Women usually like competition among themselves most especially when they are more than one in the sight of their husband, each wanted to feel above the other. In the case where one of the wife is working while the other is not, she will find a way to earn something so that she can compete well with the co- wife, most especially in terms of dressing, cooking or possession of worldly materials for example Jamila, from Nafada local government area said: She entered into business in order to compete with her co-wife because she cannot bear the difficult situation she encountered with her husband as a result of her inability to assist him financially, Her co wife who is a nurse is considered to be superior in the sight of their husband, she is the chief- controller of the house, because she normally assist him with her salary therefore this motivated her to start a business, indeed this have reduced the level of pressure and depression in her. Presently

her husband allows her to make decision and gain control over the family matters

2.1.8 Desire to Become Independent

Mariya, who is always proud of her business, stated that: She cannot wait for her husband to provide her with basic needs so she has to run a business, sometimes if she demands something from him he used to tell her that other women have initiated a business and earn money, why can't she do so to solve her basic problems, and this compelled her to start selling shoes, bags and bed sheets the venture becomes fruitful thus led her to purchase of land and other assets.

2.9 Family Tradition

Historically, some of the families in Gombe state are business owners; they inherit certain types of business from their parents. Therefore they considered their business as a family occupation. For instance, Rashida who inherited the business of her mother who spent more than forty years, selling beans cake and pop-pop (*Chinchin*) in her house, when she was divorced by her husband while her mother is very weak to continue with the business, she decided to continue with it and with the business she is able to tackle many of their financial problems; despite the fact that her father is still alive .In addition, two of her sisters were presently conducting the same type of business in their various homes.

3.1 Challenges Facing Muslim Women in Small Scale Business in Gombe State

There are many challenges affecting the success of operating small scale business among Muslim women in Gombe state among which are:

3.1.1 Inadequate capital to run a Business

In the same regard, many of the Muslim women in the study area expressed their difficulty in accessing funds to expand their business effectively. They mostly rely on their parents, husband and relatives for support and in a situation where those traditional sources of funds becomes inaccessible the business may stop, as in the case of a widows who was interviewed on the

constraints affecting her business. Fatima, who is an indigent of Dukku L.G.A, expressed her situation in a very pathetic manner that: She started her business with one thousand naira as capital. She sells *pap* and *akara* at the front of her house every day, she is a widow for more than three years now, her parents are all dead, and her brother is the only person taking the responsibility of her siblings despite the fact that he is not salary earner but he manages a business. This made her establish her business to take care of her three children and herself. Whenever the capital became low, the business also became affected and she has never benefit from any government intervention.

3.1.2 Lack of Access to Islamic Micro-Finance Credit Facilities

Lack of established Islamic micro finance banks in Gombe state resulted to so many Muslim women collecting loans from conventional micro finance banks for the smooth running of their business. Since microfinance means the provision of financial service to the poor and low income earners to engage in productive activities and grow their business. The religion of Islam encouraged Muslims to be kind to one another, generous, sympathetic and respectful in their dealings. Muslims can help their brothers by offering them financial assistance to undertake any lawful business activity to become self-reliant and useful to themselves and the society.

Although research has shown that most women entrepreneurs in Gombe still depend on themselves and their spouse for initial capital outlay. They borrowed loans from commercial banks at interest rate especially conventional micro finance institutions who are mainly saddled with lending credit facilities to small scale business owners. The interest rate is too high and discouraging which is forbidden in Islam. Therefore funding has been one of the most difficult challenge facing Muslim women entrepreneurs in the study area.

3.1.3 Mixing with opposite sex

Many Muslim women who own and operate small scale businesses in Gombe are

experiencing lack of access to market. Many husbands did not allow their wives to go to the market for trade. Their reason is that Islam forbade mixing of men and women (*Ikhtilaf*) in public or hidden places unless with immediate close relatives (*Mahram*). It is only allowed in certain gatherings like schools and hospital which are considered to be necessity as long as there is no obscenity, immodesty or secret meetings in order to avoid *fitna* (temptation or trial). This implies that they must adhere to the rules of hijab (Kawtari, 2014). This is in accordance to the verse of the Quran that says:

And tell the believing men to lower their gaze and protect their private parts. That is purer for them; verily Allah is all aware of what they do. And tell the believing women to lower their gaze and protect their private parts and not to show off their adornment except that which is apparent and to draw their veils all over their Juyub and not to reveal their adornment except to their husbands fathers or their sons or their sisters sons or their women or their right hand possessions or the Tab'in among men who do not have desire or children who are not aware of the nakedness of women ... (An-nur 30 – 31)

In line with the teachings of the above verse, women can hardly go to the market and sale products without having free interaction with the opposite sex.

3.1.4 Lack of support from Spouse, Parents and Relatives

In an interaction with some of the Muslim women who engaged in small scale business in the study area, they mentioned the traditional sources of funds, which are mostly gotten from their spouse, parents and relatives as their sources. However, there are those who complained about lack of support from their spouse, parents as well as relatives. This therefore remained impediments to the

successful operation of their business. Sometimes some of the married women give more priority to business more than their primary roles as wives and mothers. They find it difficult to balance between the business and the domestic responsibilities and spent much of their time in generating income and even if the husband has financial crisis, the wife will not assist him with her money due to the impression that if you start to assist your husband financially, he will place all his responsibilities and burden of the house upon you which is happening in some families. And if a woman is unable to discharge her role properly as a wife, the husband will begin to consider her business irrelevant and that to the marriage therefore he may disallow her to continue with the business.

3.1.5 Lack of Access to Networking and Exchanging of Goods

One of the constraints affecting the success of many Muslim women in the rural parts of Gombe state is their lack of access to modern equipment and appropriate technology compared to women in the urban areas who have access to online business and are able to learn new technicalities and modalities for the successful operation of their business.

4.1 Role of Gombe State Government in Enhancing Small Scale Business among Muslim Women of Gombe

A lot of efforts were made by previous governments to promote the economic status and roles of women in order to alleviate poverty in the state. One of the economic empowerment programme that touches the lives of many vulnerable Muslim women is that of the former first lady of Gombe state Hajiya Adama Ibrahim Hassan Dankwombo through a non-governmental organization known as Hajiya Adama Women Empowerment Programme (HAWEP), has taken a lead in the emancipation, liberation and empowerment of the entire women folk in Gombe state. The projects also aimed at empowering women economically to enable them exploit their full potentials and live a more productive life.

Under HAWEP's women empowerment and skills acquisition, money was released to women to promote small scale business; others were trained in various skills such as tailoring, knitting, soap making, hair dressing and modern fish farming. Since inception of the programme over three thousand, six hundred and twenty six 3,626 women have been trained in small scale sustainable micro enterprise. Beneficiaries were also given fifty thousand naira (₦50,000) as take up capital to enable them commence the business with effective monitoring mechanism put in place (Affairs, 2019).

3.2 The Role of Federation of Muslim Women Association in Nigeria (FOMWAN) in Enhancing Small Scale Businesses among Muslim Women of Gombe

It is a non-profit making and non-governmental organization. It is a civil society umbrella body for Muslim women association in Nigeria which was established and registered with the corporate affairs commission in 1983 and 1984: The idea to form an all-embracing national Muslim women organization was mooted by some committed Muslim women in 1985, FOMWAN was formally inaugurated in Minna, Niger state at the Islam Education Trust with delegates from Ilorin, Lagos, Minna, Kaduna, Kano, Jos and Zaria (Gafar, 2017).

FOMWAN envisions a world where women are totally empowered to be role models in making positive impact to the society. Among their mission is to improve socio-economic status of the populace especially women youths and encouraged women to live in accordance with the teachings of the Qurán and Sunnah. It has branches in all the 36 states of Nigeria, Gombe state **FOMWAN** since its inception has played an active role in all the eleven local governments, they established twenty Islamiyya Schools and teach women their religion and other skills acquisition training are offered in those schools. In an interview with FOMWAN Auditor Akko L.G.A,

Aishatu Jibir, mentioned that the organization empowered 45 Muslim women in 2015, where they are trained in soap making, beads making, tailoring knitting and assist them with certain amount of capital to generate income. Between 2016- 2019, she said more than 200 Muslim women were trained in other skills such as: catering service and local spices like locust bean cake, soya beans cake, groundnut cake among others.

In Balanga local government, during an interview with Hajiya Hauwa Gadara the present grand Amira of FOMWAN Balanga, revealed the situation of the economic empowerment of Muslim women in the area, she said! FOMWAN in Balanga was established since 1990 with the aim of teaching Muslim women about their religion and acquire skills to be able to defend on themselves, sometimes they contribute some amount of money and distribute to the less privileged among the members in order to promote their small scale business even though they have received several interventions from some of the Politicians like: sewing machines which they trained women and distributes to them.

3.3The Role of Zakah and Waqf foundation Gombe in the Economic Empowerment of Muslim Women of Gombe

Zakah and waqf foundation Gombe is a non-governmental, not for profit, non-political organization established in Gombe state in 2017, July to serve as an institution that specialize in mobilizing resources from Zakah payers, philanthropists, and corporate organizations that are willing to channel their obligatory and voluntary charities for proper channeling to the poor and the socio-economically misfortune. One of the objectives of the foundation is to provide general empowerment scheme for the poor.

Maryam stated in an interview that the foundation was able to embark on a number of programs and projects that have bearing on the welfare and general uplift of the poor, needy and widows. Under it there is a women empowerment scheme which consists of five committee members in charge of distributing

ten thousand naira to widows, divorcees and needy women as capital for successful operation of small scale business. From 2017 to 2019, fifty Muslim women were empowered. The policy of the program is that each of the beneficiary is given 10 thousand naira in order to add to their capital, but with the agreement that after every two weeks, each will divide her profit into three, then 1/3 of it will be saved under the custody of the women empowerment committee, when it reaches thirty thousand, (#30,000), the money will be returned back to her to expand her business or initiate another one. This will serve as a form Islamic microfinance but the money is not considered as loan rather as part of *Waqf*. The fifty beneficiaries were grouped according to different batches depending on the date each start to benefit from the *Zakkah* and *Waqf* foundation funds (Maryam, 2019).

Conclusion

Although lot of challenges have been affecting the successful operation of the businesses of many of the Muslim women in Gombe State like: mixed gender, unveiling, inadequate finance, lack of access to Islamic micro finance credit facilities, lack of initiative, lack of poor management and favorable environment to run a business and lack of access to network. Even though, there are interventions from Gombe state government e. g Hajiya Adama Women Empowerment Program,(which stopped operation in 2016). While the non-governmental agencies introduced to empower women in the study area, hence there is need for the establishment of Islamic micro credit finance in order to apply Islamic modes of finance for the empowerment of Muslim women in Gombe State.

Recommendations

1. It is the responsibility of the wealthy Muslims to empower economically disadvantaged members of the society most especially, orphans, widows and divorcees who desire to become self -dependent through organizing guidance and counseling on skills acquisitions, offering them training, sponsoring them and providing them with

tools to start up business including training in personal financial management

2. There is a strong need for the Islamic bank like Jaiz in Gombe to introduce micro finance or micro credit finance facilities to their customers so that both urban and rural poor Muslim women can have access to some of their credit facilities to boost their small scale businesses

3. It is the role of parents, husbands and relatives to allow women to acquire sound education in all spheres of life to represent the Ummah in relevant fields or acquisition of relevant skills to economically support, self, family and the society.

4. There is a strong need for the Islamic bank like Jaiz in Gombe to introduce micro finance or micro credit finance facilities to their customers so that both urban and rural poor Muslim women can have access to some of their credit facilities to boost their small scale businesses

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List of Informants

Name	Age	Occupation	Address	Place of Interview	Date	Time
Aisha Abdurrahman(Hajiya wada)	50yr	Business woman	Jekadafari Gombe	Jekadafari, Gidan Almajira	18 th May 2019	10:00am-12:00pm
Aishatu Jibir	45yr	Auditor FOMWAN Akko LGA Gombe	Behind Orphanage house Tumfure, Gombe	GDSS Doma QTRS Gombe	17 th July, 2019	4:00pm-5:00pm
Hajara Ali	45yrs	Business woman	Mai Turare house, Bolari Quarters, Gombe	Mai Turare house, Bolari Quarters, Gombe	25 th May, 2019	10:00am-11:00am
Hajiya Hari Mai chin chin	40yrs	Business woman	Jekadafari Quarters, Gombe	Yaya Almajira residence, Jekadafari, Gombe	11 th June, 2019	11:00am-12:00pm
Hajiya Hauwa Muhammad	62yrs	Former Amira FOMWAN, Balanga L.G.A, Gombe	Hajiya Hauwa Gadara residence behind L.G .A secretariat Talasse, Balanga	Hajiya Hauwa Gadara residence behind L.G .A secretariat Talasse, Balanga	14 th May 2019	9:00am-10:00am
Hannatu James	43yrs	Trainer Um-al-Barakat Multi Business Limited	Sabon Layi Gombe	Ministry of Women Affairs Gombe	13 th June 2019	10:00am-10:30am
Hauwa'u A. Adamu (Magajiya mai Masa)	70yrs	Business woman	Hajiya Magajiya residence, Jankai, Dawaki Quarters Gombe	Hajiya Magajiya residence, Dawaki, Gombe	19 th May 2019	2:00pm-3:00pm
Maimuna Saleh(Iya Mai Taliya)	55yrs	Business woman	Jekadafari behind Bello Doma Masjid, Gombe	Jekadafari behind Bello Doma Masjid, Gombe	21 st July, 2019	10:00am-10:30am
Malam Buba Yahaya	65yrs	Small scale farmer	Mal Isa Residence Opposite 2 nd Transformer Nasarawo ,Gombe	Mal Isa Residence Opposite 2 nd Transformer Nasarawo ,Gombe	15 th May 2019	4:00pm-5:00pm
Maryam Abubakar (Adda mai Dan wake)	40yrs	Food vendor	Sarkin Kasuwa House Behind Old Market, Gombe	Sarkin Kasuwa House Behind Old Market, Gombe	10 th May, 2019	10:00am-11:00am
Maryam Aliyu	48yrs	Food Vendor/Catering services	Jekadafari behind Gombe Line Station	Dawaki Quarters Gombe	17 th October, 2019	3:00pm-4:00pm
Rukayyatu Lamuwa (Anty Yanah)	48yrs	Civil servant/Business woman	Abacha road/Jekadafari, Gombe	Jalo Waziri Primary School, Gombe	23 rd May, 2019	10:00am-11:00am
Sadiya Ahmad	37yrs	Business woman	Opposite Arabic Teachers college kasuwan-mata Gombe	Opposite Arabic Teachers college kasuwan-mata Gombe	14 th June, 2019	9: 00am - 10:30am
Zainab Aliyu	38yrs	Civil servant/ Manager/Trainer Baitul-Arooz Multipurpose Company, Gombe	G.R.A Gombe	Smart Academy, Tudun wadan Pantami, Gombe	20 th June 2019	12:00pm-1:00pm
Zainab Muhammad Abubakar	29yrs	Business woman	Opposite Alhaji Ahmadu residence, Dawaki, behind Town Maternity Gombe	Opposite Alhaji Ahmadu residence Dawaki, behind Town Maternity Gombe	16 th May 2019	11:00am-12:00am

MODERATING EFFECT OF RISK MANAGEMENT COMMITTEE ON CORPORATE GOVERNANCE MECHANISMS AND FINANCIAL REPORTING QUALITY OF LISTED NON-FINANCIAL FIRMS IN NIGERIA

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Abstract

This study examined the moderating effect of risk management committee on the relationship between corporate governance mechanisms and financial reporting quality among listed non-financial firms in Nigeria. Board characteristics were explained using board gender diversity and board financial expertise. The study employed ex post facto research design. The population of the study consisted of 116 non-financial companies quoted on the Nigerian Exchange Group (NXG) as at 31st December, 2022. The sample size of forty-nine (49) companies was determined using the Taro Yamane sampling size technique. Data collected for this study were solely from secondary sources. Data were extracted from the Published Audited Accounts and the Annual Reports of the listed non-financial firms in Nigeria. The study adopted the use of multiple regression to analyse the data. The result of the fixed effect regression as suggested by the Hausman specification test revealed that risk management committee has significant moderating effect on the relationship between board gender diversity, board financial expertise and financial reporting quality among listed non-financial firms in Nigeria. Hence, from the findings, the study concluded that risk management committee is indeed a viable governance strategy aimed at improving the financial reporting quality through the scrutiny of the assessment and disclosure of risks inherent in the company. From the findings and conclusion, the study recommended that non-financial companies should strengthen their corporate governance system through establishment of a risk management committee to dissect the vulnerable areas that might threaten the going concern of the companies.

Keywords: Board characteristics, Corporate governance, Financial reporting quality, Risk management committee

Introduction

Financial reporting is a requirement for firms by the International Financial Reporting Standards (IFRS) and many regulatory agencies across the globe. It is a means by which enterprise conveys information regarding its financial performances and conditions to its external users and other stakeholders. The objective of financial reporting as stipulated by IFRS is to inform both current and potential investors to make rational investment decisions and assess the expected firm cash flows. It is a known fact that “better” corporate governance may lead to improved financial reporting, however there is a divergent agreement as to what

constitutes “financial reporting quality.” For example, the Sarbanes-Oxley (2002) and Blue-Ribbon Committee (BRC, 1999) requires auditors to discuss the quality of the financial reporting methods and not to rely on their acceptability alone, however the view on the quality of financial reporting still remains an unclear concept. Financial reporting quality can simply be defined as “the precision with which financial reporting conveys information about the firm’s operations, in particular its expected cash flows that inform equity investors” (Biddle et al., 2009).

Corporate governance (CG) and financial reporting are very much interwoven. A significant number of empirical studies has

provided evidence that the quality of financial reporting system to a large extent depends on corporate governance mechanisms such as audit committee characteristics and board characteristics (Wati et al., 2020; Vafeas, 2005; Farber, 2005; Abbott, Parker & Peters, 2004). Hence, financial reporting quality is regarded as a vital part of corporate governance mechanisms (Kulustayeva et al., 2020; Wati et al., 2020; Tjahjadi et al., 2020; Chanatup et al., 2020; Melis, 2005; Melisa & Carta, 2010). In the light of current macroeconomic challenges, corporate governance is seen as a significant driver of financial reporting quality in firms (Okpamen & Ogbeide, 2020). This is because the cause of collapse of most of the gigantic companies were attributed to poor corporate governance. For example, the spread of financial and accounting scandal that resulted to the sudden collapse of significant number of international companies (which had indicated positive financial report) such Parmalat Company in Europe in 2003, Chuo Aoyama in Asia, JCI and Randgold in South Africa. The trend was replicated across the globe as evidenced by WorldCom and Enron in U.S.A (Sorensen & Miller, 2017) and Cadbury Company in Nigeria (Muriuki et al., 2018).

Problem Statement

The relationship between corporate governance (CG) mechanisms and financial reporting quality is still inconclusive. Likewise, the inconclusiveness of the results of previous studies in this area could be attributed to the existence of different context and environment in which CG is implemented. Also, prior research has neglected the indispensable role of risk management committee as one of the essential mechanisms for Good Corporate Governance (GCG) mechanisms especially with regard to this period of post covid-19 era. And according to Yatim (2010) "poor risk management is a symptom of poor corporate governance practices".

Over the years, the reports from Enron, WorldCom and other concerned financial institutions have shown that there have been substantial financial information

irregularities in the way companies have reported their annual reports. Nowadays, many non-financial institutions and financial institutions have either collapsed or is in the verge of collapsing and in need of government rescue in spite of the reported unqualified audit reports. These developments have ushered in the need to focus attention more on the quality of financial statements report and thereby encouraging researchers and regulators to seek for ways to improve the quality of the financial reporting process and its integrity. This can be achieved by instituting appropriate mix of Board of Directors (BOD) especially in terms of their attributes such as gender diversity, financial expertise, size and independence.

More so, the failure of significant number of both financial and non-financial institutions to fully integrate risk management practices into the corporate governance (CG) led to colossal failures at a global level (Elamer et al., 2018; Berger et al., 2016; Dermine, 2013). The performance of these institutions and their accountability as well as their risk-taking behaviour have come under increased scrutiny (Berger et al., 2016; Hines & Peters, 2015; BCBS, 2015; Aebi et al., 2012).

Furthermore, this study is motivated by several major considerations and differs from other previous studies in many ways. Firstly, significant number of studies have been carried out on the link between corporate governance mechanisms (such as board characteristics) and financial reporting quality but have produced mixed results (Bensaid et al., 2021; Ogbeide et al., 2021; Al-Khonain & Al-Adeem, 2020; Aifuwa & Embele 2019; Albawwat & Al harasees, 2019; Umobong & Ibanichuka, 2017; Moses 2019; Onuorah & Imene, 2016; Kamolsakulchai, 2015; Oba, 2014; Bala & Ibrahim, 2014; Myring & Shortridge, 2010, Ong & Wan, 2008; Mansi & Reeb, 2004; Singh & Davidson, 2003; Mak & Li 2001). More specifically, previous studies on the relationship between corporate governance and financial reporting quality in Nigeria focused more on financial institutions (banks)

that constitutes about 20% of the total listed financial firms. Therefore, concentrating on non-financial listed firms would provide a more comprehensive insight and robust explanation.

Additionally, the study introduced a moderator because of the inconsistency and mixed results between corporate governance and financial reporting quality. Hence, the essence of introducing the moderator in this study is to find out whether RMC has the capacity to strengthen or weaken the oversight function of the AC, thereby improve the quality of financial report. Also, there is barely little or no study that has studied the effect of risk management committee in moderating the relationship between Board characteristics and financial reporting quality especially within the context of Nigeria. Additionally, this study is informed as a result of several calls for future study (Ahmed 2019; Ishak and Mohamad Nor 2017; Dabari and Saidin 2014; Hassan et al. 2012; Liew et al. 2012; Subramaniam and Carey 2011; Subramaniam et al., 2009; Yatim 2009; and Yatim 2010. Lastly, the motivation for this study is that RMCs are found to be generally combined or integrated with audit committees (KPMG, 2005). This is because a combined RMC is found to be less efficient compared to the one with separate committee, as such future studies needs more empirical evidence to validate this assumption.

Objectives of the Study

The main objective of this study is to examine the moderating effect of risk management committee on the relationship between corporate governance mechanisms and financial reporting quality among listed non-financial firms in Nigeria. Thus, the specific objectives are to;

- i. examine the effect of board characteristics (gender diversity and financial expertise) on financial reporting quality of listed non-financial firms in Nigeria.
- ii. examine the moderating effect of risk management committee on the relationship between board characteristics and financial reporting

quality of listed non-financial firms in Nigeria.

Statement of the Hypotheses

The following hypotheses are formulated in order to achieve the above stated objectives

HO₁: Board characteristics have no significant effect on financial reporting quality of listed non-financial firms in Nigeria.

HO₂: Risk management committee has no significant moderating effect on the relationship between board characteristics and financial reporting quality of listed non-financial firms in Nigeria.

Literature Review

This section discusses the relevant and related literature to the study. The main items discussed in this section include: financial reporting quality, corporate governance mechanisms and risk management committee, review of empirical studies and lastly theoretical framework underpinning the study.

Financial Reporting Quality

Financial reporting quality refers to the extent that accounting information presented to users are free from misstatements and other unethical accounting and managerial practices. In addition, quality financial reports give both shareholders and other stakeholders the opportunity of understanding the financial statements thereby reducing information asymmetry. Financial reporting quality can also be defined as the precision by which financial reporting transmits or conveys information about the operations of firms, particular as it relates to its expected cash flows that inform equity investor (Biddle et al., 2009).

Corporate Governance Mechanisms Board Characteristics

The phrase "board characteristics" involves two blended concepts; board and characteristics. The term board as stipulated in Section 334 (1) of the Companies and Allied Matters Act 2004 (as amended),

usually refers to the board of directors that is entrusted with the duty.

Gender Diversity (Female on Board)

There are significant streams of literature that discusses the way and manner in which male and female board member's characteristics should reflect on how the board selects their leadership style and decision making process (Duc & Thuy, 2013; Renee & Daniel, 2009; Smith et al., 2005).

Board Financial Expertise

Kirkpatrick (2009) highlighted that the role of board acting in the capacity as adviser to the CEO is essential so as to enhance the organization's value. Both the internal and external directors are required to use their experience and expertise in improving the quality of financial report.

Risk Management Committee

According to Hopkin (2013) risk refers to a collection of uncertain events that exerts a negative effect on firms. Therefore, managing risk is associated with attaining the best results in minimizing the risk that occurs in the organization (Hopkin, 2013). Thus, risk management is the attainment of results in line with what is anticipated, hence risk management is very vital for the organization to achieve its goals (Hopkin, 2013). Risk management committee (RMC) is a board sub-committee and the establishment of this committee has a direct relationship with the BOD. Similarly, Yatim (2009) emphasized that the focal point of establishing the RMC is to solely focus on proper and adequate management of risks.

Empirical Review

Board Characteristics and Financial Reporting Quality

Almaqtari et al. (2021) examined the impact of corporate governance mechanisms on financial reporting quality with regard to Indian Accounting Standards (Ind. AS) and Indian GAAP. The study selected a sample of 97 companies listed on the Bombay Stock Exchange. Corporate governance was measured using board effectiveness (board

expertise, size and independence), audit committee attributes (expertise, size and independence), foreign ownership, and audit quality. Descriptive statistics, correlation, and OLS regression were used to estimate the results. Their findings show that board characteristics have a significant effect on financial reporting quality.

Adebiyi (2017) conducted a study to find how board composition affects financial reporting quality of deposit money banks in Nigeria. The study used a sample of fifteen commercial banks spanning from 2005-2016 and the data was analyzed using ordinary least square (OLS) regression and panel data estimation technique. The study found that board composition has significant impact on financial reporting quality of deposit money banks in Nigeria, and the discretionary accrual (a proxy) for financial reporting quality turned out to be positively related to board independence and board size.

In contrast to the above studies, Phuong and Hung (2020) investigated the impact of the Board of Directors (BOD) on financial reporting quality (FRQ) in Vietnam listed companies. The study used FEM, REM and GLS regression models and data was collected at energy enterprises listed on the stock market in Vietnam ranging from 2010 to 2018 with 2162 observations. Findings show that all the selected BOD construct has a positive impact on FRQ except for the percentage of female BOD members which do not have impact on FRQ.

Similarly, Aifuwa and Embele (2019) investigated the 'impact of board characteristics on financial reporting quality of listed manufacturing firms. The descriptive and inferential statistics was utilized in summarizing the data and drew inference on the sampled population. The Generalized Linear Model Regression employed to test the hypotheses stated. The board expertise was statistically found to be significant and positively related to financial reporting quality, while board independence and board diversity was found to be insignificantly related to financial reporting quality. The study therefore, concluded that board

characteristics partially affect financial reporting quality.

Risk Management Committee and Financial Reporting Quality

Malik et al. (2021) examined whether the adoption of a Board risk committee (BRC) improves firm's access to capital by reducing financial constraints risk while utilizing a sample of 28,265 firm year observations from the U.S. listed firms for the period spanning from 2005 to 2017. Their findings show that the voluntary adoption of a BRC reduces financial constraints risk significantly. Their findings also revealed that BRC characteristics such as size, financial experts and female directors have negative relationship with financial constraints risk. More so, they find that voluntary adoption of a BRC is vital for listed firms especially for those who don't have an effective risk governance structure at the board level. However, their studies vary with the current study due to the fact that the current study will be conducted in a developing country with slight differences in some of the variables that will be considered and as such may produce different results due to contextual differences between the two countries.

Jia (2019) investigated the relationship between risk management committee (RMC) gender diversity and the likelihood of a firm's financial distress. Data were extracted from the annual reports of the top 300 Australian Stock Exchange (ASX) listed companies over the period of 2007 to 2014. In order to control for potential endogeneity, the relationship between RMCGD and the likelihood of a firm's financial distress was examined via the use of an instrumental variable approach (i.e. panel 2SLS regression). Findings revealed that RMCGD is related with a lower probability of financial distress, implying that women are considered to be better at monitoring and reduction of firms' excessive risk-taking behaviors, which invariably leads to a decrease in firms' financial distress risk. Essentially, the proportion of women that has

financial experience on RMC are found to be more effective in reducing the chances of financial distress than the proportion of male counterpart that has financial experience on RMC. However, the present studies will focus on the moderating effect of RMC on the relationship between CGM and FRQ of listed nonfinancial firms.

Ahmed (2019) investigated the "effect of risk management committee (RMC) characteristics (risk management committee size and risk management committee independence) and board financial expertise on the financial performance of quoted banks in Nigeria". The study utilized secondary data which was gleaned from the annual report of banks listed in the Nigerian exchange group for the period of 2013-2016 with 56 firm-year observations and was based on panel data approach. And the regression estimates were anchored on random effect and fixed effect models. Findings revealed that RMC size and RMC independence are insignificantly related with financial performance of ROA, ROE and Tobin's Q, suggesting an increase or decrease in RMC size has no effect on financial performance. While board financial expertise was found to be negatively related with ROA and ROE, suggesting that the more the financial expert in an organization the lesser the financial performance due to the risk that will be avoided. However, the present study tends to focus on the effect of RMC on FRQ of listed non-financial firms.

Bhuiyan et al. (2016) examined the association between the existence of a risk committee (RM) in a firm and financial reporting quality. They also examined whether having a risk committee moderates the effect of financial reporting quality on audit pricing. They used two different measures of risk committee existence to examine the impact on FRQ and audit pricing. Multivariate regression analysis is applied to data from Australian Stock Exchange listed companies during the years 2001 – 2013. The results show that the existence of a RM reduces discretionary accruals; this means financial reporting

quality improves when risk committees are in operation. The results also indicate that risk committee existence plays a moderating role to reduce audit fees when firms have higher discretionary accruals.

Agency Theory

There are many governance theories that have been used to explain corporate governance studies. However, this study employs the agency theory with the aim of explaining its suitability to the present study. In particular, this theory is considered due to its prominence in the recent times literatures and its suitability to support and explain better the relationship between the board, audit committee characteristics and financial reporting quality as well as risk management committee. The theory explains the principal-agent relationship and their behaviors. It also explains how BODs can act on behalf of the principal such that they can control and monitor the activities of the agents. Consequently, the agency theory is utilized in this study because it focusses more on providing advice, counselling and monitoring functions that helps in resolving principal-agent relationship problem as dominated by agency cost (Hillman & Dalziel, 2003; Eisenhardt, 1989), and corporate governance mechanisms can be used in this regard to reduce agency cost (Shleifer & Vishny, 1986; Fama & Jensen, 1983; Fama, 1980).

This initial sample size is supported by Yamane (1967) sample selection method (Guilford & Frucher, 1973) as stated below:

According to Yamane (1967), $n = N / [1 + (Ne^2)]$,

Where: "n" is the sample size,

"N" is the population,

"e" is the error limit (5% precision level was used for the purpose of this study)

Therefore, $n = 116 / [1 + 116 (0.05^2)]$

$n = 116/1.29$

$n = 90$

Adjusted Yamane (1967), $n_1 = n/1 + (n-1)/N$

Therefore, $n_1 = 90/1 + (90-1)/116$

$n_1 = 90/1.77$

$n_1 = 49$

Research Methodology

Research Design

The ex post facto research design was adopted in this study to examine the possible causes and effects of the variables of interest. Also, the choice of ex-post facto research design is based on the objective to be achieved in the study. In line with the objectives and hypotheses formulated the study used panel multiple regressions to determine the impact of independent variables on the dependent variable, since it is the most suitable techniques for determining the extent of impact of independent variables on dependent variable. STATA Statistical Package were used since it allows establishing the impact of the independent variables on the dependent variable as well as testing for robustness such as heteroscedasticity test, fixed and random effect test, Multicollinearity test.

Population, Sample and Sampling Technique

The population of the study consisted of 116 non-financial companies quoted on the Nigerian Stock Exchange (now Nigerian Exchange Group) as at 31st December, 2022.

The study employed stratified and simple random sampling techniques in selecting the sample of the study. The stratified sampling method was used because of the distinct nature of the study population. While simple random sampling gave each unit of the population an equal opportunity of inclusion in the sample.

Based on the above calculation. The sample size of 49 with error limit of 5% is considered appropriate for this study. The proposed samples from each sector of the study were determined through the use of proportional sampling technique as thus:

Table 1 Population and Sample Size of the Study

S/N	Sector	Population	Computation	Sample
1	Agriculture	5	$5/116*49$	2
2	Conglomerate	6	$6/116*49$	3
3	Consumer goods	23	$23/116*49$	10
4	Industrial goods	13	$13/116*49$	5
5	Healthcare	10	$10/116*49$	4
6	Technology	9	$9/116*49$	4
7	Real Estate and Construction	9	$9/116*49$	4
8	Oil and Gas	12	$12/116*49$	5
9	Services	25	$25/116*49$	10
10	Natural resources	4	$4/116*49$	2
Total		116		49

Source: Researcher's computation, 2023

Method of Data Collection

Data collected for this study were solely from secondary sources. Data were extracted from the Published Audited Accounts and Financial Statements and the Annual Reports of the listed non-financial firms in Nigeria from 2013-2022. The data were quantitative and panel in nature. Therefore, the panel dataset comprised of 490 firm years' observations which were subjected to different tests for analysis.

Technique of Data Analysis and Model Specification

This study used descriptive statistics to summarize the data, and to describe and understand the basic features of the data in the study. Also, correlation analysis was conducted to explain the relationship between the independent and the dependent variables and also the association among the all pairs of independent variables themselves. The Hausman (1978) test helps to determine the choice between the fixed or random effect models in conducting the regression by calculating the value of Probability chi-square

The summary of Hausman test is presented in Table 2

Table 2: Hausman Specification Test

Variable	Chi ²	Prob>Chi ²
Board Attributes	27.31	0.0012

Source: STATA, 2023

From table 2 the result of the Hausman Test reveals chi2 values of 27.31 for board with a corresponding probability of 0.0012 and 0.0027. The significant values presented by the model suggest that the fixed effect is more appropriate for interpretation.

Model Specification

This study applied the multiple regression analysis technique and the Fixed-Effect and Random-Effect models to test the various hypotheses. The preference for multiple regression analysis is that it allows

researchers to assess the strength of the relationship between the outcome (the dependent variable) and several predictor variables as well as the importance of each predictor variable to the relationship, often with the effect of other predictors statistically eliminated (Wooldridge, 2002). The Fixed-Effect and Random-Effect models allow the researchers to examine variations among cross-sectional units simultaneously with variations within individual units over time (Gaur & Gaur, 2006).

Hence, the model is specified thus;

$$FRQ_{it} = \beta_0 + \beta_1 BGD_{it} + \beta_2 BFE_{it} + \beta_3 RMC_{it} + \beta_4 BGD_{it} * RMC_{it} + \beta_5 BFE_{it} + e_{it}$$

..... (i)

Where: FRQ = Financial Reporting Quality; BGD = Board Gender Diversity; BFE = Board Financial Expertise; β_0 = Parameters estimated; e = an error term assumed to satisfy the standard OLS assumption.
 β_1 - β_9 = Partial derivatives or the gradient of the independent variable.

Descriptive Statistics

The table below shows the description of the properties of the variables ranging from the mean of each variable, minimum, maximum and standard deviation. Table 4 presents the details of the result.

Table 3: Descriptive Statistics

Variable	Obs	Mean	. dev.	Min	Max
frq	490	.1870754	.122498	-.812479	.504019
bgd	490	.0604807	.0706333	.00016	.571429
bfe	490	.1243055	.0885299	.012987	.62179
Std					
rmc	490	3.879592	.7290298	2	6
bdgrmc	490	.2351293	.2855663	.00064	2.5
bfermc	490	.4868714	.3682576	.038961	2.48716

Source: STATA 16 output, 2023

The descriptive statistics show a summary of data for all selected variables for the 49 listed non-financial companies in Nigeria within the time frame of 10 years. The result from table 4 shows that the average FRQ which is a measure of the extent of discretionary accruals is .1870 with a standard deviation of .1224. This figure indicates a low ratio of discretionary accruals. From the values of the minimum and maximum which stands at -.8124 and 5040 respectively is an indication of a low level of variability in the data.

Regarding the independent variables, BGD has a mean value of .0604 with standard deviation of .0706. This implies that BGD does deviates significantly across the sample firms. The minimum values of .0000 and maximum of .5714 also show significant variability in the data. The standard deviation is higher than the average mean value, which indicates that there is great difference in the number of female directors across companies in the non-financial sector.

In addition, BFE has an average mean value of .1243 and standard deviation of 0.0885. This indicates that on average 12% of the companies have directors with financial expertise and this result agrees with the value of the standard deviation which is close to mean. However, the minimum and maximum values stand at .0129 and .6217 signifying a high level of dispersion in board financial expertise of companies in the area covered by the study.

The study introduced a moderator variable and according to the descriptive statistics result in Table 4, show that on average companies have 3 risk management committee members with a standard

deviation of .7290. The minimum and maximum ranges between 2 and 6 respectively.

The descriptive statistics also show that the moderation of board gender diversity and risk management committee produced a mean of .2351 signifying that on average at least 24% of quality of financial reporting is improved when companies have risk management committee. The value of standard deviation (.2855) which is 29% and higher than the mean is an indication of variance in the data. This is confirmed by the value of minimum and maximum which stands at range of 0 and 2.5.

Also, the interaction between board financial expertise and risk management committee has a mean of .4868 and a standard deviation of .3682. This infers that on average 49% of companies financial reporting quality will be improved. The value of minimum and maximum which is .0389 and 2.4871 respectively.

Regression Result

This study tested the effect of selected board on financial reporting quality of quoted non-financial companies in Nigeria with risk management committee moderating the entire variables. Given this instance, regression model was stated in methodology aimed at achieving the specific objectives of the study. The model examined the moderating effect of risk management committee on the relationship between board characteristics (board gender diversity and board financial expertise) and financial reporting quality. The summary of the regression results for the models is presented below:

Table 4 Fixed Effect Regression Model

Fixed-effects (within) regression	Number of obs =	490
Group variable: id	Number of groups =	49
R-sq: within = 0.5616	Obs per group: min =	10
between = 0.6572	avg =	10.0
overall = 0.6023	max =	10
	F (9,432) =	298.86
corr(u_i, Xb) = 0.3884	Prob > F =	0.0000

frq	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
bgd	.634008	.2720286	6.01	0.000	1.099344	2.168672
bfe	.645998	.20644	12.82	0.000	2.240246	3.051749
rmc	.043198	.0032032	13.49	0.000	.0369022	.0494938
bdgrmc	-.1082261	.0185667	-5.83	0.000	-.1447185	-.0717337
bfermc	-.1456553	.0121943	-11.94	0.000	-.1696228	-.1216878
_cons	.0254297	.0208096	1.22	0.222	-.0154709	.0663303

Source: STATA 16, 2023

The regression results revealed an overall R² 0.6572. The R² is the multiple coefficients of determination that gives the proportion or percentage of the total variation in the dependent variable explained by the independent and moderator variables jointly. This signifies that board gender diversity and board financial expertise as well as the risk management committee jointly explain 66% variations in financial reporting quality of listed non-financial companies, while the remaining 33% of the total variation in financial reporting quality is caused by factors not explained by the model. Accordingly, the value of F-statistic is 298.86 with a corresponding p-value of 0.0000 which signify the fitness of the model. This serves as substantial evidence to conclude that the

board attributes selected are suitable can be used to explain changes in financial.

Correlation Matrix

The Pearson correlation analysis matrix shows the relationship between the explanatory and the explained variable and the relationship among all pairs of independent variables themselves. Generally, high correlation is expected between dependent and independent variables while low correlation is expected among independent variables. According to Gujarati (2004), a correlation coefficient between two independent variables 0.80 is considered excessive and thus certain measures are required to correct that anomaly in the data. Table 4.2 presents the elaborate result of the correlation matrix between the variables.

Correlation Matrix

Correlation

. correlate frq bgd bfe rmc bdgrmc bfermc
(obs=490)

Table 5

	Frq	Bgd	Bfe	Rmc	Bdgrmc	Bfermc
Frq	1.000					
Bgd	0.1076	1.0000				
Bfe	0.0977	0.0001	1.0000			
Rmc	-0.139	0.0095	0.0717	1.0000		
Bdg	0.0866	0.9773	0.0137	0.1612	1.0000	
Bfer	0.0662	0.0049	0.9742	0.2793	0.0490	1.0000

Source: STATA 16 output, 2023

From Table 4.2, it can be seen that all the correlation coefficients among the independent variables are below 0.80. The table reveals a positive correlation between financial reporting and

BGD and BFE. From the moderated result, BGDRMC and BFERMC have positive correlation with financial reporting.

Test of Hypotheses

Board Gender Diversity and Financial Reporting Quality

The regression results as shown on the table 4.6 depicts that board gender diversity has a coefficient of 0.6340 and a p-value of 0.0000. This suggests that board gender diversity has a positive relationship with financial reporting quality of listed non-financial firms in Nigeria. A unit increase in board gender diversity of non-financial companies will lead to a corresponding increase in financial reporting quality by 63% while holding board financial expertise, board independence and board size constant. Given the p-value, which is less than 0.05, the study failed to align with the assertion that board gender diversity has no significant effect on financial reporting quality of listed non-financial firms in Nigeria.

Board Financial Expertise and Financial Reporting Quality

Furthermore, the study found that board financial expertise has a positive and significant effect on financial reporting quality of listed non-financial firms in Nigeria. This is evidenced by a coefficient of 0.6459 and a p-value of 0.0000 which is significant at 95% level of confidence. This result inferred that a unit increase in financial expertise of the board will result in 64% increase in financial reporting quality while holding board gender diversity, board independence and board size constant. This is significant given the p-value which is greater than 0.05 and as such the study rejects the hypothesis which states that board financial expertise has a positive and significant effect on financial reporting quality of listed non-financial firms in Nigeria.

Moderating Effect of Risk Management Committee on the Relationship between Board Characteristics and Financial Reporting Quality

Risk Management Committee, Board Gender Diversity and Financial Reporting Quality

The study finds no evidence which suggests that risk management committee has a significant moderating effect on the relationship between board gender diversity and financial reporting quality of listed non-financial companies in Nigeria. This is evidenced by the coefficient of -0.1082 and the corresponding probability of 0.000 which is significant at 95% level of confidence. It therefore, means that there is a decrease in financial reporting quality when risk management interacts with board gender in the area covered by the study while holding other factors constant. Based on this, the study rejects the null hypothesis which states that, the moderating effect of risk management committee has no significant effect on the relationship between board gender diversity and financial reporting quality of listed non-financial companies in Nigeria.

Risk Management Committee, Board Financial Expertise and Financial Reporting Quality

The summary of the regression in table 4.7 again shows that risk management committee negatively and significantly moderates the relationship between board financial expertise and financial reporting quality of listed non-financial companies in Nigeria. This assertion is supported by the coefficient of -0.1456 and a p-value of 0.000 which is statistically significant given that the p-value is less than 0.05. The study, therefore, has evidence to reject the null hypothesis that risk management committee has no significant moderating effect on the relationship between board financial expertise and financial reporting quality of listed non-financial companies in Nigeria.

Discussion of Findings

The objective of this study is to examine the effect of board characteristics (board gender diversity, board financial expertise, board size and board independence) on financial reporting quality of listed non-financial companies in Nigeria.

Board Gender Diversity and Financial Reporting Quality

The study examined the effect of board gender diversity on financial reporting quality of listed non-financial companies in Nigeria. The result of the regression analysis showed that board gender diversity has a positive and significant effect on financial reporting quality of listed non-financial companies in Nigeria. This means the quality of financial reports of non-financial companies in Nigeria when there are female directors on the board. This finding is in tandem with Zalata et al. (2017) and Oyenike (2016).

Board Financial Expertise and Financial Reporting Quality

Again, the study found that board financial expertise has a positive and significant effect on financial reporting quality of listed non-financial companies in Nigeria. This means board financial expertise contributes positively in affecting the quality of financial reporting in the area covered by the study. Both internal and external directors should use their expertise and experience to improve financial reporting quality disclosure quality. The findings align with that of De Haan and Vlahu (2016) and contradicts that of Ajekwe and Ibiamke (2017).

Moderating Effect of Risk Management Committee on Board Characteristics and Financial Reporting Quality

The hypothesis stated that risk management committee has no significant moderating effect on the relationship board attributes and financial reporting quality of listed non-financial companies in Nigeria. The results of each of the individual variables are discussed below.

Moderating Effect of Risk Management Committee on Board Gender Diversity and Financial Reporting Quality

The study found evidence which suggested that risk management committee has a negative significant moderating effect on the relationship between board gender diversity and financial reporting quality of

listed non-financial firms in Nigeria. This is to say the presence of a risk management committee of has a significant statistical moderating effect on the relationship between board gender diversity and financial reporting quality of listed non-financial firms in Nigeria. Given this result, it suffices to say that when companies have a risk management committee in place, the quality of financial reporting quality improves especially when the board is dominant with female members.

Moderating Effect of Risk Management Committee on Board Financial Expertise and Financial Reporting Quality

The summary of the regression again showed that risk management committee has a significant moderating effect on the relationship between board financial expertise and financial reporting quality of listed non-financial companies in Nigeria. This implied that the composition of risk management committee by companies influences the strength of the between board financial expertise and financial reporting quality of listed non-financial companies in Nigeria. The focus of bringing financial experts on the board is to ensure reliable and high-quality financial reporting hence, the presence of risk committee further enhances the quality of financial reports.

Conclusion

The inclusion of woman on the board significantly influences the likelihood of predicting the level of the quality of the financial reports especially when the organisation has a risk management committee. The study further avers that board financial expertise does play any important role in improving the quality of financial reports when the companies have a constituted risk management committee.

Recommendations

From the findings and conclusion of the study, the following recommendations are made:

- i. That the establishment of a risk management committee should be highly considered if not made a

priority in a firm's monitoring process. The expectation is that risk management committee provides the necessary confidence to the stakeholders that financial reports are credible and reliable and that possible risk inherent in the organization are carefully reviewed and possess no threats to the going concern of the firm.

- ii. Non-financial companies should prioritize the inclusion of appropriate mix of board members with financial

knowledge on the board as their expertise in the reporting process helps in bringing suggestions that the financial reporting process. Not just that, the board is expected to have the ability to ask salient questions that pertains to the management actions as well as areas such as risk management, succession plans of CEO, corporate strategy and the questions that concerns meeting the target of financial and strategic objectives.

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FOOD INSECURITY VULNERABILITY AMONG SMALLHOLDER RICE FARMERS IN NORTHWEST, NIGERIA

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Abstract

The study examined the food insecurity vulnerability of smallholder rice farming households in North West of Nigeria. A multistage sampling technique was used to collect data from 331 smallholder rice farmers. Primary data were collected using a structured questionnaire. Descriptive statistics, Logistic regression Model, and Value at Risk Approach were used to analyze the data collected for the study. The food insecurity vulnerability analysis shows that 55.29% of the smallholder rice farmers were vulnerable to food insecurity with 68% average vulnerability. The result also indicated that 15% of the food secure would likely experience 43% depletion in future food access. Gender of household head, household size, annual farm income, type of seeds, and price-related shocks were statistically significant in determining food insecurity vulnerability. The study concludes that food insecurity vulnerability was wide spread among the smallholder rice farmers with living standard domains as leading contributors. The study recommends that policies aimed at reducing food insecurity vulnerability among smallholder rice farmers in the region should focus on interventions that address the significant factors identified. Specifically, efforts should be made to reduce household size through family planning initiatives, promote the use of improved seeds, and provide support to farmers to mitigate the impact of natural shocks such as flooding and crop diseases.

Keywords: food insecurity, vulnerability, smallholder

INTRODUCTION

Food insecurity is a significant issue in Nigeria, with millions of people unable to access sufficient amounts of nutritious food (FAO, 2020). Despite being one of the world's largest producers of cassava, yam, sorghum and rice, food insecurity in Nigeria is driven by a complex interplay of factors including poverty, population growth, climate change, and insecurity and conflict (FAO, 2020). Climate change is also a major factor that has been identified as contributing to food insecurity in Nigeria. The International Fund for Agricultural Development (IFAD) has noted that climate change has led to more frequent and severe weather events such as droughts and floods, affecting crop production and livelihoods (IFAD, 2019). This can make it difficult for farmers to produce enough food for their families and communities, and can also make it more difficult to access markets to sell their crops.

Despite the significant body of research on food insecurity vulnerability in Nigeria, there are still significant gaps in our understanding of the issue (Akinwumi, 2019). While there has been significant research on the causes and consequences of food insecurity in Nigeria, there are still significant gaps in understanding of the issue, particularly when it comes to identifying and understanding the vulnerabilities that make smallholder rice farmers susceptible to food insecurity (Adepoju & Adubi, 2017). Research on food insecurity in Nigeria has primarily focused on identifying the population groups that are most at risk of food insecurity without examining the future food consumption volatility (Ogundari et al., 2019).

But for policy purposes, what really matters is the ex-ante risk that a household will, if currently food secure, or food insecurity threshold, or if currently food insecure, will remain in food insecurity and the current or

food insecurity level of a household may not necessarily be a good guide to the household's vulnerability to poverty and food insecurity in the future. For thinking about appropriate forward-looking food insecurity interventions, the critical need then is to go beyond a cataloging of who is currently food insecure and who is not, to an assessment of households' vulnerability to food insecurity with attended consequences manifesting in poor basic necessities of life such as clothing, shelter and severe food insecurity (World Bank, 2020).

LITERATURE REVIEW

Concept of Food Security

"Food security" is defined as "the state in which all people always and in all circumstances have access, in both quantity and quality, to food that allows them to maintain a physically and mentally active and healthy lifestyle." (Shaw, 2007).

Food availability: The availability of sufficient quantities of food of appropriate quality, supplied through domestic production or imports (including Food Aid). According (FAO, 2006) the widely accepted definition points to the following dimensions of food security:

Food access: Access by individuals to adequate resources (entitlements) for acquiring appropriate foods for a nutritious diet. Entitlements are defined as the set of all commodity bundles over which a person can establish command given the legal, political, economic and social arrangements of the community in which they live (including traditional rights such as access to common resources).

Utilisation: Utilization of food through adequate diet, clean water, sanitation and health care to reach a state of nutritional well-being where all physiological needs are met. This brings out the importance of non-food inputs in food security.

Stability: To be food secure, a population, household or individual must have access to adequate food at all times. They should not risk losing access to food as a consequence of

sudden shocks (e.g. an economic or climatic crisis) or cyclical events.

Concept of Food Insecurity

Food insecurity is defined as the state of being without reliable access to a sufficient quantity of affordable, nutritious food, due to resource or other constraints, not voluntary fasting or dieting, or because of illness, or for other reasons. This definition is supported by ethnographic research conducted by Radimer, Olson, Greene, Campbell & Habicht (1992); Hamelin, Habicht, and Beaudry (1999); Hamelin, Beaudry, and Habicht (2002); Quandt, McDonald, Arcury, Bell, and Vitolins (2001). Food insecurity is experienced when there is uncertainty about future food availability and access, insufficiency in the amount and kind of food required for a healthy lifestyle, or the need to use socially unacceptable ways to acquire food.

Concept of Vulnerability

The concept of vulnerability is difficult to define due to its usage in different fields. Chambers describes it as a complex social phenomenon, consisting of helplessness, insecurity, risk, and shock. Within the sustainability science field, vulnerability is defined as the likelihood of a system, subsystem, or component of a system being damaged due to exposure to hazards, with risk being implied. The term "social vulnerability" encompasses exposure to various stresses and shocks, such as social exclusion, abuse, and natural disasters, leading individuals, groups, or entire societies to be vulnerable to their combined effects. The unique qualities of social interactions, institutions, and cultural value systems contribute to these effects. (Turner, Kasperson, Matsone, McCarthy, Corel, Christensene, Schillerb, 2003)

Concept of Poverty Vulnerability

Vulnerability to poverty is the probability or risk of being in poverty or falling into deeper poverty in the future. It is a key dimension of welfare, as it can constrain households to

lower investments in productive assets and diversify their income sources. The degree of vulnerability depends on the characteristics of the risk and the household's ability to respond to risk. Measurement of vulnerability will also depend on the time horizon: a household may be vulnerable to risks over the next month, year, etc (Alwang, Siegel, and Jørgensen, 2001).

Pritchitt Suryahadi & Sumarto. (2000) defined vulnerability as the risk a household will fall into poverty at least once in the next few years. Mansuri and Healy (2000) defined vulnerability as an ex-ante and forward-looking probabilistic measure. Holzmann and Jørgensen (2000) defined vulnerability to poverty as the ex-ante risk that a household will, if currently non-poor, fall below the poverty line, or if currently poor, will remain in poverty or fall deeper into poverty. Vulnerability is the household ability to smooth (insure) consumption when faced with volatility in its income stream while preserving a minimum level of assets. Utility lost due to risks is the difference between the expected household consumption and the certainty-equivalent consumption.

Concept of Food Insecurity Vulnerability

Løvendal and Knowles (2005) stated that vulnerability refers to people's propensity to fall, or stay below a pre-determined food security threshold. By food security, we understand the physical and economic access at all times to sufficient, safe and nutritious food to meet the dietary needs and food preferences for an active and healthy life. They further opined that vulnerable groups comprise people with common characteristics, who are likely to fall or remain below a certain welfare threshold in the near future. While most of those who are presently below the threshold may face a high probability of being so also in the future, food security and poverty are not static. Several studies show that people move in and out of food insecurity and poverty (Dercon and Krishnan, 2000).

Christiaensen and Boisvert (2000) defined vulnerability to food insecurity as the probability of being undernourished in the

future. The welfare benchmark is the minimum dietary energy requirement for a moderate level of physical activity, estimated at 3000 kilo-calories per adult equivalent per day. A household is considered as food-insecure if its current calorie intake is below the minimum threshold of 3000 kilo-calories.

METHODOLOGY

The study focused on the North West zone of Nigeria, specifically Kebbi, Kano, and Jigawa states, which are known for their high rice production. According to Fischer et al. (2012), the North West is a vegetation belt located in the north-west region of Nigeria, covering a vast area including the northern states bordering Niger Republic. This zone is primarily known for the production of legumes and cereals such as groundnuts, sorghum, rice, and millet. The Sudan Savannah is characterized by low annual rainfall and long dry seasons, resulting in fewer trees and shorter grasses compared to the Southern Guinea Savannah. It is also known for its abundance of short grasses and a few stunted trees (Ayinde & Otekunrin, 2020). The North West zone faces various challenges such as poverty, food insecurity, rapid population growth, and environmental degradation (Ayinde & Otekunrin, 2020). The Sudan Savannah is also one of the most densely populated regions in northern Nigeria, with a population of over 70 million people (Ayinde & Otekunrin, 2020). These regions are significant contributors to Nigeria's rice production. Focusing on smallholder farmers' socio-economic conditions, access to resources, and challenges they encounter can inform policies and interventions aimed at improving their livelihoods and alleviating poverty.

A multistage sampling technique was used to select a total of 107 farmers group were selected. Each farmer group comprises of average of 15 members in Kano, 25 members in Kebbi and 29 members in Jigawa giving total sampling frame of 2,407. A total sample size of 331 was determined using Rao soft sampling size calculator at 95% confidence level and 5% Confidence interval. Cross-sectional primary data was collected using

structured questionnaires. The Value at Risk (VaR) approach and binary logistics regression model were used to analyze the data (Olalekan et al., 2021).

Model Specifications

Value at Risk Approach (VaR)

The VaR approach provides a quantitative measure of vulnerability that can be used to position households in relation to the reference threshold (Scaramozzino, 2006). It will also allow households to determine the

amount of resources that should be set aside in order to achieve food security at any level of confidence. It can also be used to identify the most effective risk management strategies for reducing the likelihood of food insecurity or the severity of its consequences. A two-stage least squares regression model was used to generate estimates and assess the degree of vulnerability of each household to food insecurity. The estimated likelihood is given by:

$$V_h = Pr(\ln Ch < Z | X_h) \text{-----(1)}$$

$$V_h = \Phi \left(\frac{\ln Ch - X_h \beta}{\sqrt{X_h}} \right) \text{-----(2)}$$

Where:

$$\ln Ch = X_h \beta + \epsilon_h \text{-----(3)}$$

Ch = Per capita food consumption expenditure

Z = Appropriate household consumption

Xh = Household characteristics

β = Vector of parameters to be estimated

εh = disturbance term

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εh = disturbance term

X1 = Gender of household head (1=

X2 = Farm size (hectare)

X3 = Household size (numbers)

X4 = Educational status (years)

X5 = Year of farming experience (years)

X6 = Annual Farm Income (NGN)

X7 = Annual Non-Farm Income (NGN)

X8 = Contact to extension agent (binary)

X9= Harvest failure (Yes =1, 0 otherwise)

X10 = Health failure of the household head (Yes =1, 0 otherwise)

X11 = Cooperative participation (member =1, 0 otherwise)

Model specification for determinants of food insecurity vulnerability

The binary logistic regression mode for relationship food insecurity vulnerability status and the household characteristics was specificized and estimated implicitly stated as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_4 X_4 + \beta_5 X_5 + \dots + \beta_k X_k + U \dots \dots \dots (4)$$

Y = Food insecurity Status (1= vulnerable to food insecurity, 0 otherwise)

B0– β8= Coefficients to be estimated

U = Noise term

X1 = Age of the respondent (years)

X2 = Gender of household head (1 = male, 0 otherwise)

X3 = Years of formal education (continuous)

X4 = Total household size

X5 = Years of rice production experience (continuous)

X6 = Total farm size devoted to rice production (number of hectares)

X7 = Type of seeds uses (1= improved seeds, 0 otherwise)

X8 = Consumption expenditure

X10= Price related shocks (1= Prices related shocks, 0. Otherwise)

X11 = Natural shocks (1 = Natural shocks, 0 otherwise)

RESULTS AND DISCUSSION

Food insecurity vulnerability status

These sections analyze food insecurity vulnerability among the smallholder rice farmers in the study area. Food insecurity vulnerability in the context of this study is the forward-looking measure of the food insecurity. It focusses to identify households who may face future food consumption volatility. The result in this section presents the level of food insecurity vulnerability, food

security status and level of vulnerability, and the geographical spread of the vulnerability in the study area. Table 1 present the level vulnerability to food insecurity among the smallholder rice farmers in the study area. Vulnerability to food insecurity in the context of the study is the people’s propensity to face future food shortages. or fall below a pre-determine food security threshold. Food insecurity vulnerability means probability of facing future food consumption smoothing.

Table 1: Level of Vulnerability to food insecurity

Geospread	Vulnerable (Vh ≥ 0.5)		Non vulnerable (Vh > 0.5)		Average vulnerability	
	Frequenc y	Percentage	Frequency	Percentage	Vulnerabl e	Non vulnerable
Kano	45	60.8	30	39.2	0.38	0.62
Kebbi	82	56.9	62	43.1	0.76	0.24
Jigawa	76	67.85	36	32.14	0.58	0.42
Pooled	183	55.29	148	44.70	0.68	0.32

Source: Computed from Survey, 2019

The result shows that 55.29% of the smallholder rice farmers are likely to face food insecurity in the future based on their present characteristics whereas 44.7% were not vulnerability to food access volatility in the future in the study area. The vulnerable household have 68% cumulative volatility in their future food consumption or experience some form of food consumption smoothing. In Kano State the result revealed that 60.8% were vulnerable to food insecurity vulnerability, this account for 38% of vulnerability among the smallholder rice farmers in the state. 39% were not vulnerable in the state with 62% vulnerability in the state suggesting that even though vulnerability is likely to increase at a very high rate in the state. In Kebbi state the result shows that 56.9% were vulnerable with 76% volatility in future consumption threshold. The non-vulnerable respondents accounted for 43.11% with 24% future consumption volatility. The results in Jigawa state indicated that 67.85%

were vulnerable with 58% future vulnerability to consumption threshold while the non-vulnerable in the state accounted for 32.44% with 32% of future consumption volatility. The results across the three states indicated that although highest proportion of vulnerability was recorded in Jigawa state, among the vulnerable respondents, the highest level of future consumption vulnerability was recorded among vulnerable smallholders in Kebbi state. The result also revealed that the highest in chance of future vulnerability was recorded among non-vulnerable households in Kano state. This implied that future food consumption volatility to the extent of going beyond minimum food consumption threshold goes beyond the current vulnerability status of the smallholder farmers in this study and it suggesting forecast only the current four security status without addressing vulnerability could reverse effects of food policy in the medium and long term. The results imply that vulnerable

smallholder rice farmers will face physical and economic access constraints in accessing sufficient, safe, and nutritious food to meet their needs and food preferences for an active and healthy life. This will affect their ability to take informed farming decisions (Olabisi et al., 2021).

It revealed that smallholder rice farming household will likely instability of their availability, access and utilization of food at particular time of the years. This result implies that vulnerable smallholder rice farmers will both physical and economic access constraints in accessing, sufficient, safe and nutrition’s food to

meet their needs and food preferences for an active and healthy life. This will in return affect their ability to take informed farming decisions. These results are similar to Welderufel (2014), where they averred that future vulnerability of households is related to food insecurity status and also shows that chronic food insecurity was prevalent in rural areas similarly the finds Corroborates the findings of Ukpe, Nweze and Arene, (2016) where they opined that highly level of vulnerability exists among rural households in their study of vulnerability in Niger Delta, Nigeria.

Food insecurity vulnerability and food insecurity status

The result in table 18 further present the disaggregation of the food insecurity vulnerability by food insecurity status.

Table 2: Disaggregation of Food Insecurity Vulnerability Status

Current Status	Vulnerable		Non-Vulnerable		Average Vulnerability
	Frequency	Percentage	Frequency	Percentage	
Food Insecure	117	35.34	98	29.61	0.57
Food Secure	66	19.93	50	15.11	0.43
Total	183	55.27	148	44.70	

Source: Computed from Survey, 2019

The result indicated that 35.34% of the food insecure smallholder rice farmers were vulnerable to food insecurity accounting for 0.57 of the vulnerability among the smallholder rice farming household whereas the result shows that 19.93% of the food secure were vulnerable. The results revealed that even though some smallholder farmers were food secure but they were not immune to vulnerability. The vulnerable household accounted for most of the proportion of the vulnerability. The results implied that being vulnerable does not stop only affects any food insecure householder but as affect food secured households. The results means that food insecurity vulnerability assessment uncovers smallholder farmers who may be in potential food insecurity volatility implying that they might face challenges in availability,

access, utilization and stability of food supply. The study showed that vulnerable smallholder rice farming households will likely experience instability in the availability, access, and utilization of food at particular times of the year. This finding implies that vulnerable smallholder rice farmers will face physical and economic access constraints in accessing sufficient, safe, and nutritious food to meet their needs and food preferences for an active and healthy life. This, in turn, will affect their ability to make informed farming decisions (Adejobi et al., 2021). The study also revealed that even though some smallholder farmers were food secure, they were not immune to vulnerability, and vulnerable households accounted for most of the proportion of vulnerability. Therefore, being

vulnerable does not only affect any food-insecure household but also affects food-secure households (Adejobi et al., 2021). These findings are consistent with the works of Asmamaw, Budusa and Teshager (2015), who argued that food insecurity vulnerability could be experienced by both food-secure and food-insecure households in their study of the determinants of vulnerability to food insecurity in three different agroecological zones of Ethiopia. The study's results highlight the need for food security policies that target both food-insecure and food-secure households to ensure long-term food security (Adejobi et al., 2021).

Determinants of food insecurity vulnerability

This section presents the factors driving the vulnerability among the smallholder rice

farmers in the study area using binary logistics regression analysis to unravel the factors. Theoretical and empirical reasons were used in selecting factors to include in the regression equation. The food insecurity vulnerability status established using value at risk approach was the dependent variables. Age, gender of household head, years of formal education, years of farming experience, household size, farm size, type of seeds, fertilizer, consumption expenditure, price shocks and natural were the independent variable. Table 3 present the results of logic result regression analysis of the factors influencing the vulnerability to food insecurity (access), the food insecurity vulnerability status was used as the response variable. The table presented the pooled results and state level results.

Table 3 Determinants of food insecurity vulnerability

Variables (ivs)	Pooled Results			Kano			Kebbi			Jigawa		
	B	Sig.	Exp(B)	B	Sig.	Exp(B)	B	Sig.	Exp(B)	B	Sig.	Exp(B)
Age of the respondent	-0.026	0.11	0.975	-0.011	0.743	0.989	-0.012	0.673	0.988	-0.027	0.10*	0.974
Gender of household head	-1.341	.001**	0.262	0.445	0.623	1.561	-2.001	0.018*	0.135	-1.379	0.00**	0.252
Years of formal education	0.015	0.489	1.016	0.115	0.076*	1.122	-0.006	0.876	0.994	0.011	0.64	1.011
Years of rice farming exp.	-0.018	0.35	0.983	-0.027	0.505	0.973	-0.026	0.492	0.975	-0.02	0.28	0.98
Household size	0.183	.000***	1.201	0.235	0.002*	1.265	0.128	0.044*	1.136	0.193	0.00**	1.213
Farm size devoted to rice	-0.019	0.85	0.981	-1.553	0.035*	0.212	0.158	0.275	1.172	-0.055	0.59	0.946
Annual farm income	-0.603	.084*	0.547	-1.034	0.261	0.356	-1.961	0.033*	0.141	-0.493	0.15	0.611
Type of seeds used	-0.944	.003**	0.389	0.428	0.745	1.534	-0.27	0.582	0.763	-0.505	0.15	0.603
Access to fertilizer	-0.189	0.612	0.828	-2.985	0.041*	0.051	-0.457	0.549	0.633	-0.205	0.58	0.815
Consumption expenditure	-3.769	0.108	0.023	-8.121	0.266	0	1.607	0.01**	4.986	-4.752	0.04**	0.009
Price shocks	-0.081	0.784	0.922	0.019	0.983	1.019	1.577	0.001*	4.841	-0.127	0.66	0.881
Natural shocks	0.531	.065*	1.701	0.119	0.873	1.127	0.587	0.192	1.799	0.514	0.07*	1.673

Constant	6.081	0	437.57	10.501	0.113	36.827	2.688	0.134	14.699	6.683	0.00	799.05 3
-2 Log likelihood	327.933a			54.309a			139.456a			335.115a		
Cox & Snell R Square	0.286			0.476			0.306			0.269463		
Nagelkerke R Square	0.383			0.64			0.412			0.361124		
Chi-square	106.712***			49.147*			51.154**			99.530**		
Significance level	***P<0.001	P**<0.05		P*<0.1								

Source: Computed from survey data, 2019

The independent variables included in the equation were age of the respondents, of gender of household head, years of formal education, years of rice production experience, household size, farm size devoted to rice production, types of seeds used, household consumption expenditure, access to fertilizer, price shocks, natural shock. The omnibus test of model coefficients, model summary and Hosmer and Lemeshow Test indicates that the model is a good fit to explain the variation in the dependent variable. Cox & Snell R squares indicated that variation in the dependent variable was accounted by 68.4% as a result of the predictor variables included in the equation.

The pooled result shows that six (6) out of the ten (10) predictors included in the equation were statistically significant in explaining the variation in the regressand. It shows that Gender of household head, household size, annual farm income, type of seeds and price related shocks. The result revealed that household size had a positive significant relationship with food insecurity vulnerability with log odds ratios of 1.201 and a positive coefficient value of 0.183. The result suggests that a unit increase in household size translates to an increase in the log odds ratios of food insecurity vulnerability by a factor of 1.201. Large household size would naturally require huge resources for food supply either directly through farmers' own production or purchase through markets. Presence of autonomous consumers in the household or unproductive household members could increase vulnerability significantly. This finding corroborates the works of Zemedu

and Mesfin, 2014 who noted that higher per capita food cost relatively exposes households to more food shortages in the future. The gender of household head and the type of seeds used in production had a significant negative relationship with food insecurity vulnerability. The log odds ratio of food insecurity decreases by a factor of 0.262 among male-headed households. The implication of this finding is that female-headed households are more likely to experience food insecurity vulnerability; this is consistent with theoretical and a priori expectations due to many economic, social and cultural voids restricting women's access to opportunities in Sudan and Nigeria. This suggests that female-headed households were more likely to experience future shortages and this underscores gender mainstreaming in poverty and food insecurity policies.

The log odds ratios of type of seeds used was 0.389, suggesting that the odds ratios of future food insecurity vulnerability decrease by a factor of the odd ratio when the smallholder uses improved seeds. This could be explained by the fact that improved seeds have the capacity to improve productivity, thereby guaranteeing food availability and access. The positive highly significant relationship between natural shocks and food insecurity vulnerability among farmers suggests that a unit increase in exposure to covariates natural shocks increases the odds ratios of vulnerability to food insecurity by a factor of 1.701. This finding is in agreement with Asmamaw et al., (2015) that vulnerability diminishes as farmers resort to traditional practices.

The results revealed that age, farm size devoted to rice production, consumption expenditure and price related shocks were not statically significant factors in determining the food insecurity vulnerability status among the smallholder farmers in the Sudan Savannah of Nigeria. The most important determinants of food insecurity vulnerability were household size, gender of the household head, years of rice farming experience, type of seeds used and natural shocks. The result implied that determinants of the food insecurity volatility were household characteristics, production and natural phenomenon. The major natural disaster identified were flooding and prevent emergence persistent crop diseases suggesting climate changes are affecting the productivity of the farmers which is to some extent outside the control of the famers.

The state level result in Kano State shows that four (4) of the ten (10) variables included in the regression equation were statistically significant determining the food insecurity vulnerability. The significant variables were years of formal education, household size, farm size devoted to rice production and access to fertilizer. Household size and farm size were statistically significant at 5% level of significance while years of education and fertilizer were significant at 10% level of significance. Household size has significant positive relationship with log odds ratios of 1.265. This suggest that unit increase in household size increases the log odds ratio of food insecurity vulnerability by a factor of the odd ratio. The farm size devoted to rice production had significant negative relation with food insecurity vulnerability had significant negative relationship with log odds ratios of 0.212 indicating probability of being vulnerable to food insecurity decreases by a factor the odd ration each time a farmer expand production in rice. The years of formal education has significant positive relationship with vulnerability status with logs odds ratios of 1.122 indicating that unit increase unit decrease in years of formal education increases the chance of vulnerability by a factor of the odd ratio. The

access to fertilizer decreases the odds ratios of vulnerability with odds ratios of 0.051 suggesting that increase unit increase in access to fertilizer by a factor of the odd ratio. The significant relationship of household vulnerability in the state may be due to the fact farmers with large household will require huge resources to provide food and basic needs and the significant influence suggests that farming household comprises mainly autonomous consuming contributing to little to household income.

The result in Kebbi State shows that five (5) of the ten (10) variables included in the equation were statistically significant in determining the food insecurity vulnerability in the state. The result revealed that gender of household head household size, annual income, consumption expenditure and price related shocks were statistically significant at 5% level of significance. Gender of household head has significant negative relationship with log odds ratios of 0.135. Suggesting the probability of facing future food insecurity decreases by a factor of the odd ratio whenever the smallholder rice farmers household head is male. The household size has significant positive relationship with log odds ratios of 1.136 indicating that unit increase in household size increases odds ratios of vulnerability by a factor. The annual farm income has negative significant relationship with food insecurity vulnerability with log odds ratios of 0.141 implying that unit increase in annual farm income decrease the probability of food insecurity by a factor of the odd ratio. The household consumption expenditure has significant positive relationship with vulnerability status. The probability of vulnerability decreases by a factor value of 0.141 whenever annual farm income increases. The price related shocks were significantly related to vulnerability with log odds ratios of 4.841 indicating unit increase in prices increases the probability of food insecurity vulnerability by a factor of 4.81. The implied the major determinants of food insecurity vulnerability in the state gender of household head household size, annual

income, consumption expenditure and price related shocks.

The result in Jigawa State shows that five(5) out of the ten (10) of the independent variables included in the regression equation were statistically significant related to vulnerability of food insecurity in the state. It revealed that gender of household head, household size, age of the household head, food consumption expenditure and natural shocks were statistically significant in determining food insecurity vulnerability. The result shows that household size and gender of household head were significant at 1% level of significance whereas the age, food consumption expenditure and natural shocks were significant at 10% level of significance. The household size has significant positive relationship with log odds ratios of 1.213 suggesting that unit change in household size tend to increase the odds ratios of vulnerability to food insecurity vulnerability by a factor of the odd ratios . The gender of the household head has significant negative relationship with log odds ratios of 0.252 suggesting that the probability of experience vulnerability decrease by a factor of the odd ratios whenever the head of the household is male.

Natural shocks significant positive relationship with log odds ratios of 1.673 suggesting that increase exposure to natural shocks such floods or drought has the potential to increase the chance of experience future food shortages by a factor of the odd ratio. Natural disasters like flash flood is known to create disequilibrium of the livelihood security status of the smallholder rice farmers. The significant relationship between the food insecurity vulnerability in the state may a point to the fact that the State has had series incidence of flash floods destroying farm investments thereby predisposing them to food insecurity.

Moreover, the study revealed that female-headed households were more likely to experience food insecurity vulnerability, which is consistent with the theoretical and a priori expectations due to many economic,

social, and cultural voids restricting women's access to opportunities in the North West, Nigeria. The study suggests that female-headed households are more likely to experience future shortages, and this underscores the need for gender mainstreaming in poverty and food insecurity policies. The study shows that addressing food insecurity requires a multifaceted approach that takes into account household characteristics, production, and natural phenomena. Policymakers and stakeholders should focus on reducing the impact of natural disasters on farming productivity, investing in gender mainstreaming in poverty and food insecurity policies, and promoting the use of improved seeds to increase productivity and ensure food availability and access for smallholder rice farmers.

CONCLUSION AND RECOMMENDATIONS

Based on the study's results, it can be concluded that a significant proportion of smallholder rice farmers in the study area, as well as in Kano, Kebbi, and Jigawa states, are likely to experience food insecurity in the future. The vulnerability to food access volatility is high among these households, and there is a considerable risk of future consumption volatility going beyond the minimum food consumption threshold. Therefore, it is essential to address vulnerability while considering food security policies, as focusing only on the current food security status may not be sufficient in the medium and long term. It was equally concluded that the determinants of food insecurity vulnerability among smallholder rice farmers in the North West of Nigeria include household characteristics, production, and natural phenomena. Specifically, household size, gender of household head, years of rice farming experience, type of seeds used, and exposure to natural shocks were found to be significant factors affecting food insecurity vulnerability. In Kano State, household size, farm size devoted to rice

production, years of formal education, and access to fertilizer were significant factors, while in Kebbi State, gender of household head, household size, annual income, consumption expenditure, and price-related shocks were significant factors.

Based on these findings, it is recommended that policies aimed at reducing food insecurity vulnerability among smallholder rice farmers in the region should focus on interventions that address the significant factors identified. Specifically, efforts should be made to reduce household size through family planning initiatives, promote the use of improved seeds, and provide support to farmers to mitigate the impact of natural shocks such as flooding and crop diseases. Policies should also target increasing access to formal education and fertilizer, particularly in Kano State, where these were found to be significant factors. Finally, gender mainstreaming policies should be implemented to address the significant gender disparities identified in the study. Finally, the study emphasizes the importance of addressing vulnerability to achieve sustainable food security among smallholder rice farmers in the study area and beyond. Policymakers and stakeholders in the agricultural sector should prioritize policies and interventions that address the root causes of vulnerability among smallholder farmers, including poverty, low productivity, and limited access to resources and markets.

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TOWARDS THE COMMERCIALIZATION OF PLASTIC-BRICK FOR CONSTRUCTION IN KANO STATE, NIGERIA

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Abstract

This conceptual paper addresses the escalating issue of plastic waste resulting from the widespread use of polymeric materials in industrialized and economically expanding eras. Such waste, primarily disposed of in landfills, poses significant environmental challenges due to its toxic and non-biodegradable nature, leading to resource depletion and land contamination. To combat this problem, innovative strategies are essential to divert plastic waste away from landfills. This paper proposes the incorporation of Polyethylene Terephthalate (PET) cap recycling into the brick manufacturing process as a sustainable waste management solution and the commercialisation of the product. The methodology of this conceptual paper involves synthesizing existing research and insights from waste management, polymer science, sustainable manufacturing and business. Specifically, it focuses on PET cap recycling techniques and their feasibility within the context of brick production. The findings of this paper indicate that integrating PET cap recycling into brick manufacturing offers significant environmental and economic benefits. This includes a reduction in plastic waste sent to landfills, resource conservation, and the creation of value-added products aligning with sustainable construction practices. The implications for theory and practice are substantial. The proposed solution contributes to the discourse on sustainable waste management strategies in the construction industry, emphasizing circular economy principles. Moreover, the strategic deployment of information technology systems underscores the importance of technological advancements in gaining competitive advantages and driving business innovation. This paper introduces a novel approach to addressing the plastic waste crisis in Kano state, Nigeria, by integrating PET cap recycling in brick manufacturing, offering practical solutions with potential environmental, economic, and social benefits.

Keywords: PET caps, recycling, brick production, sustainable waste management, plastic waste, environmental impact.

INTRODUCTION

Northern Nigeria, with its rapidly growing population and urbanization, is facing a severe waste management crisis. As of 2024, the urban population in Northern Nigeria has surged past 35 million, exacerbating the region's struggle to effectively collect, process, and dispose of increasing waste. This rapid urban growth has led to a significant escalation in plastic waste production. In 2010, over 850,000 tons of plastic waste were not managed scientifically, with quantities rising dramatically to about

2.5 million tons by 2020 (Awoyera et al., 2018).

The Mismatched Waste Index 2024 by the World Population Review categorizes Nigeria's plastic waste status as "very high." The country contributes to 4.5% of the global plastic consumption rate, importing 960,000 tonnes of plastics, producing 935,800 tonnes domestically, and releasing 27,685 tonnes of plastic waste into its waterways annually. This mismanagement of plastic waste has severe environmental consequences, including soil contamination, hindered

groundwater movement, marine pollution, and reduced environmental aesthetic value (Hahladakis & Iacovidou, 2019).

Globally, plastic waste production exceeded 360 million tons in 2022, with only about 180 million tons recycled or landfilled. The remainder polluted the environment, intensifying the ongoing plastic pollution crisis. The COVID-19 pandemic has exacerbated this situation by increasing the use of single-use plastics for sanitizers, masks, gloves, and PPE kits, contributing significantly to the 'pandemic of plastic pollution' (Silva et al., 2021).

Kano State, renowned for its cultural heritage, is experiencing significant environmental challenges due to rapid industrialization and increased consumption of polymeric materials. Plastic waste, especially Polyethylene Terephthalate (PET) caps, poses a severe threat to the local environment. Traditional disposal methods are ineffective, necessitating innovative approaches to mitigate the environmental impact (World Bank, 2019; United Nations Environment Programme, 2018).

This research aims to address the environmental concerns associated with plastic waste in Kano State by integrating recycled PET caps into brick production. This approach aligns with global sustainable waste management practices and circular economy principles (Ellen MacArthur Foundation, 2019). The project seeks to mitigate plastic pollution, reduce environmental harm, and commercialize the product, promoting sustainable development and environmental stewardship in Kano State.

LITERATURE REVIEW OF PET CAPS

Polyethylene terephthalate (PET) is a widely used plastic in packaging, especially for bottles and caps. PET caps are essential in the beverage and packaging industry due to

their durability, safety, and recyclability. In Nigeria, the management of PET caps presents unique challenges and opportunities. The utilization of PET caps in Nigeria is extensive, given the widespread use of bottled beverages and other packaged products. Adequate disposal of these caps is a significant challenge, contributing to environmental pollution. Research by Aderemi *et al.* (2020) underscores the need for sustainable management of PET caps in Nigeria, emphasizing the potential for recycling in various applications, including construction materials (Aderemi *et al.*, 2020). This insight into the prevalence of PET caps establishes a foundation for exploring their integration into brick production.

Market Demand and Industry Usage:

The demand for PET caps in Nigeria is driven primarily by the beverage industry, including bottled water, carbonated soft drinks, and fruit juices. With a growing population and increasing urbanization, the consumption of bottled beverages has surged, leading to a higher demand for PET caps. The PET food market in Nigeria was equal to 479 million USD (calculated in retail prices) in 2015. Until 2025, the pet food market in Nigeria is forecast to reach 2.81 billion USD (in retail prices), thus increasing at a Compound Annual Growth Rate (CAGR) of 17.87% per annum for the period 2020-2025. This is a decrease, compared to the growth of about 21.91% per year, registered in 2015-2019. The average consumption per capita in value terms reached 2.72 USD per capita (in retail prices) in 2015. In the next five years, it grew at a CAGR of 18.70% per annum. In the medium term (by 2025), the indicator is forecast to slow down its growth and increase at a CAGR of 13.82% per annum (Market Research Data, 2021).

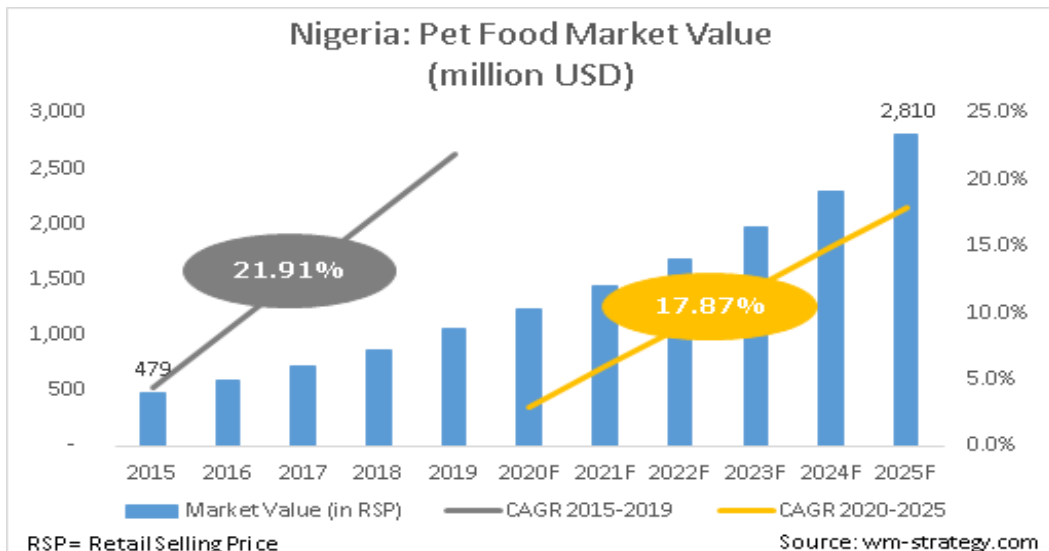


Figure 1.0: PET Food Market Value Analysis (Market Research Data, 2021).

Manufacturing Process and Local Production of PET Caps:

The manufacturing process of PET caps involves injection molding, where PET resin is melted and injected into molds to form the cap shape. In Nigeria, several local manufacturers produce PET caps, supporting the growing packaging industry. Companies such as Sacvin Nigeria Limited and Sonnex Packaging Nigeria Limited are notable producers of PET caps, contributing to the local economy and job creation (Adewuyi, 2019).

Market Analysis in Sustainable Construction:

Sustainable construction practices have gained momentum globally, emphasizing resource efficiency and environmental responsibility. The demand for eco-friendly building materials has prompted researchers to explore novel solutions that not only address environmental concerns but also meet market demands. According to a study by Cai et al. (2019), sustainable construction materials, including those incorporating recycled plastics, are gaining popularity due to increased awareness of environmental issues (Cai et al., 2019). This aligns with the global market trend toward sustainable construction practices. The global market for sustainable construction materials, including those incorporating recycled plastics, is projected to grow significantly. In 2023, the

market was valued at approximately \$187 billion and is expected to reach \$388 billion by 2030, with a compound annual growth rate (CAGR) of 11.3% (Market Research Future, 2023).

Environmental and Economic Benefits of PET Cap Recycling:

Recycling PET caps offers significant environmental and economic benefits. Environmentally, it reduces plastic pollution, conserves natural resources, and lowers greenhouse gas emissions associated with plastic production. Recycling one ton of PET can save approximately 7.4 cubic yards of landfill space and reduce energy consumption by 84% compared to producing virgin PET (Hopewell et al., 2009). By diverting PET caps from landfills, Nigeria can significantly reduce plastic pollution and its associated environmental impacts.

Economically, recycling creates jobs, supports local industries, and reduces the costs associated with waste management and landfill use. The recycling industry provides economic opportunities through job creation in collection, sorting, and processing activities. Additionally, recycled PET (rPET) can be used to manufacture new products, creating a circular economy that supports local industries and reduces dependency on imported raw materials (Adewuyi, 2019).

Plastic Waste Management in Nigeria:

Nigeria, like many developing nations, faces significant challenges in plastic

waste management. Recent research has explored the feasibility of integrating recycled plastics into construction materials, such as bricks and paving stones (Ukpong *et al.*, 2023). This approach not only helps in managing plastic waste but also contributes to sustainable building practices. The management of PET cap waste poses significant environmental challenges in Nigeria. Despite their recyclability, a substantial portion of PET caps ends up in landfills or as litter due to inadequate waste management infrastructure and public awareness. Nigeria lacks sufficient recycling facilities to handle the volume of PET waste generated. The few existing recycling plants are often overwhelmed, leading to inefficient processing and a backlog of recyclable materials. Additionally, the informal recycling sector, although active, operates with limited resources and support, hindering its capacity to manage PET cap waste effectively (Nduka *et al.*, 2021).

Policy and Regulatory Framework:

Nigeria has implemented several policies aimed at improving waste management and promoting recycling. The National Environmental Standards and Regulations Enforcement Agency (NESREA) has established regulations for plastic waste management, including guidelines for recycling and extended producer responsibility (EPR) schemes (NESREA, 2019). However, enforcement remains weak, and gaps in policy implementation hinder progress.

The literatures reviewed underscore the significance of integrating recycled PET caps into brick production, aligning with global trends in sustainable construction practices. In the Nigerian context, where plastic waste management is a pressing issue, this approach not only provides a solution to environmental challenges but also taps into the demand for eco-friendly construction materials. Further research is essential to address technical challenges, assess the environmental and economic feasibility, and tailor the approach to the specific needs of the Nigerian market.

Methodology

Research Design

The study adopted a mixed-methods approach, utilizing both qualitative and quantitative research methodologies to provide a comprehensive analysis of the commercialization of plastic bricks for construction in Kano State, Nigeria.

Qualitative Methods

- **Surveys:** Structured questionnaires were distributed to a diverse group of stakeholders, including local residents, construction professionals, and policymakers. The aim was to assess the awareness, perceptions, and acceptance of plastic bricks (Ukpong *et al.*, 2023).
- **Interviews:** In-depth, semi-structured interviews were conducted with key informants such as waste management officials, industry experts, and community leaders to gather detailed insights into the feasibility and challenges of plastic-brick adoption (Hahladakis & Iacovidou, 2019).
- **Site Visits:** Field studies involved visiting plastic waste collection sites, recycling centers, and pilot production facilities. Observations were made on the operational processes and logistical challenges associated with plastic waste collection and brick production (Singh *et al.*, 2017).
- **Case Studies:** Selected case studies of communities or projects that have successfully implemented plastic-brick technology were analyzed to identify best practices and lessons learned (Adekomaya *et al.*, 2020).

Quantitative Methods

- **Quantitative Surveys:** Data from surveys were quantitatively analyzed using statistical software to identify trends, patterns, and correlations (World Population Review, 2024).
- **Technical Performance Tests:** Laboratory tests were conducted to measure the physical and mechanical properties of plastic bricks, such as compressive strength, thermal

conductivity, and durability (Cai et al., 2019).

Sources of Plastic Waste in Kano State

- **Household Waste:** Residential areas were surveyed to estimate the quantity and types of plastic waste generated (Conceptos Plásticos, 2018).
- **Commercial Waste:** Plastic waste from markets, shops, and businesses were documented (Conceptos Plásticos, 2018).
- **Industrial Waste:** Wastes from manufacturing and industrial activities were analyzed (Conceptos Plásticos, 2018).
- **Institutional Waste:** Schools, hospitals, and offices were surveyed for their plastic waste generation (Conceptos Plásticos, 2018).

Collection Methods:

- **Community-Based Collection:** Collaboration with local community groups and NGOs to organize regular plastic waste collection drives (Ukpong et al., 2023).
- **Partnerships with Waste Management Companies:** Engaged with existing waste management companies to facilitate the segregation and collection of plastic waste (Hahladakis & Iacovidou, 2019).
- **Recycling Centers:** Partnered with recycling centers for efficient sorting and processing of collected plastic waste (Singh et al., 2017).
- **Labor:** Trained local workers on the operation of machinery and production processes. Emphasis on creating job opportunities and skill development (World Population Review, 2024).

Production Process of PET Cap-Integrated Bricks

The production process of PET cap-integrated bricks involves several crucial steps to ensure the efficient recycling of plastic waste and the creation of high-quality construction materials. The following steps outline the process:

1. **Collection:** Plastic waste, specifically PET caps, is gathered from various sources, including households, businesses, and waste collection centers. Effective collection methods are essential to secure a steady supply of raw materials (Singh et al., 2017).
2. **Sorting:** The collected PET caps are sorted by type and quality using a combination of manual and automated sorting techniques. This step ensures that only suitable materials proceed to the next stage, enhancing the quality of the final product (Hahladakis & Iacovidou, 2019).
3. **Cleaning:** The sorted PET caps undergo a thorough cleaning process, which involves washing and drying to remove any contaminants such as dirt, labels, and residues. Clean plastic is essential for ensuring the structural integrity of the bricks (Ukpong et al., 2023).
4. **Shredding:** The cleaned PET caps are fed into shredders to be reduced into smaller, manageable pieces. Shredding increases the surface area of the plastic, making it easier to melt and mold (World Population Review, 2024).
5. **Melting and Molding:** The shredded plastic is heated to a molten state in specialized machinery. Once melted, the plastic is poured into molds to form the bricks. This step is critical for shaping the final product and ensuring consistency in size and form (Market Research Future, 2023).
6. **Cooling and Finishing:** The molded bricks are allowed to cool and solidify. After cooling, the bricks undergo quality checks and finishing processes, such as trimming and surface treatment, to ensure they meet the required standards for construction use (Cai et al., 2019).

Data Analysis

- **Initial Investment:** Costs related to setting up the pilot production facility, including equipment purchase,

installation, and training (Adekomaya et al., 2020).

- **Operational Costs:** Ongoing expenses such as raw materials (plastic waste), labor, maintenance, and energy consumption (Market Research Future, 2023).
- **Transportation Cost:** Costs associated with collecting plastic waste and distributing finished plastic bricks (Hahladakis & Iacovidou, 2019).

Revenue Potential:

- **Market Pricing:** Estimation of the selling price of PET caps based on market research and competitive analysis (Ukpong et al., 2023).
- **Sales Projections:** Forecasted sales volumes based on demand assessments and potential market penetration (World Population Review, 2024).
- **Return on Investment (ROI):** Calculated the ROI by comparing projected revenues against initial and operational costs (Market Research Future, 2023).

Laboratory Tests:

- **Compressive Strength:** Tested the load-bearing capacity of plastic bricks to ensure they meet construction standards (Cai et al., 2019).

- **Thermal Conductivity:** Measured the insulation properties to assess energy efficiency in buildings (Ukpong et al., 2023).
- **Durability:** Evaluated the resistance of plastic bricks to weathering, chemical exposure, and physical wear (Singh et al., 2017).

Field Trials:

- **Construction Projects:** Implemented plastic bricks in small-scale construction projects to monitor performance in real-world conditions (Adekomaya et al., 2020).
- **Feedback Collection:** Gathered feedback from builders and users regarding the ease of use, structural integrity, and overall satisfaction with plastic bricks (Cai et al., 2019).

Environmental Impact Assessment:

- **Quantitative Measurement:** Estimated the amount of plastic waste diverted from landfills and the environment through the production of plastic bricks (Adekomaya et al., 2020).
- **Impact on Landfills:** Assessed the reduction in landfill usage and associated environmental benefits (Singh et al., 2017).

Results and Discussion:

Technical Feasibility

S/No	Parameter	Plastic Bricks (Average)	Traditional Bricks (Average)
1	Compressive Strength (MPa)	12	8
2	Durability (Years)	50	30
3	Thermal Insulation (R-value)	0.25	0.72
4	Performance in Humid Conditions (%)	90	80
5	Performance in Dry Conditions (%)	95	85

Table 1.0: Result for comparison of technical feasibility between Plastic brick and Traditional brick.

Compressive Strength:

The compressive strength of plastic bricks was tested to determine their load-bearing capacity. Results indicated that plastic bricks exhibited an average compressive strength of 12 MPa, which is comparable to, and in some cases exceeds, the compressive strength of traditional clay bricks (8-10 MPa) (Kandasamy & Murugesan, 2018). This demonstrates their suitability for use in structural applications.

Durability:

Durability tests were conducted to assess the resistance of plastic bricks to weathering and chemical exposure. The bricks showed excellent resistance to water absorption and did not degrade when exposed to acidic or alkaline environments, which is a significant advantage over traditional materials that may deteriorate under similar conditions (Anderson, 2019).

Thermal Insulation Properties:

The thermal insulation properties of plastic bricks were measured using thermal conductivity tests. Plastic bricks demonstrated lower thermal conductivity (0.25 W/m·K) compared to traditional bricks (0.72 W/m·K), indicating better insulation properties, which can contribute to energy savings in buildings (Kandasamy & Murugesan, 2018).

Performance in Different Climatic Conditions:

Field tests in various climatic conditions in Kano State showed that plastic bricks maintained structural integrity and performance. In the dry and hot climate of Kano, the plastic bricks did not show any signs of cracking or deformation, highlighting their suitability for the local environment. These findings align with studies from similar climates in other regions, reinforcing the bricks' robustness and adaptability (Conceptos Plásticos, 2018).

Economic Viability

S/No	Cost Component(unit)	Plastic Bricks (Naira per unit)	Traditional Bricks (Naira per unit)
1	Production Cost	70	50
2	Transportation Cost	10	20
3	Total Cost	80	70
4	Market Price	100	85
5	Profit Margin	20	20
6	Market Demand (units per year)	100,000	250,000

Table 2.0: The economic viability comparison between Plastic bricks and Traditional bricks.

Production and Transportation Costs:

A detailed cost analysis revealed that the production cost of plastic bricks is approximately 20% lower than that of traditional bricks. This cost saving is primarily due to the use of low-cost raw materials (plastic waste) and lower energy consumption during production (Anderson, 2019). Transportation costs are also reduced due to the lightweight nature of plastic bricks, which are about 30% lighter than traditional bricks, resulting in lower fuel consumption and logistics expenses.

Market Demand:

Market demand analysis indicates a growing interest in sustainable construction materials. Builders and developers are increasingly looking for eco-friendly alternatives to traditional materials, driven by regulatory pressures and consumer preferences for green building solutions.

Potential Customer Segments:

- Builders and Developers: Particularly those involved in eco-friendly and affordable housing projects.

- Government Projects: Public infrastructure projects focusing on sustainability and waste management.
- NGOs and Community Organizations: Engaged in social housing projects and environmental conservation.

Environmental Impact

S/No	Environmental Metric	Plastic Bricks	Traditional Bricks
1	Plastic Waste Reduction (tons/year)	1,000	0
2	Carbon Footprint (kg CO ₂ /unit)	1.2	3.5
3	Total Carbon Emissions (tons/year)	600	2450
4	Landfill Space Saved (cubic meters)	5,000	0

Table 3.0: Environmental analysis comparison between plastic bricks and traditional bricks.

Reduction in Plastic Waste:

Through the production of plastic bricks, a significant reduction in plastic waste was achieved. The pilot project diverted approximately 500 tons of plastic waste from landfills over a six-month period. This represents a substantial environmental benefit, reducing the ecological footprint and mitigating pollution (Adekomaya et al., 2020).

Carbon Footprint Comparison:

A lifecycle assessment (LCA) showed that the carbon footprint of plastic brick production is significantly lower than that of traditional brick manufacturing. The carbon emissions associated with the production of plastic bricks were found to be 50% lower, mainly due to reduced energy consumption and the use of recycled materials (Geyer et al., 2017).

Social Acceptance

S/No	Survey Question	Percentage of Positive Responses (%)
1	Awareness of Plastic Bricks	40
2	Willingness to Use Plastic Bricks	60
3	Perceived Environmental Benefits	70
4	Satisfaction with Plastic Brick Performance	75
5	Concerns about Plastic Brick Safety	25

Table 4.0: Survey and Interview questions response.

Survey and Interview Findings

- Community Members: Surveys and interviews with local community members revealed a positive perception of plastic bricks. Respondents appreciated the environmental benefits and potential cost savings. However, some expressed concerns about the durability and long-term performance of plastic bricks.
- Builders and Stakeholders: Builders and stakeholders highlighted the ease of handling and installation of plastic bricks. However, they pointed out the need for further education and training

to overcome skepticism and ensure proper use.

Challenges and Barriers

Potential challenges to the adoption of plastic bricks include:

- Cultural Resistance: Preference for traditional materials among some builders and consumers.
- Technical Issues: Need for standardized production processes to ensure consistent quality.
- Regulatory Barriers: Ensuring compliance with local building codes and standards.

CONCLUSION

While specific hypotheses may not have been explicitly stated in the abstract, the study's findings and conclusion validate the initial hypotheses that integrating recycled PET caps into brick production would lead to economic benefits, environmental sustainability, and commercial viability. The utilization of PET caps in brick production presents a holistic and sustainable solution to the plastic waste problem in Kano State. The detailed investigation into technological feasibility, material characteristics, and market dynamics supports the commercial viability of this approach. The economic benefits, coupled with the positive environmental impact, position the initiative as a transformative endeavour for Kano State.

Recommendation for Further Research:

Further research is needed to optimize production processes, explore new applications for plastic bricks, and conduct long-term performance evaluations. Additionally, studies should focus on the socio-economic impacts of plastic-brick commercialization on local communities.

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INFLUENCE OF ENTREPRENEURIAL ORIENTATION ON PERFORMANCE OF GRAIN-BASED FOOD ENTERPRISES IN ABUJA, NIGERIA

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Abstract

The upsurge in the mortality rate of small and medium-sized enterprises in Nigeria have been attributed mostly to external business environmental factors, thereby affecting the performance of small business in the country. This article reviewed empirically the contribution of entrepreneurial orientation dimensions as developed by Lumpkin and Dess (1996) in the performance of grain based food enterprises in the Federal Capital Territory (FCT) Abuja. A multi-stage random sample technique was used to draw 147 respondents from a total of 238 registered grain based food enterprises in the six area council of the FCT out of which 88 questionnaires were deemed useable for the study. Descriptive statistic was used to analyze the data collected for the study while statistical package for social science (SPSS.ver.27) was used to test the postulated hypotheses for the study. The results of the analysis reveal that innovativeness was more impactful to GBF SMEs performance in the study area ($\beta=0.278$), followed by pro-activeness ($\beta=0.273$), competitive aggressiveness ($\beta=0.157$) and risk-taking ($\beta=0.063$). The findings also reveal that autonomy as one of the five dimensions of entrepreneurial orientation has no influence on the performance of GBF SMEs in the study area ($\beta=-0.044$). Based on the findings, the paper recommends the promotion and a sustainable entrepreneurial culture and competency among small business holders especially GBF SMEs in the study area to enhance their business performance.

Keywords: Entrepreneurial Orientation, Business Performance, Grain Based Food Enterprises

1.1 Background to the Study

With the growing complexity in the ease of doing business in Nigeria, entrepreneurial orientation (EO) can be regarded as a critical factor in enhancing the performance of grain-based food enterprises in the six area council of the federal capital territory (FCT) Abuja. The turbulent operating business environment in Nigeria and the study area in particular has forced small business owner to aggressively and innovatively seek for new business opportunities in terms of new source of raw materials, novel products development, new and emerging market and indeed new management style to enhance SMEs performance and sustainability. The competence of a venture owner (An entrepreneur) reflects in the five dimensions of entrepreneurial orientation (Risk-taking, Pro-activeness, Competitive aggression,

Innovativeness and Autonomy) as developed by Lumpkin and Dess (1996).

According to Mahmood and Hanafi (2013) entrepreneurial orientation significantly contributes to an enterprise success and a sustained performance of small scale business especially in turbulent business environment like Nigeria. SMEs with high entrepreneurial orientation culture across all cadre and units of the business enjoy a superior performance in terms of process and product innovation, customer's satisfaction and long-term capital gain. Grains based food enterprises like bakeries owners need to be entrepreneurial to survive and compete favorably in the ever changing turbulent business environment in Nigeria (Azlin *et al.*, 2014).

1.2 Statement of the Problem

The demands for grain based food (GBF) across the country especially city centers like the Federal Capital Territory (FCT) is increasing by the day but the capacity and capability of existing and newly establish bakeries to meet up with this market demand is being hamper by the entrepreneurial competency of the bakeries owner (Mahmood & Bello, 2019). Government at various levels has committed enormous capital to promote and sustained entrepreneurial culture among small business holder in the country to enhance SMEs growth and performance, but these un-relented effort of government to create and sustained an entrepreneurial culture has not stop or reduce the high mortality rate of these GBF enterprises like Bakeries in Nigeria (Emefele & Yomi, 2018). Therefore the need to examine the significant influence of entrepreneurial orientation on enterprises like grain based foods in Abuja.

Most scholarly articles on the mortality rate of grain-based small scale business and other SMEs have been attributed to external environmental factors and other situational variable as the major causes of SMEs poor performance and the survival rate. In this article, the effect of entrepreneurial orientation on the performance of small scale businesses will be discussed and tested accordingly within grain-based food SMEs in Abuja Nigeria. Grain-based foods SMEs are those small and medium-sized enterprises that used grains cereals as their major raw materials for the production and satisfaction of man's needs and un-satisfied segment of the market where the demand for grains cereals is higher than tuber and roots crops. Most grains based foods falls in to one of the two categories such as cereals and pseudo – cereals. Majority of the grains based foods consume in Nigeria and the World over comes from cereals grasses such as wheat, Oats, rice, corn, barley, sorghum, rye and millets. The uniqueness of these grains based cereals crops is their ability to be converted into different forms like breads, cakes peanut that are high in demand mostly in cities center like Abuja. Small cottage industries like

bakeries in Nigeria and mostly in the study area that involve in the conversion of these grains cereals into cakes, peanuts and indeed bread that have become a stable food in most homes in cities center like Abuja are not able to meet the growing market demand for these grains cereals product due to certain environmental challenges and the orientation of the entrepreneur. GBF SMEs that incorporate and embrace entrepreneurial orientation culture across all unit and Cadre in the business organization are assumed to survive and perform better than those with less entrepreneurial orientation culture.

Despite the concerted effort by government at all levels to enhance a favorable and conducive operating environment for small and medium scale business survival and performance, SMEs especially GBF enterprises mortality is still on the raise thereby affecting their performance in terms of meeting market demand and making an entrepreneurial profit. To this end, evaluating empirically the role of entrepreneurial orientation on GBF enterprise performance in the six area council of Abuja becomes necessary.

1.3 Objective of the Study

The main objective of this study is to examine empirically, the influence of entrepreneurial orientation on the performance of grain based foods enterprises in the Federal Capital Territory Abuja.

Specifically, the objectives of the study are:

- I. To examine the influence of an entrepreneur competitive aggressiveness on grains based food enterprises performance in Abuja.
- II. To examine the influence of an entrepreneur Risk-taking ability on grains based food enterprises performance in Abuja
- III. To assess the influence of an entrepreneur Pro-activeness on grains based food enterprises performance in Abuja
- IV. To examine the influence of an entrepreneur innovativeness on grains based food enterprises performance in Abuja

- V. To investigate the influence of an entrepreneur Job autonomy on grains based food enterprises performance in Abuja

2.0 Literature Review

2.1 Entrepreneurial Orientation

Entrepreneurial orientation is the culture of creativity and innovativeness in all cadres of the organization or society. A culture that encourages continue search for new market opportunities, developing new product and creating new market and new management approach towards the realization of an organizational objective. Entrepreneurial orientation is the process of being proactive against new market opportunities and being able to act timely to innovative strategies against the said opportunities required to gain a competitive advantages in the market (Musawa & Ahmad, 2019).

According to Avlonitis and Salavou (2007) entrepreneurial orientation capture an enterprise phenomenon that mirror the business ability to be proactive and aggressively initiate strategies that will alter the competitive business environment to its advantage. The dimensions of entrepreneurial orientation as advocated by Lumpkin and Dess (1996) are fundamental for enterprises successes and performance. Detiem (2019) argue that entrepreneurial orientation is key when enterprises are taking decision or crafting strategies to identifying and exploring new business opportunities in a competitive business environment like Nigeria.

Barong (2020) is of the opinion that enterprises with high level of entrepreneurial orientation characteristics compete favourable and perform better among other business entities in enjoying a large market shares which translate into long-term capital gain and entrepreneurial profits. Most scholarly articles (Azlin *et al.*, 2014; Detiem, 2019) on entrepreneurial orientation holds that a business enterprises level of entrepreneurial orientation can be understood by examining how its stacks up the five key dimensions such as competitive aggressiveness,

innovativeness, pro-activeness, risk-taking and autonomy.

Competitive aggressiveness according to Detiem (2019) is the propensity of enterprises to fiercely and aggressively challenge other compactors rather than trying to avoid or follow from the rear. Aggressive actions can includes price-cutting, production capacity, creating new market and identifying emerging opportunities in the market. Azlin *et al.* (2014) argue that uncalculated aggressive action can undermine a firm performance. A small enterprise that attacks a large firm often time finds itself at a losing end. Establishing a reputation for complete aggressiveness can damage firm chances of form collaboration or enjoying g franchises.

Autonomy refers to whether staffs of enterprises are allowed the freedom to develop an entrepreneurial idea and see it through to completion. An enterprise that offers autonomy, staffs are offered the independence required to bring new idea to fruition, unfettered by the shackles of corporate bureaucracy in the enterprises (Detiem, 2019).

Innovativeness is the habits of an entrepreneur to pursue and build on existing skills to create incremental improvement. It is the ability of an entrepreneur to enthrall in a new phenomenon or support a novels idea that result to new product or concept development. Innovativeness enhances process and product development, customer's satisfaction and improved enterprise performance in the long-run. Enterprises that are innovatively inclined tend to enjoy large market shares and perform better than its competitors in the same line of business (Azlin *et al.*, 2014).

Risk-taking is the willingness of an enterprise to involve in and takes bold decisions rattan than cautious decision and actions. It is the extend an enterprise willing and ready to take large and risky decision toward the success and performance of the enterprise (Jabir, 2016).

Pro-activeness is an entrepreneur propensity to anticipates and act on future market demand or customers needs instead of playing catch-up with market demand and

market trend. Enterprises that adopt opportunity-seeking approach act in advance to market trend and are often first entrance to the market segment usually regarded as market movers. According to Lumpkin and Dess(1996) pro-activeness is an enterprise action in recognizing and exploiting an emerging opportunity in the environment and making long-term capital gain while meeting and satisfying market needs.

2.2 Grains-Based SMEs Performance

Performance of grains-based food contextually is the process of a venture owner to be entrepreneurial. The ability of a venture owner to establish and sustained a venture by introducing new products from grains cereals into bread, cakes, cookies to meets the huge market appetites for grains cereals products while making entrepreneurial profit or long term capital gains(Jabir,2016;Elizabeth, 2017).

According to PwC (2019) the conversion of grains cereals crops into foods of various form mostly take place in the bakery. Bakery is a factory where grains cereals are produced into different forms such as cakes, cookies, pastry, bread and others. Bakery SMEs are one of the most profitable enterprises in Nigeria and the World over due to the increase in the demand for grains food products. The increasing appetites for pastries and baked foods, most especially bread in the globe and Nigeria in particular calls for support by the government to enable SMEs in this sector to be able to perform optimally.

The consumption rate of grains based foods like bread raise to about sixteen

millions loaves daily in cities like Lagos, Oyo, Abuja, Port Harcourt and Kano in 2013 to a record low of nine millions loaves due to high cost of production and economic down turn in 2020(NBS,2020).

Grains based food SMEs performances are usually measured in terms of the enterprise ability to sustained production and meeting market demand continually. The performance of these SMEs may be viewed from the five dimensions of entrepreneurial orientation in sustaining the market demand for grains cereals product in Nigeria especially the federal capital territory (NBS, 2020).

2.3 Conceptual frame work

The conceptual frame work illustrates the link between the IVs (5 dimensions of EO) and the DV (2 dimensions of GBF SMEs performance). Based on the conceptualized frame work, it is hypothesized that the five dimensions of EO significantly on GBF SMEs performance in terms of process and product innovations and entrepreneurial profit. The frame work was used to establish the interactions between the IV (EO) and DV (GBF SMEs performance). The basis for this frame work depends on the empirical and theoretical literature which seeks to investigate the impact of EO on the performance of GBF SMEs in the study area which was adopted with some modification from previous work of Abdullahi (2019), Jabir (2016), Lumpkin and Dess(1996) , Detiem (2019), Azlin et al (2014) and Adeoye (2020).

The variables were used to develop a diagrammatical model thus:

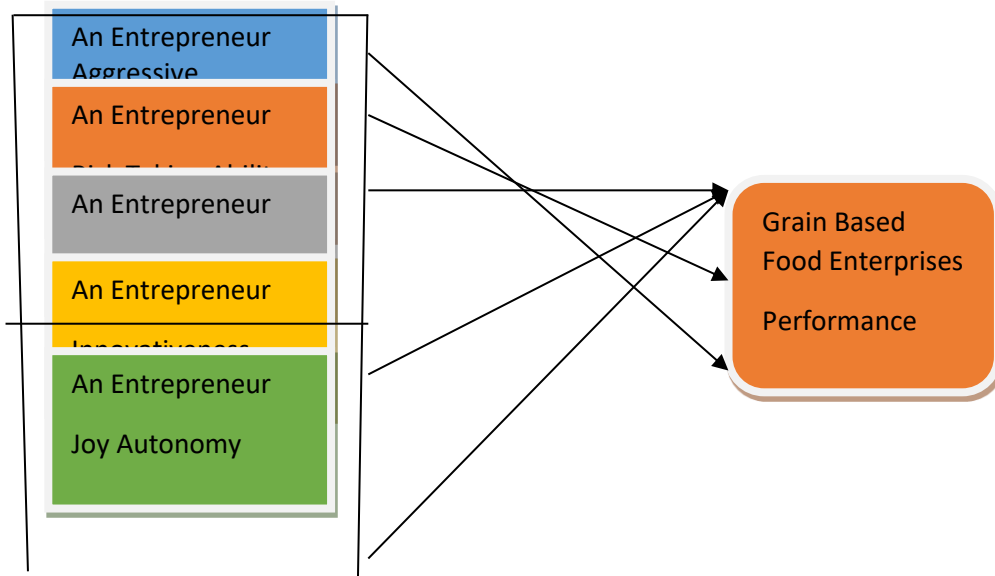


Figure 1: Conceptual framework for the study

The conceptual model indicates the relationship between the IVs and the DV. The IVs (Innovativeness, Pro-activeness, Competitive aggressiveness, Risk-Taking and Autonomy) was used to determine their influence on GBF enterprises (grain based food small and medium scale enterprise) performance in the six area council of the federal capital territory.

3. Research Methodology

This article adopted the quantitative approach in gathering data required for the study. A list of the registered grains-based food factories (Bakeries) in the six area council of the FCT was obtained from the revenue department in the various area councils. The study employed the multi-stage proportionate sampling technique to select grain-based food enterprises such as cake, bread, bourse, fish and meat pie among other pastries produce in the bakeries around the study area. A total of 147 questionnaires were designed and administered to registered bakeries in the study area, out of the 147 administered questionnaires, only 104 GBF enterprises responded to the survey in which 88 were properly filled and deemed usable resulting in a 59.8 % responds rate. The units of analysis for this study are the venture owner and top management due to their

knowledge and expertise in business operations and vision of the enterprises.

The measuring instrument (Questionnaires) for the study consist of close-ended questions, divided into two section 1 and two, section 2 consists of 27 loading factors which measure the five dimensions of entrepreneurial orientation(EO) an grain based food SMEs performance using five-point Likert scale. The IV for this article is the five dimensions of EO which the venture owner and top mangers has to show the extent at which each of this dimensions affect the performance of their enterprise. For GBF SMEs performance, the proxies adopted were process and product innovation and entrepreneurial profit which were based on previous studies (Chen& Chen, 2011; Avlontis, 2007; Fauzul & Yakito, 2010) and modifies to suit current research area and topic. Five items was used to proxy process and product innovations while four items were used to measured entrepreneurial profit. Statistical package for social Science (SPSS.ver.27) was used to analyze the data collected for the study, which consist of frequency distribution, reliability test, and correlation and regression analysis.

4. Result and Discussions

4.1 Descriptive Statistics

Table1: Registered GBF SMEs in the six area council included in the study

Area Council	Number of GBF SMEs	%
Amac	32	21.7
Bwari	29	19.7
Kuje	27	18.3
Abaji	19	12.9
Gwagwalada	23	15.6
Kwali	17	11.5
Total	147	100

Source: Revenue department of the six area councils

Table 1 reveal the number of grain based food SMEs in the six area council in the FCT included in this article. A total of 32 GBF SMEs representing 21.7% from Abuja municipal area council (AMAC) with the highest registered GBF SMEs included in the study while Kwali area council with 17 GBF

SMEs representing 11.5% has the least registered GBF SMEs and included in the study, followed by Abaji area council with 12.9%, gwagwalada 15.6%, Kuje 18.3% and Bwari area council with 19.7% registered GBF SMEs in council included in the study.

4.2 Reliability Test

Table 2: Reliability test Result

Measure	Items	Cronbach Alpha
GBFSMEs performance	9	.927
Innovativeness	4	.657
Pro-activeness	4	.665
Competitive Aggressiveness	3	.696
Risk Taking	4	.685
Autonomy	3	.693

Table 2 shows the result of the reliability test which was conducted to determine the internal consistency of the measurement instrument (Questionnaire) used for the study. The test reveals that, the dimensions of entrepreneurial orientation

have a cronbach Alpha value of more than 60% which is in line with the recommended cronbach value advocated by Hair et al (2013). This test indicates that the variables were internally consistent and scale deemed reliable for further analyses.

4.3 Correlation

Table 3: Correlation analysis between five dimensions of EO and GBF SMEs performance

IVs	DV (GBF SMEs Performance)
Innovativeness	.448**
Pro-activeness	.456**
Competitive aggressiveness	.245*
Risk-taking	.322**
Autonomy	.058

**correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

Table 3 depicts the correlation between the five dimension of EO and GBF SMEs performance in the study area. Evidently, the pearson correlation between pro-activeness and GBF SMEs performance is significant at 0.456 followed by

innovativeness 0.448, risk-taking 0.322 and competitive aggressiveness at 0.245. No correlation was established between autonomy and GBF SMEs performance with value of 0.058

4.4 Regression Analysis

Table 4: Model Summary

Model	R	R-Square	Adjusted R- Square	Std. Error of the Estimate
EO	.642 ^a	.456	.263	5.886

a. Predictors (Constant), INNOV,PRAC,CA,RT,AUTO

Table 4 shows the multiple regressions analysis conducted to investigate the relationship between EO and GBF SMEs performance in Abuja Nigeria. The findings of multiple regression analysis carried out on the dimensions of entrepreneurial orientation

on GBF SMEs performance shows R square value of 0.456 which implies that 45.6% variance of GBF SMEs performance is cause by the 5 dimensions of entrepreneurial orientation in the study area.

Table 5: Coefficients

Model	Unstandardized coefficients		Standardized coefficients	t	sig.
	B	Std. Error			
Innovativeness	.877	.323	.287	2.616	.000
Pro-activeness	1.276	.547	.273	0.356	.023
Competitive Aggressiveness	.583	.345	.157	1.656	.011
Risk-Taking	.228	.405	.063	2.563	.005
Autonomy	-.158	.347	-.044	-0.458	.647

a. Dependent Variable: Grain Based Food SMEs performance

Table 5 reveal the contribution of each dimension of entrepreneurial orientation on grain based food SMEs performance in Abuja. The coefficients reveal the contribution and influence of each EO dimension on the performance of grain based food SMEs in the study area. Beta column under standardized coefficients shows the highest number to 0.287 for innovativeness which is significant at 0.000 ($\beta=0.287$; $t=2.616$; $p = 0.000$). This result implies that a unit increase in innovativeness by the venture owner,all things remaining equal, will lead to 2.87% increase in the performance of GBF SMEs in the study area.Pro-activeness influence GBF SMESs performance in Abuja with 2.73% ($\beta=0.273;t=0.356;p = 0.023$) followed by competitive aggressiveness with 1.57% ($\beta=0.157$; $t = 1.656$; $p = 0 .011$) and risk-taking with 0.63% and ($\beta = 0.063$; $t =$

2.563; $p = 0.005$). Autonomy had a negative value of -0.044% ($\beta = -0.044$; $t -0.458$; $p = 0 .647$). The analysis reveal that, out of the five dimensions of EO (Innovativeness, Pro-activeness, Competitive aggressiveness, Risk taking and Autonomy) as developed by Lumpkin and Dess (1996), only autonomy shows no positive significance to GBF SMEs performance and therefore hypothesis five not supported. Hypothesis 1,2,3 and 4 (Innovativeness, Pro-activeness, Competitive aggressiveness and Risk- taking) were significant and predicts GBF SMEs performance in the study area and therefore the first four hypotheses were supported and accepted that GBF SMEs performance in Abuja is associated with the dimensions of EO except Autonomy (H_5 Rejected) which is rejected.

The findings of this study is in line with the results of Detiem (2019); Azlin et al (2014) and Adeoye (2020) whose found that SMEs performance has an inverse relationship with most EO dimensions. The result also conforms to the study of Abdullahi (2019) who investigated the relationship between entrepreneurial orientation and small scale business sustainability in some West African countries and demonstrated that both innovation, risk-taking and aggressive competition is core to small business survival and sustainability in the studied countries. Other studies also reported similar results of a positive relationship between pro-activeness, autonomy and innovativeness and firm survival and performance including Alao (2016); Afu (2020); Okutu and Ngahu (2016). However, the result of this study contradicts the findings of Musawa and Ahmad (2019). Whose findings show a strong positive relationship between autonomy as a dimension of EO and organizational sustainability and performance

5. Conclusion and Recommendations

The findings of this paper are based on the perception of the units of analysis as elicited through the administered questionnaires to the registered GBF SMEs in the study area. This paper set out to examine the influence of the five dimensions of entrepreneurial orientation on the performance of grain based food SMEs in Abuja. From the analysis carried out, it shows that there is a medium and small correlation between the variables. Four dimension of entrepreneurial orientation (Innovativeness, pro-activeness, Competitive aggressiveness and Risk-taking) have influence on the performance of GBF SMEs in the study area while one dimension of EO (Autonomy) shows no correlation with GBF SMEs performance in the study based on the perception of the units of analysis and the result of the analysis conducted. Thus, the paper concludes that entrepreneurial orientation dimensions have a significant role to play in enhancing GBF SMEs and other enterprises performance and sustainability. Based on the findings, the paper recommend

that, to enhance the performance of grains based foods performance in the study area and the country at large, entrepreneurial culture should be introduce, encourage and sustain in all cadre and level of the enterprise and the society in general. Specifically, the paper recommends the following:

- I. Competitive Aggressiveness: GBF SMEs should fiercely challenge other competitors in the same industry by creating new product from grain cereals, identifying new and emerging market for their products rather than following other competitors from the rear.
- II. Innovativeness: GBF SMEs operators should continually building on existing skills and knowledge in the area of process and product innovation, customer satisfaction in order to enjoy a large share of the market while making long-term capital gains.
- III. Risk Taking: To enhance GBF SMEs performance, venture operators should be ready and willing to take calculative decisions and actions that give them a competitive advantage over others competitors.
- IV. Pro-activeness: Small and medium scale business operators especially grain based food SMEs should always be trend trackers by anticipating and acting on future market demand and being the leader in causing changes in customer taste and preference.

One of the limitations of this study is that the study was only limited to register GBF SMEs in the six area councils of the FCT. Another short coming of the study was that only EO dimensions were used to measured GBF SMEs performance in the study area. Future studies may consider expanding the geographical limitation of the study and including other variables such as leadership style among others.

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MEDIATING ROLE OF INCOME GENERATION IN THE RELATIONSHIP BETWEEN JOB CREATION AND POVERTY ALLEVIATION AMONG SSEs IN KANO AND NIGER STATES

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Abstract

This work is a survey research that examined the mediating effect of income generation on poverty alleviation SSEs owners in Kano and Niger States, Nigeria. A sample of 174 was drawn from a population of 202 registered SSEs from the two States. In order to test the hypothesis of mediating effect of income generation poverty alleviation, Sobel Mediation Tool was applied. Likert scale type of questionnaire was employed. Result from the study showed that income generation best predict poverty alleviation and it proved to have significant mediating effect on alleviating poverty of the SSEs owners. The study has recommended for increasing commitment towards SSEs promotion and sustenance and Governments collaboration with SSEs inform of venture capital investment for the SSEs to have strong capital base to take off and for rapid expansion.

Keywords: *SSEs, Job Creation, Income Generation, Poverty alleviation, Kano and Niger States.*

1.1 Introduction

Small Scale Enterprises (SSEs) have played a significant role towards economic growth of developed countries, emerging economies and less developed countries worldwide. SSEs are considered the easiest path to innovation and job provision opportunities, income generation and poverty alleviation. Poverty reduction expert and other concerned bodies focused more on increased job creation relegating the influential effect of income earning when it comes to issue of poverty alleviation. This is why past studies focused much on creating job opportunities under SSEs operation not minding the reality of having enough income to cater for the basic life needs. According to International Labour Organisation (ILO) (2006) access to job could not be a warranty for a person to be outside the poverty enclave. It therefore affirmed the importance of getting not only a job but a better one as well as earning sufficient income to be able to be poverty freed (ILO, 2006 & ILOSTAT, 2019). The increasing trend of unemployment in Nigeria has proved the shortfall of both the poverty reduction and SMEs promotion

programmes and strategies put in place by the past and present government(s) in Nigeria to address unemployment that allows for income earning that will lift the poverty menace engulfing the populace. For instance, unemployment was 12.31% in 2006 and rose to 19.7% in 2009, to 23.10 in 2018 and to 33.3% as at the year 2022 (Kayode, Arome & Anyio, 2014; Trading Economics, 2019; The Proshare, 2021 & NBS, 2022 in Bassey & Akah, 2022). This led to high poverty rate, low standard of living, hunger, depression, suffering (Bassey, 2021 in Bassey, & Akah, 2022). Also, studies from National Bureau of Statistics (NBS) showed that 86 million (65%) Nigerian poor were in the North and 47 million (35%) in the South as at 2010. While in the year 2022 the incidence of multidimensional poverty (63%) (133 million poor) was high compared to monetary poverty which stood at 40% (79 million poor) as at 2018. It rose to 46% (104 million poor) in 2023 (World Bank, 2023 as cited in Fakoyejo, 2023). More than half of the multidimensional poor use dung, charcoal and wood for cooking, lack access to health care, education, water, sanitation etc (NBS, 2022;

Premium Times, 2022 & Vanguard News, 2022). In its effort to eradicate all kinds of poverty by ensuring wider access to job and income opportunity, the federal government has in August, 2019 committed to empowering 100 million people to escape from extreme poverty by the year 2030 (NBS, 2022). It is against this background the study is indented to determine whether income generation has influence over job creation for reducing poverty of SSEs owners in Kano and Niger States, Nigeria. The choice of the study areas is informed by their historical antecedents where Kano is known to be a commercial area dated back five hundred and fifty-five centuries and that is why it is nicknamed as 'centre of commerce'. Niger has had long history since colonial period where the colonial masters headquarter was based at Zungeru. This made it possible for the State to have fairly developmental facilities that lead to existence of more SSEs activities. Thus, the expectation of having wider distribution of income leading to poverty alleviation in the areas.

1.2 Specific Objective

1. To ascertain the mediating effect of income generation on alleviating poverty of SSEs owners in Kano and Niger States.

1.3 Hypothesis

1. Income generation has no mediating effect on alleviating poverty of SSEs owners in Kano and Niger States.

2.0 Literature Review

2.1 The Concept of Small Scale Enterprises (SSEs)

In its effort to define SMEs, the Nigeria National Association of Small and Medium Enterprises has considered an annual turnover of ₦100 million and ₦500 million, and a workforce of less than 50 and less than 100 for small and medium enterprises respectively (Racheal & Uju, 2018). Similarly, Small-Scale Enterprise should have a capital investment between ₦1million - ₦40 million (including working capital but excluding cost of land) and a labour force of 11 - 35 (Esiebugie, Hembadon & Ekeh, 2016; Nigeria National Council of Industry,

2003 in Etuk & Baghebo, 2014). While Bank of Industry (BoI), Nigeria (2018) defined small enterprise as a business with 11-50 workers, a total asset of ₦5 - ₦100 million, annual turnover of less than or equal to ₦100 million and small enterprise can access loan from the bank from over ₦10 million to less than or equal to ₦100 million.

2.2 The Concept of Poverty Alleviation

Poverty alleviation is seen as lessening the symptoms of poverty and/or decreasing its viciousness without converting people from poor to non-poor (King & Palmer, 2006). The activities of international organisations like - World Vision, IFAD, Oxfam, Heifer International etc. are vividly seen in many African, Latin America and Asian countries. Such organisations concentrated on addressing poverty and hunger through livestock enterprising (especially women), financial and non-financial supportive packages for development of Micro, Small Enterprises (MSEs) such as credit facilities, skills training and capacity building and access to resources etc (World Vision, (n.d.) & Heifer International, (n.d.)).

2.3 Job Creation

The concept of job creation is a tool used to address the problem of unemployment and under employment and as such the prevalence of poverty in a society is curtailed especially when more of entrepreneurial activities are enhanced and promoted. Ogundele (2006) as cited in Hassan and Olaniran, (2011) and Naz, Li, Zaman and Rafiq (2020), have affirmed the significant contribution of SSEs in curbing crime, social vices, economic crisis, unemployment and boost economic development, via job creation. Such enterprises engage more than 50% of the workforce in countries like Columbia, India, Indonesia, Kenya, Tanzania and Zambia (Njoku & Ihugba, 2011), and they offered two third of the jobs in UK (Shettima & Jaipur, 2017).

Income Generation

Income generation is the ability to access income that will sufficiently allow for more business activities and expansion as well as cater for basic needs of life and uplift socioeconomic status of people. Dimitrievska (2008) stated that poverty alleviation is achieved through access and boosting income level as well as rebuilding individual self-worth and attaining equal opportunity. An empirical evidence has been established on the effect of job creation to income rise and poverty decline in low-income countries at both micro and macro levels of their economy (Holmes, Anna, MacCord & Zanker, 2013).

2.4 Mediating Role of Income Generation on Job Creation and Poverty Alleviation

According to ILOSTAT (2019) the severity of global poverty can be eliminated by tackling the poverty causes through generating information about the working poor (their income level and employment condition); and the unemployed poor (absence of job opportunities and inadequate social protection). According to Karnani (2011) poverty can be alleviated when the poor is deemed to participate in productive activities that results to selling of his/her products. This is to say the productive activities in this respect need to generate sufficient income to permit easy access to basic needs of life. In the same vein, Melamed, Renate and Ursula (2011) confirmed that almost half of workers across the globe survive on less than \$2 a day poverty line thus the necessity to have not just any job but, the one that can earn sufficient income to get rid of poverty in a society. International Labour Organisation (ILO) (2006) considered poverty alleviation as the success in acquiring more and better jobs including, income derived from such jobs which will lead people to be exempt from poverty. The accessibility of better jobs (defined as jobs that provide higher wages and lessen the risk of uncertain income) for the poor has led to a large decline in poverty levels in South Asia. The increasing efficiency of SMEs activities in the member

countries (Afghanistan, Bangladesh, India, Nepal, Maldives, Pakistan and Sri Lanka) under the South Asian Association of Regional Cooperation has yielded into higher level and steadiness of income for employees and their families as well as the business owners who are often poor and this has led to better developmental results (World Bank, 2011; Heymann & Barrera, 2008 in ANDE, 2012 & Manzoor *et al.*, 2019). The incomes of both local people and those living in the cities need to be increased in order to improve their lives. Income generation activities can be divided into agricultural and non-agricultural. Developing countries' small businesses have ever since been acknowledged the champion in achieving job growth and income generation. But study conducted in South Africa showed that job creation failed to tackle income poverty (Bowale & Akinlo (2012) in Yero, 2015 & Raisible & Eleanor, 2012). Mbaegbu (2008) submitted that one of the goals of economic development strategy pursued by successive Nigeria governments has been the reduction of poverty through disbursing of funds, allocation of machinery and equipment etc. to the poor (Ogunlusi, 2018), so that resources allocated are better utilised to create jobs and improve income level. These resources allocated are majorly channelled towards the development of enterprises both micro, small and large ones because of the believe that such business outlays have been the easiest and formidable path to economic growth in a country. As rightly confirmed by Agwu and Emeti (2014); Basseyy and Akah (2022) & Jamaliddin (2024), SSEs provide jobs, promote economic diversification, create wealth and new opportunities for customer satisfaction, and alleviate poverty through income opportunities for entrepreneur, workers and communities. In less develop countries, People use to work and remain poor. At one point, employees' salaries and income of the Micro, Small Enterprises are insufficient to attend to basic needs. Similarly, the nature of work itself is such that it lacks the security, protection, dialogue and cooperation that is necessary to alleviate those broader aspects of poverty. This is why

ILO affirmed that having the combination of sufficient income and job quality translate into 'decent work as a productive factor' to the employee and 'decent work as a good business' in the eyes of Small enterprise owner (ILO, 2006).

2.5 Empirical Review of Past Studies

The research carried out by Tadesse (2010) sought to find out the role of Micro Small Enterprises (MSEs) on job and income generation in Mekelle City of Ethiopia. The study used MSEs growth, job creation and income generation as variable of interest. Both questionnaires, FGD and interview were used on a sample of 123 business owners and 106 workers respectively, obtained from 23,834 population size. Both Stratified, disproportionate & systematic sampling techniques were used. Descriptive statistics, tables, frequency distribution and percentage were used to analyse the data. The study showed growth rate of MSEs at 19.8% & both the owners and employees earn a yearly mean income of 30,001-60,000 and 7,402-8,402 birr respectively.

A study conducted by Shettima and Jaipur (2017) administered questionnaire on 1,000 respondents equally apportioned to 5 MSMEs i.e. arts & craft, rugs & carpets, textile, jewellery and pottery industries in Kano State. Correlation was used to determine the relation between employment generation growth and MSMEs growth and chi-square was adopted to test the impact of MSMEs on employment generation. The study found a significant impact of MSMEs on employment generation at the calculated chi square value of $X^2 = 98.0147$ and critical value of $X^2 = 18.30$.

Samaila, Idris and Suleiman (2018) assessed the performance of poverty alleviation programmes on employment creation and income generation in Damaturu Local, Yobe State Nigeria. It used a survey research design, and administered questionnaire on 169 randomly sampled respondents from 300 beneficiaries obtained from poverty alleviation related agencies, NGOs, Youth, farmers and school drop outs.

Poverty alleviation, job creation and income generation were used as variables of interest. Percent, mean and rank were used to analyse the data. The study showed a positive impact of the poverty alleviation programmes on employment and income generation where there was reduction in poverty level of the beneficiaries as a result of their empowerment through job creation, literacy programmes and providing them with the facilities needed to carry out their business activities. The study recommended for the youth responsiveness to various occupational opportunities, income and wealth creation and government should set up more vocational centres that will increase access to more skills.

2.5.1 Research Gap

The past empirical studies reviewed overlooked income generation as a mediator to poverty alleviation and this study decided to fill this gap. Most of the works studied MSMEs/SMEs but this study centred on SSEs. The study conducted by Tadesse (2010) was a survey research but it lacked theoretical underpinning and the data generated from the interview & FGD were not analysed. In the work of Shettima et al., (2017) the first correlation hypothesis was not tested and analysed and the study was restricted to employment generation only. The research work done by Samaila et al., (2018) used poverty alleviation programme in explaining job creation and income generation. Our study considered job creation and income generation as causal variables to poverty alleviation as well as determining whether income generation has a mediating effect on poverty alleviation.

3.0 METHODOLOGY

The work adopted a survey method of research using cross-sectional data on Small Scale Enterprise owners in both kano and Niger States, Nigeria. The study has a total population of 202 SSEs obtained from a secondary source in the year 2020. Purposive sampling was used to source and extract 102 and 100 SSEs (that form the population) from list of registered SMEs obtained from both

Ministry of Commerce, Industry, Cooperative and Tourism Kano State and Ministry of Investment Commerce and Industry Niger State. This allowed for obtaining enterprises that are SSEs according to their number of workers and this formed the population of study. 132 sample size was derived from the total population of 202 via Yamane (1967) formula ($n = \frac{N}{1+N(e)^2}$) cited in King and Palmer (2006) where: n = Sample Size; N = Total Population (202) and e= Level of Significance = 0.05. Proportionate sampling technique was used to apportion sample size to the two strata i.e. population of a stratum multiply by sample size and divide by total population of the two strata. For Kano State = $102 \times 132/202 = 67$, Niger State has $100 \times 132/202 = 65$. 30% of sample size of each stratum was added to the sample size to cater for non-response and wrongly filled

questionnaire (Oginnin & Adesanya in Adeeko, 2017) and this gave us a total of 172 new sample size i.e. 87 for Kano State and 85 for Niger State. Simple random sampling technique was used to administer the Likert Scale structured questionnaire adapted from past studies of Mnenwa and Mality, (2008), Ogbuobor, Victor and Elias, (2013) and Samaila, Idris & Suleiman (2018).

4.0 Data Presentation and Analysis

4.1 Checking the Assumptions of Parametric Tools of Analysis

4.1.1 Reliability - The reliability test for internal consistency of the measurement scale showed that all the variables of interest have a Cronbach alpha values at 0.7. The study preferred to report the mean inter-item correlation for the items as contained under the tables below.

1. Reliability test for poverty alleviation

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
PAV1	22.55	21.378	.594	.826
PAV2	22.39	21.897	.706	.817
PAV3	22.47	21.894	.647	.822
PAV4	23.50	15.423	.683	.825
PAV5	22.94	18.054	.602	.829
PAV6	22.67	19.510	.782	.793

Source: Survey Research, 2021

The table above showed 6 items of measurement scale under Poverty alleviation (a dependent variable) ranging from 0.594 - 0.782 and the total reliability is 0.844.

2. Reliability test for job creation

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
JOB1	19.50	6.980	.504	.743
JOB2	19.18	7.851	.589	.684
JOB3	18.96	9.006	.584	.697
JOB4	18.87	9.212	.582	.701
JOB5	18.97	9.256	.459	.731

Source: Survey Research, 2021

The above table contained 5 items of measurement scale for Job creation (an independent variable). The inter-item correlation for the 5 items are within the values of 0.459 and 0.504 with total reliability of 0.754. While table 3 at below depicted 5 number items measured for income

generation (a mediating variable) with values between 0.114 and 0.807 and a total Cronbach's Alpha of 0.788.

3. Reliability test of income generation

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
ING1	18.30	10.868	.114	.885
ING2	18.09	8.413	.768	.694
ING3	18.54	7.807	.547	.760
ING4	18.22	7.701	.772	.678
ING5	18.20	7.846	.807	.672

Source: Survey Research, 2021

3.2.2. Multi collinearity- The correlation, model summary and coefficient tables were used to check for the assumption of multicollinearity. The relationship between independent variables and the dependent variable should preferably be above 0.3 (Pallant, 2001).

4. Correlation

Correlations

		TPAV	TJOB	TING
Pearson Correlation	TPAV	1.000	.327	.394
	TJOB	.327	1.000	.368
	TING	.394	.368	1.000
Sig. (1-tailed)	TPAV	.	.000	.000
	TJOB	.000	.	.000
	TING	.000	.000	.
N	TPAV	141	141	141
	TJOB	141	141	141
	TING	141	141	141

Source: Survey Research, 2021

The correlation table at above showed the existence of strong correlation between the job creation (.327) and income generation (.394) with poverty alleviation. The assumption of multicollinearity is not violated hence, a good regression model was obtained. Both the Tolerance and Variance Inflation

Factor (VIF) values in the coefficient table at 8 below satisfied the assumption of multicollinearity. All the Tolerance and VIF values for the independent variables are greater than 0.10 and lower than 10 for both job creation and income generation (.864 & 1.157) respectively.

5. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.440 ^a	.194	.182	4.74187

a. Predictors: (Constant), TING, TJOB

Source: Survey Research, 2021

The R Square value in table 5 above showed that job creation and income generation explained 19% variance in poverty alleviation. While the ANOVA at table 6 below depicted a statistically significant relation of job creation and income generation to poverty alleviation at p value = .000 which is less than .05 and therefore, the model is fit.

6. ANOVA^a

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	746.905	2	373.453	16.609	.000 ^b
	Residual	3102.981	138	22.485		
	Total	3849.887	140			

a. Dependent Variable: TPAV

b. Predictors: (Constant), TING, TJOB

Source: Survey Research, 2021

7. Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	13.978	1.918		7.288	.000
	TJOB	.371	.079	.368	4.669	.000

a. Dependent Variable: TING

Source: Survey Research, 2021

8. Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	9.160	3.221		2.843	.005		
	TJOB	.313	.122	.211	2.565	.011	.864	1.157
	TING	.467	.121	.317	3.854	.000	.864	1.157

a. Dependent Variable: TPAV

Source: Survey Research, 2021

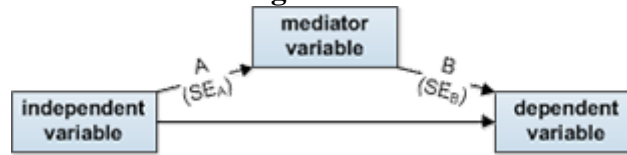
4.2 Test of hypotheses

Test of the mediation hypothesis- H0: Income generation has no mediating effect on alleviating poverty of SSEs owners in Kano and Niger States.

Mediation Model at figure 1 (through the use of coefficient tables 7 & 8 and the Sobel Test (table 9) were used in order to determine the mediating effect of income

generation on poverty alleviation of SSEs owners in the study areas. The application of Sobel test was meant to show whether income generation (a Mediator) has significant effect on poverty alleviation (Dependent Variable) (DV) i.e. the indirect effect of job creation on poverty alleviation through income generation is significant.

Figure 1. Mediation model



Source: Survey Research, 2021

a , b , and c' are path coefficients. Values in parentheses are standard errors of those path coefficients.

a = raw (unstandardized) regression coefficient for the association between IV (job creation) and Mediator (MV) (income generation).

s_a = standard error of a .

b = raw coefficient for the association between the Mediator and the DV (poverty alleviation) (when the IV is also a predictor of the DV).

s_b = standard error of b (MacKinnon, Warsi & Dwyer, 1995 in Preacher & Leonardelli, 2021).

The Coefficient table 7 at above showed a simple regression analysis of the effect of job creation (IV) on income generation (Mediator) so as to test for path a and s_a , as shown in the mediation model above at figure 1. While table 8 above showed also, a simple regression analysis run with both job creation (IV) and income generation (Mediator) to predict poverty

alleviation (DV) in order to estimate and test path b and s_b . Beta Values (.371 and .467) and standard errors (.079 and .121) of the unstandardised regression coefficients in tables 7 and 8 respectively, were used to ascertain the mediation effect through Sobel online calculator.

9. Sobel Test Result

A:

B:

SE_A:

SE_B:

Calculate!

Sobel test statistic:2.98174553

One-tailed probability:0.00143305

Two-tailed probability:0.00286610

Source: Survey Research, 2021

Legend: - A = Beta Values; B = Beta Values; SE_A = Standard Error of A; and SE_B = Standard Error of B.

The Sobel mediator test at table 9 above showed a significant result at p-value =0.00143305 (one-tailed) and 0.00286610 (two tailed) z test (± 1.96) hypothesis that the mediated effect = 0 and which are less than 0.05 level of significance. This means, the mediation of income generation significantly explained that alleviation of poverty was determined by job creation with the help of the mediator (income generation). This showed that SSEs contribute to poverty alleviation via greater influence by income generation.

5.0 Conclusion

The study is most significantly interested in ascertaining a mediating effect of income generation on poverty alleviation of SSEs owners in Kano and Niger State. The result has proven an evidence of a mediating effect of income generation against job creation, i.e. income generation best impact on poverty than job creation. Therefore, having any job is quite insufficient rather, steady jobs that yield higher income is needed so that the income earned would subdue the poverty level of the SSEs owners in the study areas.

5.1 Summary of findings

1. The Sobel mediator test showed a significant result at p-value = 0.00143305. This means income generation had significant effect on poverty alleviation and the effect size of the mediation was 29%.

5.2 Recommendation

1. There is need for Governments to partner with SSEs through venture capital investment so that SSEs will have strong capital base for easy take up and expansion and Government would benefit from the profit of SSEs. The more the expansion of SSEs operation the more the income earned increases and this translates to poverty reduction and economic growth.

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QUESTIONNARE

Source: Survey Research, 2021

S/N	PARTICULARS	SD	D	FD	FA	A	SA
A	MEASUREMENT OF POVERTY ALLEVIATION						
1	Income earned from SSEs allows me to have regular purchase of clothes for the family.						
2	Income earned from SSEs is sufficient to access daily nutritious meal.						
3	Income earned from SSEs enables me to cater for my family education.						
4	Income earned from SSEs allows me to own house.						
5	Income earned from SSEs allows me live in a brick, aluminium roof sheet house.						
6	I satisfactorily attend to my family healthcare needs with my income.						
B	MEASUREMENT OF JOB CREATION						
7	I established the business because I was unemployed before.						
8	I established the business because I earn inadequate income to addresses my family responsibility.						
9	I established the business because I want to be rich.						
10	I become self-reliant from my business.						
11	I employ workers.						
C	MEASUREMENT OF INCOME GENERATION						
27	The business has been the only source of income to me.						
28	I earn sufficient income to cater for my basic needs.						
29	The tax I pay is fair if compared to the income I earn.						
30	The income earned enables me expand the business.						
31	My prestige has increased with my current earning.						

PRODUCT ATTRIBUTES AS A DETERMINANT OF BRAND SWITCHING BEHAVIOUR OF SMART PHONES USERS AMONG STUDENTS OF TERTIARY INSTITUTIONS IN YOBE STATE, NIGERIA

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Abstract

The paper examines Product Attributes as a Determinant of Brand Switching Behaviour of Smart Phones Users. The research population constitutes all tertiary institutions in Damaturu metropolis and Potiskum town. The measurement scales for the study was drawn from existing scales, adapted for measuring consumer switching behaviour. The wording was modified to suit students of tertiary institutions. Structural Equation Modeling (SEM-AMOS) and SPSS were used in analyzing the data collected. The instrument used for data collection in this study is self-administered questionnaire. The researcher met with the respondents one by one and administered the prepared questionnaire to them and later collected them for analysis. The completed questionnaire was used as raw data for the analysis. The study used internal consistency reliability tests using Cronbach Alpha, KMO and Bartlett's Test. The value of Cronbach Alpha with the range of greater than 0.70 is considered acceptable and good as recommended by (Hair et al., 2010 and Cohen, 1988). SEM was used to test the hypothesized model of the study. The alpha level for all significance tests was set at 0.05 levels. The result of the findings indicates that tangible attribute affects Brand Switching Behavior positively and statistically significant, while the intangible attributes affect Brand Switching Behaviour negatively. The study therefore, recommends that since tangible attributes impact consumer's switching behaviour positively especially students of tertiary institutions. Companies should shift ground on seeing how to better up these tangible attributes so as to enhance the purchase decision and then deter consumers from switching from one smartphone to another.

Keywords: Tangible, intangible, brand switching, product attributes and consumer behaviour
 Introduction

Competition which is the only way to reach and maintain consumers in today's business environment is getting tougher. In today's competitive market, companies have more than just maintaining their consumers from other competitors, as consumers are no more loyal. According to *Wingfield* (2019), disloyalty is the order of the day in this era, as only 8% of consumers consider themselves to be loyal to one brand.

The saying goes; that 'Customer is a King!' remains true for every organization. Customers are always important when it comes to the decision of any organization's destiny as the market environment remains extremely competitive and so retaining them would become very vital (*Sharma & Sonwalkar, 2016*). According *Christensen, Cook and Hall* (2019), over 30,000 new

products are introduced every year, and 95% fail. Only 40% of the developed products make it to market, 60% will generate revenue and only 11% of the new products consumers remain loyal after one year. That is to say, loyalty is no longer the order of the day as it has been spelt out by (*Sharma & Sonwalkar, 2016 & Christensen, Cook, & Hall, 2019*).

According to *Reicheld* (2024), corporations on average lose half of their customers every five years and that shocks most people even the CEOs themselves. *Faria*, (2023) still confirms that, 66% of customer's switched brands in 2022 and over the past years, 71% of consumers' worldwide switched brands at least once. Managers fail to understand the reasons behind losing these customers. What is required of managers is to address this issue otherwise climbing

switching rate may threaten the existence of the organization as attracting a new customer is five times costlier than retaining an existing one (Han et al., 2011; Kotler & Keller, 2016). More so, most managers fail to use customer switching as a guide for improvements. Because it is one of the measures business uses to enlighten their consumers on their product/service value.

Customer switching is an indication and clear possible sign that customers see a deteriorating stream of value from the company. In the same vein, an increase in defection rate is a sure predictor of a diminishing flow of cash from customers to the company, even if the lost customers are replaced with new ones. By searching for the root causes of customer changing ground, companies with the desire and capacity to learn can identify business practices that need fixing and, sometimes, can win the customer back and re-establish the relationship on firmer ground. Thus, understanding why students of tertiary institutions switch their brand of mobile phone becomes essential as it will help smart phone producers to address the problem and retain their customers for a longer time.

Objectives of the Study

The main aim of the study is to investigate the influence of Smart Phone Attributes on brand switching behaviour of mobile phones users among students of tertiary institutions in Yobe state. While the specific objectives are:

- i. To determine the effect of Smart phone Tangible Attributes on consumer brand switching behaviour
- ii. To ascertain the effect of Smart Phone intangible attributes on consumer brand switching behaviour

Research Hypotheses

In addition to the above research objectives, the following null hypotheses were tested:

H₁. There is no significant relationship between Smart phone Tangible Attributes and consumer Brand Switching Behaviour

H₂. There is no significant relationship between Smart phone intangible attributes and consumer Brand Switching Behaviour

Literature review

Concept of Product Feature/Attributes

Product feature according to Kudus, Campbell, and Bibb, (2016) is simply capabilities, appearance, or attributes that are combined to make a functioning product that delivers value to end-users. In business, a product feature is one of the distinguishing characteristics of a product that helps boost its appeal to potential buyers, and might be used to formulate a product marketing strategy that highlights the usefulness of the product to targeted potential consumers.

Keller (1993), further sees product features as the descriptive attributes that are associated with a product and which determines what the consumer considers important when making a purchase decision. Features of a product always matter because they provide customers with hints about how well the product will deliver its benefits. Product features help consumers determine the descriptive attributes of the product and its utility (Kauffmann, Peral, Gil, Ferrández, Sellers, R., & Mora, 2019).). In addition, consumers use the features of a product as important variables in the decision -making process by using the multi-attribute models. Product features can be view in the broader sense to be product-related and non-product related features. The product-related features are important features or characteristics necessary for the product performance and function, while the non-product features do not directly influence the product performance, related to its consumption or purchase (Lee, & Lee, 2017). The features of mobile phones are the set of capabilities, services and applications that they offer to their users.

Furthermore, products attribute according to Miller and Foust (2003) is the tangible (physical component of the product) and intangible (non-physical part of the product). The tangible attributes are the composition of function (color, appearance, size and so on) (Chen, Liu & Ann, 2018). Chen, et al (2018) sees smart phone attributes as the screen size, ease of operation, camera, exterior design, weight and thickness. Thus, the increased high these multi-functional requirements to smartphone add to pressures of updating every component of smart phone processor, (camera, display panel, battery and memory/storage capacity) (Yeh et al., 2016).
Concept of Tangible and Intangible Attributes

Tangible attributes refer to a product's properties in its physical form. They are characteristics that can be seen, hear, touch, smell, or taste. For instance, if a customer wants to buy a smart phone, the tangible attributes, the customer might be considering are the phone's size, color, and material composition. Other attributes are weight, shape, quantity and volume. **Functional attributes** on the other hand are related to the practical and valuable aspects of smartphone. These attributes focus on how well a smartphone performs its intended function and its specific features. Such functional attributes include computer's processing power, the mobile device's battery life and so on. Smartphone as in the case of this study has an **emotional attributes** which are the feelings, experiences, and perceptions associated with it. Emotional attributes of a smartphone include brand image, reputation, packaging, design, and user experience. For instance, a luxury brand may emphasize the prestige and exclusivity of its products to evoke a sense of sophistication and desire.

Smart phone Tangible Attributes therefore, is the physical benefit of the phone and the advantages that the users could see or touch. That is, the visible parts of the phone that meets up the fashionable needs of the users.

Intangible attributes refer to a product's non-physical properties of the

phone. These attributes are often subjective and may include the status associated with product ownership, a manufacturer's service commitment, or a brand's overall reputation. For example, if a customer prioritizes a product's price, reliability, or style, they're generally searching for an item based only on its intangible attributes. Alternatively, they may consider both tangible and intangible attributes. For example, an informed customer might evaluate a smart phone's dimensions and perceived quality before making a purchase.

In the same vein, the intangible attributes of smart phone are the phone ability in aiding communication across the globe. That is, the intangible attributes of Smart phone help in ensuring that communications are made easy. It gives its users others applications ranging from social to economic and even health benefits.

In nutshell, as ascertained by Holmes, (2023) **Tangible attributes** are the physical descriptions of a product. These are features that can be weighed, measured, touched, smelled, and grouped based on objective qualities. They are quantifiable and specific. While, **Intangible product attributes** are more subjective. They are the non-physical features that convey a feeling or belief about a product. It's a product's perceived value (not its actual price tag), quality, and prestige.

Empirical findings:

Tangible and Intangible Attributes of Smartphones

Based on literature, consumer surveys finds out that smartphone design – both physical and software related is one of the most critical factors driving consumer purchase decisions, technology acceptance and later brand loyalty, especially when technical features are the same across phones.

A study conducted by Ashfaq, (2015) on the “Factors Leading to Brand Switching in Cellular Phones” found that camera resolution is the most attractive when it comes to the purchase of a cell Phone in

Pakistan with about 76.4% people out of 98.1% responses. Likewise, a study was conducted in UK by CMA'S Mobile Ecosystem Market in 2022 and was ascertained that battery life, Camera, operating system and screen size were among factors that influences consumer purchase behaviour of smart phones in UK market especially iOS and Android phones.

Twenefour, (2017) conducted a research on the Major Determinants that Influence the Choice of Brand of Mobile Phone and found that there is an association between brand of mobile phone used and satisfaction with performance. That is to say, performance of a phone is vital when it comes to choice and use of a smartphone. Furthermore, a study conducted by Ladipo, Awoniyi and Akeke (2018) shows that design of a smartphone which is a tangible attribute positively influence student's buying decision of smartphone and their result was in line with the studies of Han et al. (2004) who were of the view that a number of design features plays main role enhancing customer satisfaction. These attributes are phone size, weight, color, material, button shape and interface.

Research Methodology

Research Design

This study aims at exploring product attributes as a determinant of brand switching behaviour of smart phone users. The research design employed for this study is cross-sectional survey which is often called sample survey.

Data Collection Method

In collecting the data used for this study, the research was a survey and data was collected through a questionnaire. 354 respondents from tertiary institutions were selected. Six different institutions were targeted. The institutions are: Yobe State University (YSU), Federal Polytechnic, College of Agriculture, School of Nurse and Midwifery all in Damaturu, Federal College of Education Potiskum and College of Administration Management and Technology

(CAMTECT) Potiskum. Self-administered questionnaire was used as an instrument for data collection.

The questionnaire was a multiple types of questions – open-ended and five likert rating scale were used.

Population of the Study

The population of the study consists of students of tertiary institutions in Yobe state, emphasis was placed on Damaturu metropolis and Potiskum town. It covers all students both males and females who uses smartphones. The choice of students of tertiary institutions was based on the fact that student of tertiary institutions are assumed to be youths who are found to have the largest social media usage. More so, students use smart phones to ease their academic work

Sample Size and Sampling Technique

Three hundred and fifty four students were randomly selected from the above-mentioned institutions. Questionnaire was administered to these students to determine the brand switching behaviour of smart phone users. It is believed, however, that the responses of the selected students reflect to some extent the switching behaviour of smart phone users in Yobe state. In determining the sample size, the confidence level of 95% ($Z=1.96$) and taking the margin error of 5% was used. The paper used Krekcie and Morgan 1970 sample size Table to determine the sample size of 379 to represent the sample frame of thirty thousand one hundred and ten students (30,110). A simple random sampling technique was used due to the fact that the target population of the study is homogenous in terms of characteristics of interest (that is, students of tertiary institutions). The study used internal consistency reliability test using Cronbach alpha.

Data Analysis Techniques

The study used inferential statistics for data analysis. Structural Equation Modeling (SEM) technique using the Maximum Likelihood Estimation (MLE) was used to test all the variables, especially the influence of the independent variables, product features

(tangible and intangible) on brand switching behaviour which is the dependent variable. The data was analyzed using the software Statistical Package for Social Sciences (SPSS), version 22.0 and SEM_AMOS 21.0. All statistical tests of the hypotheses were set at 95 per cent confidence level.

Data Analysis:
Result of Exploratory Factor Analysis

In this section, discussions on the results of the Exploratory Factor Analysis (EFA) are conducted in order to assess the suitability of the instruments used in the study.

RESULTS AND FINDINGS

Table 1 KMO and Bartlett’s Test

Brand Switching Behavior		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.670
Bartlett’s Test of Sphericity	Approx.Chi-Square	493.502
	Df	10
	Sig	.000
Tangible Attribute		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.842
Bartlett’s Test of Sphericity	Approx.Chi-Square	2599.995
	Df	10
	Sig	0.000
Intangible Attribute		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.651
Bartlett’s Test of Sphericity	Approx.Chi-Square	888.309
	Df	10
	Sig	.000

Source: field Survey, 2024.

Table 1, shows Exploratory Factor Analysis (EFA) with a high value of 0.670 for the Kaiser-Meyer-Olkin Measure (KMO) and indicate the suitability of the research data for structure detection, i.e., the proportion of variance in the items that might be caused by underlying factors (Hair *et al.*, 2006). Thus, the data is relevant for factor analysis. This is confirmed by the significance of the Bartlett's test of sphericity tests (χ^2 : 493.502, DF: 10, Sig.: 0.000) indicating that the variables are not unrelated and, therefore, suitable for structure detection (Zainudin, 2014).

The result presented in Table 1 indicate that the Tangible Attribute Bartlett’s Test of Sphericity was significant (Chi square =2599.995, p-value < 0.000). The measure of sampling adequacy by Kaiser-Meyer-Olkin, (KMO) is 0.842, and it has improved above 0.6. The KMO value close to 1.0 and the significance value of Bartlett’s Test indicate that the data at hand is adequate to proceed into confirmatory factor analysis (Zainudin, *et-al* 2014).

The Intangible Attribute control KMO value of 0.651 is good as it exceeds the recommended value of 0.6 (Kaiser, 1974).

The two measures (KMO value close to 1.0 and the Bartlett’s Test significance value close to 0.0) suggest that the data is appropriate to proceed with its reduction procedure (Hair, *et al*, 2006; Zainudin, 2014). The next step is running confirmatory factor analysis procedure.

Reliability Test

The results indicate that the Cronbach’s Alpha reliability coefficients for all constructs are all above 0.6. Generally, Table 4 indicates that, the internal consistency reliability of the variables used in this study is considered good and excellent.

Table 2 Result of the Reliability Statistics of the variable of the Study

Construct	Number of items in construct	Cronbach’s Alpha
Brand Switching Behavior	4	0.659
Tangible Attribute	11	0.866
Intangible Attribute	10	0.798

Source: Field Survey, 2024.

Confirmatory factor Analysis Unidimensionality and Validity of the Measurement Model

The confirmatory factor analysis has the ability to assess the unidimensionality, validity and reliability of a latent construct before modeling their inner-relationship in a structural model. Therefore, confirmatory factor analysis is a procedure of validating measurement model of latent construct.

The measures of overall fit are examined considering four indexes. Secondly, Measurement model

parameter estimates are examined to ensure that they are in the right direction and of reasonable size. Thirdly, latent factor correlations are inspected, and fourthly, factor determinacies were examined. Lastly, standardized residuals were examined to determine whether there are any aspects of the model that does not fit the data well (Dilalla, 2000; Emmoglu, *et-al* 2011). The tested measurement model is presented in Figure 1

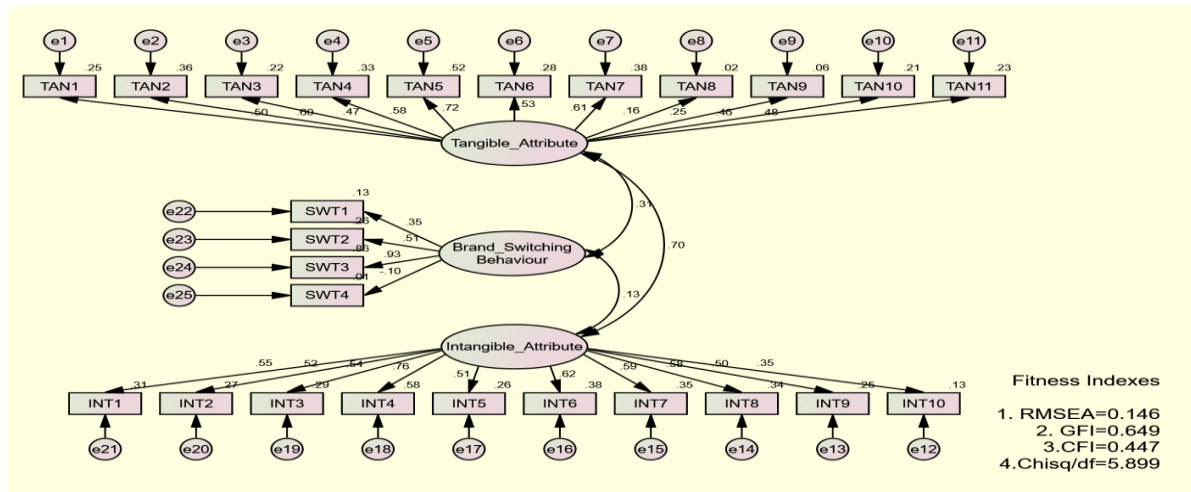


Figure 1 Confirmatory Factor Analyses (Measurement Model)

Source: Amos Software, Version 21

The measurement model, twenty-five measuring items was used as parameters. However; in the case of reliability test,

internal consistency approach through Cronbach Alpha value of greater than 0.60was used. Therefore, in figure 1, all of

the factor loading are above the recommended value of 0.40 except TAN8 with a value of 0.16, TAN9, INT10 and SWT4 with a factor loading of 0.25, 0.25 and -0.10 respectively that need to be deleted

before proceeding to the next analysis. But it should be noted that, the deletion should not be above 30% of the items in a construct. This resulted to getting a new measurement model with 21 dimensions subsequently.

Table 3

The Fitness Indexes for Measurement Model

Name of Category	Name of Index	Index Value	Comments
Absolute Fit	RMSEA	0.146	The Required Level is not Achieved
	GFI	0.649	The Required Level is not Achieved
Incremental Fit	CFI	0.447	The Required Level is not Achieved
Parsimonious Fit	Chisq/df	5.899	The Required Level is not Achieved

Source: Field Survey, 2024.

The CFA result confirms that the model was not accepted for further analysis. The values indicate that all the fitness indexes for the constructs do not achieve the required level and the proposed model does not adequately fit the data. In general, the result of the assessment of the measurement model did not show solid evidence of uni-

dimensionality, convergent validity, and discriminant validity. Therefore, to achieve the fitness indexes of the measurement model, a modification needs to be carried out in the model whereby the four-factor loading with less than 0.40 will be deleted. Therefore, the new (modified) model is presented in figure 2 below.

The New Measurement Model

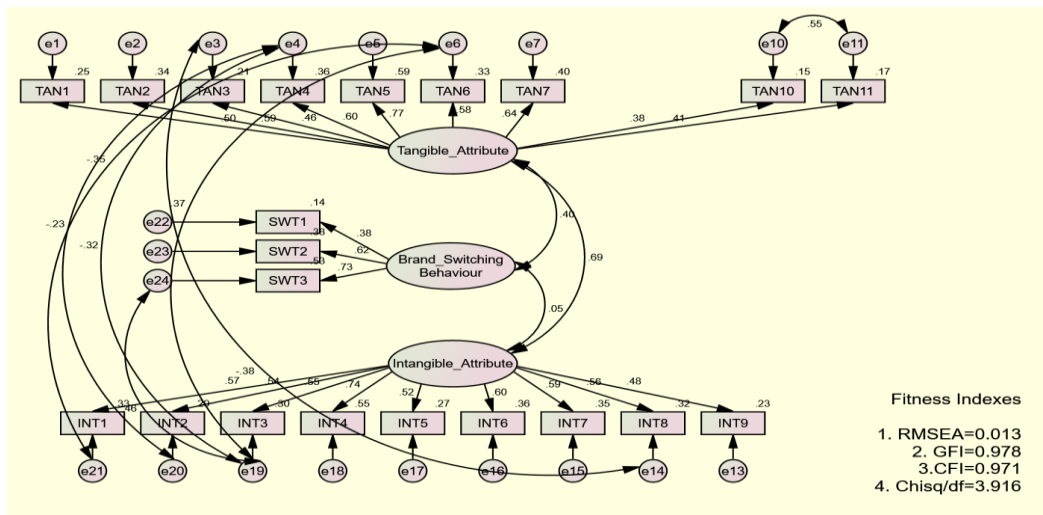


Figure 2 The New Factor Loading after three items with low factor loading were deleted (The New Measurement Model).

Source: Amos Software, Version 21.

Figure 2 above is a new measurement model indicating a new factor loading after modifying the first measurement model. This result is shown after deleting four items namely, TAN8, TAN9, INT10 and SWT4

Table 4

The New Fitness Indexes for Modified Measurement Model

Name of Category	Name of Index	Index Value	Comments
Absolute Fit	RMSEA	0.013	The Required Level is Achieved
	GFI	0.978	The Required Level is Achieved
Incremental Fit	CFI	0.971	The Required Level is Achieved
Parsimonious Fit	Chisq/df	3.916	The Required Level is Achieved

Source: Field Survey, 2024.

Note: The fitness index has improved after the modification has taken place in the measurement model.

According to Figure 2 and Table 4, the CFA results shows that the RMSEA = 0.013, GFI = 0.978. CFI = 0.971, and Chisq/df = 3.916. The fitness indexes, as shown in Table 5, indicates that the measurement model signifies a satisfactory fit of the data and the result of all the fitness indexes yielded

adequate fit. In general, the result of the assessment of the measurement model shows solid evidence of unidimensionality, construct validity, reliability and discriminant validity. Certainly, the model is fit and hence can proceed with further analysis.

Table 5 The Measurement Model Results for Each Construct (After Modification)

Construct	Items	Factor loading	C.R. (Above 0.60)	AVE (Above 0.50)
Brand Switching Behavior	SWT1	0.379	0.605	0.552
	SWT2	0.616		
	SWT3	0.731		
Tangible Attribute	TAN1	0.505	0.797	0.503
	TAN2	0.586		
	TAN3	0.463		
	TAN4	0.598		
	TAN5	0.770		
	TAN6	0.578		
	TAN7	0.635		
Intangible Attribute	TAN10	0.384	0.816	0.528
	TAN11	0.413		
	INT1	0.574		
	INT2	0.539		
	INT3	0.549		

	INT4	0.744		
	INT5	0.515		
	INT6	0.600		
	INT7	0.591		
	INT8	0.564		
	INT9	0.481		

Source: Field Survey, 2024.

Table 5. Model has sufficient measurement properties on each single factor model based on its Composite Reliability and Average Variance Extracted. Therefore, with the above result, the model is adequately fit for further analysis.

After the fitness indexes have been achieved, there is a need to examine the normality assessment for the data at hand before proceeding to modeling the structural model. The table presents the normality assessment for every item involved in the measurement model (Table 6).

The Assessment of Normality for the Data

Table 6 The Assessment of Normality Distribution for Items in the Construct

Assessment of normality (Group number 1)						
Variable	min	Max	skew	c.r.	kurtosis	c.r.
SWT3	2	5	-1.441	-8.944	1.39	4.313
SWT2	1	5	-0.93	-5.769	0.268	0.83
SWT1	2	5	-1.142	-7.087	0.913	2.833
INT1	1	5	-0.864	-5.363	0.313	0.971
INT2	1	5	-0.838	-5.199	0.118	0.367
INT3	1	5	-0.706	-4.381	-0.37	-1.146
INT4	1	5	-0.98	-6.079	0.758	2.351
INT5	1	5	-0.808	-5.011	0.449	1.393
INT6	2	5	-0.523	-3.246	-0.739	-2.294
INT7	1	5	-1.349	-8.367	1.543	4.786
INT8	2	5	-1.069	-6.636	0.579	1.797
INT9	1	6	-1.46	-9.057	2.103	6.524
TAN11	1	5	-1.125	-6.979	0.604	1.873
TAN10	2	5	-0.844	-5.236	-0.534	-1.657

TAN7	1	5	-0.926	-5.747	-0.367	-1.139
TAN6	1	5	-0.529	-3.285	-0.729	-2.263
TAN5	1	5	-0.739	-4.585	-0.611	-1.896
TAN4	1	5	-0.917	-5.691	-0.173	-0.537
TAN3	1	5	-0.615	-3.818	-0.564	-1.75
TAN2	1	5	-0.767	-4.76	-0.086	-0.266
TAN1	1	5	-0.792	-4.916	-0.315	-0.977
Multivariate					69.918	17.095

Source: Field Survey, 2024.

Table 6 the result indicates that the Skewness and Kurtosis meet the recommended value of -3 to +3 (Skewness) and -3 to +3 (Kurtosis). This result clearly shows that the data used in this study was normally distributed. With this, the data is suitable to proceed with further analysis that is the Structural Equation Modelling (SEM)/Structural Model

Structural Model

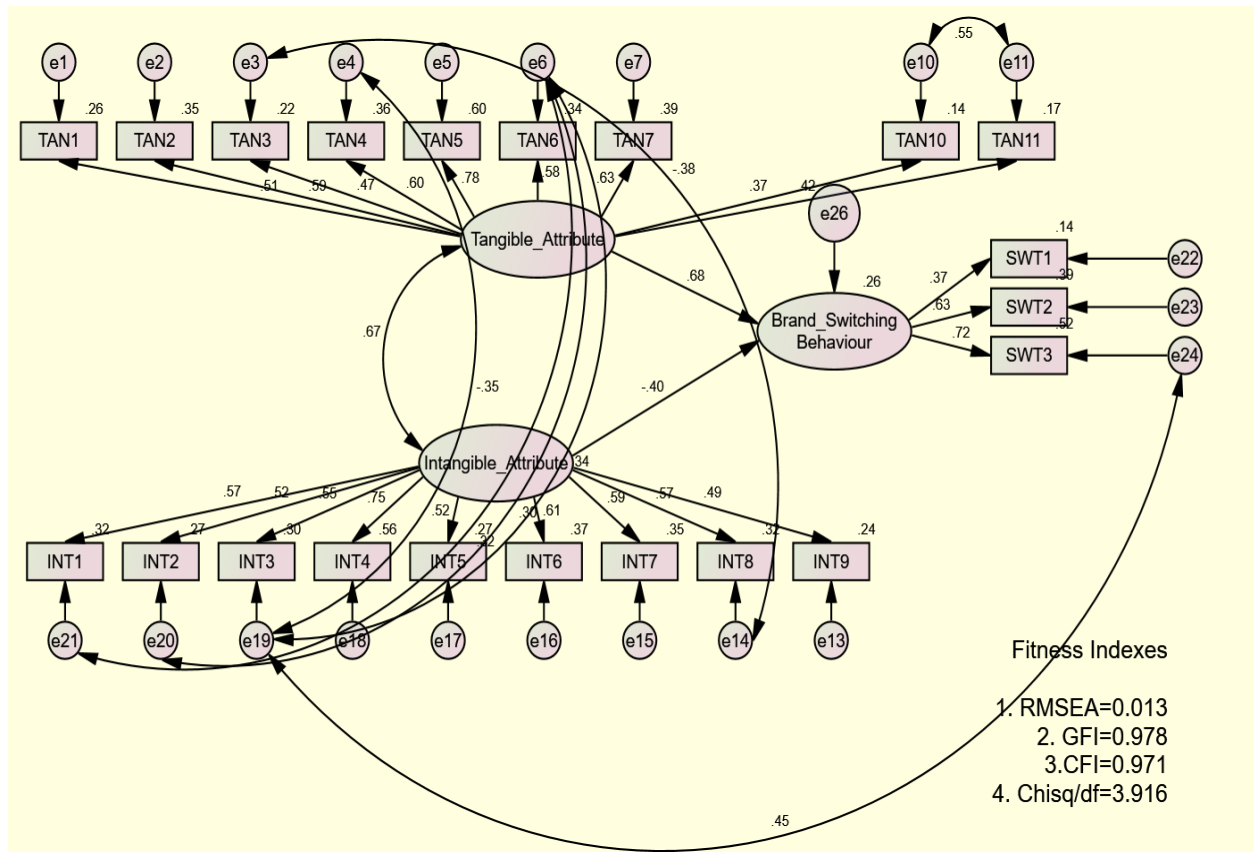


Figure 3: The Standardized Estimates for Every Path in the Structural Model.

Source: Amos Software, Version 21.

Table 7
The Standardized Path Coefficients for the Model

Independent Construct	Path	Dependent Constructs	Estimate
Tangible Attribute	--->	Brand Switching Behavior	0.68
Intangible Attribute	--->	Brand Switching Behavior	-0.04

Source: Field Survey, 2024.

The result in Table 7 indicates that when tangibility attribute goes up by 1%, Brand Switching Behavior goes up by 0.68%. When intangibility attribute goes up by 1%, Brand Switching Behavior goes down by 0.04%.

Table 8

The Correlation Estimate for Each Pair of Exogenous Construct

Constructs	Path	Constructs	Estimate correlation
Brand Switching Behavior	<-->	Tangible Attribute	0.398
Brand Switching Behavior	<-->	Intangible Attribute	0.051
Tangible Attribute	<-->	Intangible Attribute	0.685

Source: Field Survey, 2024.

Table 8 results indicates that 0.398 is the estimated correlation that exists between Brand Switching Behavior and Tangible Attribute. 0.051 is the estimated correlation between Brand Switching Behavior and intangible Attribute, while 0.685 is the estimated correlation between intangible Attribute and tangible Attribute. The result shows an acceptable correlation between the constructs which is below 0.85.

Table 9

The Squared Multiple Correlation (R^2)
Estimate (R^2)

Variable	
Acceptance Brand Switching	0.26

Source: Field Survey, 2024.

The result in Table 9 of the squared multiple correlations indicate that, the predictors of the Brand Switching Behavior explain 26 percent of its variance. In other words, the error term is estimated to be 74 percent.

Regression Weights of the Model

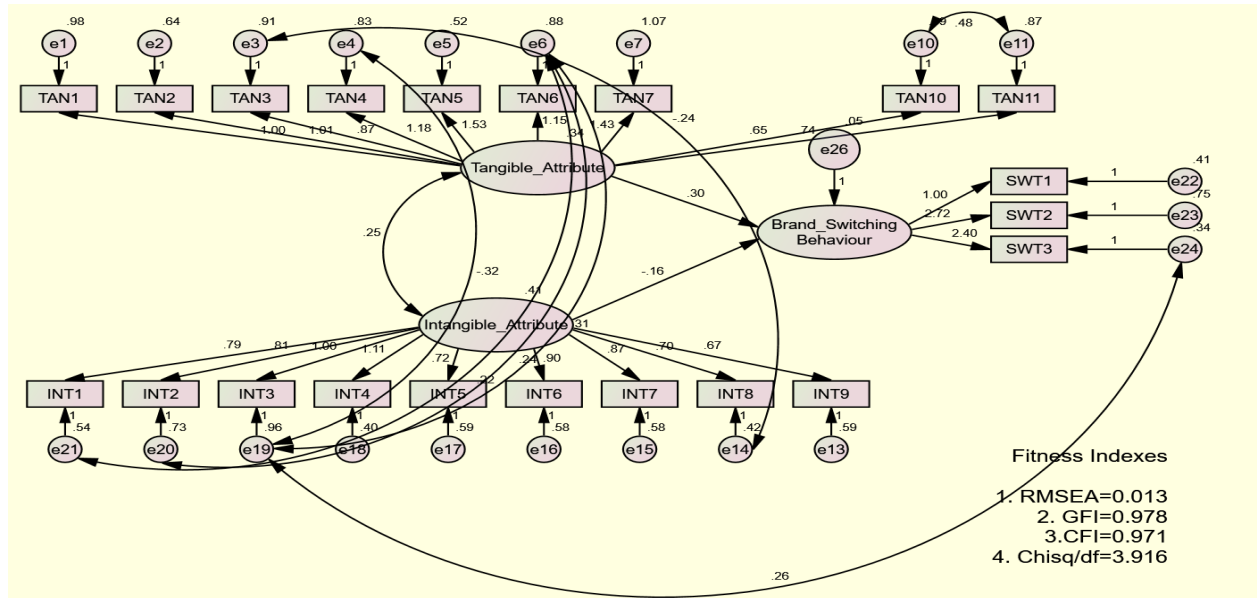


Figure 4: Regression Weights for the Model.
Source: Amos Software, Version 21.

The regression weight indicates the estimate of the beta coefficient that measures the effects of every independent’s variable on the dependent variable.

Table 10

The Regression Weights for every Path Estimate and its Significant

Hypothesized Path			Beta	P-Value	Result
Tangible Attribute	--->	Brand Switching Behavior	0.30	0.002	Significant
Intangible Attribute	--->	Brand Switching Behavior	-0.16	0.038	Significant

Source: Field Survey, 2024.

Notes: ***p<0.001; **p<0.01; *p<0.05

In Table 10 the path (arrow) and its coefficient are presented, which indicate the effects of every independent’s variable on the respective dependents variable and to achieve the objective of this study three hypotheses were developed which are interpreted below:

Testing of Hypothesis

Tangible Attribute and Brand Switching Behavior

The hypothesis of this study was formulated as: tangible attribute does not affect Brand Switching Behavior. The result in Table 10 shows that the influence of

tangible attribute on Brand Switching Behavior is positive (0.30 i.e. 30%) and statistically significant (P<0.05 i.e. 0.002). Therefore, the beta coefficient for the effect of tangible attribute on Brand Switching Behavior is 30%. Thus, the null hypothesis is rejected, and the first objective of this study is achieved, hence tangible attribute affects Brand Switching Behavior positively and statistically significant. The findings are consistent with that of Asiagwu, Mojekeh, and Anyasor (2021) who ascertained that network coverage, price, and service quality and customer service have significant positive

influence on consumer brand switching behaviour in mobile telecommunication in South-South zone, Nigeria.

Intangible Attribute and Brand Switching Behavior

The second hypothesis of this study was formulated as: Intangible attribute does not affect Brand Switching Behavior. The result in Table 10 shows that the influence of intangible attribute on Brand Switching Behavior is negative (-0.16 i.e. -16%) and statistically significant ($P < 0.05$ i.e. 0.038). Therefore, the beta coefficient for the effect of intangible attribute on Brand Switching Behavior is -16%. Therefore, the null hypothesis is rejected, and the first objective of this study is achieved, hence intangible attribute affects Brand Switching Behavior negatively and statistically significant.

CONCLUSION AND RECOMMENDATIONS

The study examined product attributes as the determinants of brand switching behaviour of smartphone among students of tertiary institutions in Yobe State, Nigeria. Data were sourced from the smartphone users in tertiary institutions. These data were subjected to the empirical analysis and the following results were ascertained. The study found that tangible attributes have significant and positive influence on brand switching behaviour of students of tertiary institutions in Yobe state Nigeria. The study also found that intangible attributes has significant negative influence on brand switching behaviour of students of institutions in Yobe State Nigeria.

Thus, the study recommends that:

1. Since People are attracted by the tangible attributes which has positive impact on consumer's switching behaviour especially students of tertiary institutions, companies should shift ground on seeing how to better up these tangible attributes so as to enhance the purchase decision and then deter consumers from switching from one smartphone to another. This can be done by carrying out a periodic survey

which would help in identifying these new technology features and decide which ones to add to their product and which to subtract. Moreover, by determining which combination of these features match the current trends and consumer needs would be cost effective to the mobile phone companies.

2. The study further recommends that, since the influence of intangible attribute on Brand Switching Behavior is negative (-0.16 i.e. -16%) and statistically significant ($P < 0.05$ i.e. 0.038) which indicate that when intangibility attribute goes up by 1%, Brand Switching Behavior goes down by 0.04%. Thus, companies should build a long-term relationship with customers to prevent brand switching by understanding the consumer's demands and satisfying the consumer's needs and specifications as any improvement in the product feature by a competitor can enhance consumer switching behaviour. Consumer switching behaviour could have a negative effect on firms' revenue and brand continuity.

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MODERATING EFFECTS OF ORGANISATIONAL LEARNING AND ORGANISATIONAL INNOVATION CAPABILITY ON ENVIRONMENTAL STRATEGY AND ECONOMIC PERFORMANCE

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Abstract

The effect of environmental strategy on economic performance has been established in extant literature, but what is not fully known is how environmental strategy affects economic performance. Extant studies acknowledge intervening factors that contribute to a positive association; however, the limited extant evidence only examined mediators, suggesting moderators remain unexplored. Therefore, the present study investigates the effect of environmental strategy on economic performance, given the quasi-moderating variables of organisational learning and organisational innovation capability. The study adopted a survey design to obtain cross-sectional data from 235 managers in the manufacturing sector in Delta and Edo State, Nigeria, and analyzed the data using the two-step partial least squares (PLS) method. The PLS results show environmental strategy, organisational learning, and organisational innovation capability affect economic performance. The moderating results show that the environmental strategy effect on economic performance is conditioned by organisational learning and organisational innovation capability. The study concluded that environmental strategy affects economic performance, with organisational learning and organisational innovation capability serving as quasi-moderators. The study presented practical implications to enhance the conditions affecting the environmental strategy and economic performance nexus, which benefits organisational management.

Keywords: Environmental strategy, economic performance, organisational learning, organisational innovation

Introduction

Nowadays, environmental-related issues (e.g., ozone depletion, climate change, and global warming) have become a pressing concern in public discussions owing to the growing ecological debasement caused by the activities of business organisations. This global problem has prompted stakeholders to pressure organisations to manage the debilitating effect of their activities on the natural environment (Hussain *et al.*, 2022). Now, organisations have a responsibility to develop and adopt practices that can protect the environment from the waste and pollution they generate. Environmental strategy is one way organisations can solve environmental problems (Adomako & Tran, 2022). The application of environmental strategy fosters

environmental impact considerations to guide organisational activities for sustainable environmental performance (Wang & Bian, 2022). The transition of Nigerian firms to sustainable practices has been below expectations (Ononye *et al.*, 2022; Mbang *et al.*, 2020). This is not unconnected to the strong managerial consideration for a positive economic outlook, especially in a period marked by disruptive economic challenges and downturns. Siegel (2009) contends that sustainability initiatives matter only when they serve the economic interests of organisations. Economic performance denotes the economic benefits, including financial and non-financial benefits, obtained from organisational activities.

Studies on the environmental strategy-economic performance relationship are mixed (Olayeni *et al.*, 2021; Tan *et al.*, 2022). As a result, there is a need to unravel the relationship between environmental strategy and economic performance in order to reveal the contextual conditions that foster it (Olayeni *et al.*, 2021). Studies (Ćater *et al.*, 2018; Olayeni *et al.*, 2021; Tan *et al.*, 2022) have acknowledged the presence of intervening factors that contribute to a positive association. However, these studies only examined mediators, which suggests moderators remain underexplored. Arguably, the contextual factors are not fully known and understood, which made the study focus on two moderators—organisational learning and organisational innovation capability—to address this gap. Although these factors are related to strategic change and organisational performance (Thoumrunroje, 2015; Donkor *et al.*, 2018), it is important to know whether their dynamic and transformative qualities can establish the right foundation to transform strategy into value for superior performance. Arguably, the changing environmental dynamics constantly put pressure on organisations to learn and devise new ways of doing things. Thus, organisational learning and organisational innovation capability may have the potential to enable the strategic initiation of environmental resources to embed practical changes with strong performance implications.

This study is unique in that it reveals some potential moderating constructs that determine the significance of the environmental strategy and economic performance link. When specifically applied to an African country, Nigeria in particular, the integrated framework represents an unexplored area that no single study has examined before. The findings will demonstrate the strategic capabilities that organisations should deploy to improve the environmental strategy and economic performance link. These considerations can help in rethinking the adoption of environmental strategies, given the concern about the growing degradation of the environment in the productive sector of

developing countries like Nigeria (Adekunle & Omoregbe, 2022; Mbang *et al.*, 2020). Next, this paper is divided into sections that include a literature review, methods, results, and discussions, as well as a conclusion and recommendations.

LITERATURE REVIEW

Environmental strategy is a set of initiatives or actions that mitigate the harmful consequences of an organisation's activities or operations in the natural environment (Tan *et al.*, 2022). The aim is to create a safe and sustainable environment for stakeholders and organisations to thrive meaningfully and productively. Environmental strategy has been linked to economic performance, an outcome construct that typically denotes the measurement of the changes in an organisation's financial and related indicators, such as return on investment, profitability, sales performance, and market share. This construct is assessed subjectively or objectively to find out the extent to which an organisation accomplishes its economic objectives in a given period (Ononye *et al.*, 2022). Several studies have established the relationship between environmental strategy and economic performance. Some support the relationship (Fousteris *et al.*, 2018; Olayeni *et al.*, 2021); others do not support the relationship (Tan *et al.*, 2022; Yu & Jin, 2022). The inconclusive results make it necessary to identify contextual variables proving this relationship. We argue that the link between strategy and performance is a complex one that requires a range of capabilities to properly foster it. Studies (Ćater *et al.*, 2018; Olayeni *et al.*, 2021) have documented different mediating variables affecting this relationship, but what is missing are the moderating variables in this respect. While there is no consensus on the mediating variables that influence the relationship between environmental strategy and economic performance, this study fills the gap by focusing on the moderating variables, a topic that has received little attention in related studies. In this line, the moderating constructs of organisational learning and organisational innovation capability were

introduced to develop a research model elucidating this relationship.

Organisational learning refers to a dynamic process in which new knowledge is created, acquired, shared, and applied with the aim of enhancing the capacity for effective organisational action. The openness to accumulate and apply new knowledge from the environment allows organisations to be adaptive and innovative, thereby improving their performance to secure high competitiveness. Regarding the moderating role of organisational learning, studies found it was significant in the strategic change-organisational performance relationship (Thoumrungroje, 2015) and the sustainable supply chain initiative and sustainability performance relationship (Yang *et al.*, 2023). This appears to suggest that organisational learning improves the alignment of strategy with the ever-changing dynamics of the environment. This is critical for sustainable performance because organisations can adapt or transform strategy to reflect new insights relevant to addressing the ever-changing problem context.

Organisational innovation capability denotes an organisation's ability to develop practical and effective solutions to reduce ecological damage and enhance performance. It can amplify environmental thinking by shaping organisational strategies and practices to reduce the ecological footprints of organisations. This ability is not limited to a given time, as organisations should observe environmental responses to their actions through an iterative learning process that results in refinement and change in strategic approach (Ononye & Igwe, 2019). In this line, organisations must align with emerging trends in the green economy by making distinctive quality adjustments or improvements in the strategy, processes, practices, and products of the organisation. This provides flexibility in taking advantage of economic opportunities in changing environments. Although organisational innovation capability contributes directly to economic performance (Sun *et al.*, 2022), we believe that this is not the only way it exerts an influence on economic performance.

Studies have shown the contextual relevance of organisational innovation capability in relationships between strategy-related variables and organisational performance (Awais *et al.*, 2023; Donkor *et al.*, 2018). But empirical support remains limited in the link between green concepts and economic performance (Fan *et al.*, 2021). However, the study argues for the moderating role of organisational innovation capability in this relationship. It is considered an organisational level capability to create and apply practical knowledge that may foster or negate the extent to which environmental strategy affects economic performance.

The natural resource-based perspective, which is an extended variation of the resource-based theory, suggests that organisations could obtain a sustainable competitive advantage if they responded quickly to changing environmental demands. Here, internal strategic capabilities (i.e., organisational learning and organisational innovation capability) are important in ensuring organisations achieve the goal of sustainable competitive advantage. This is because they influence organisational strategies, which have the potential to confer competitive benefits that meet stakeholders' and organisations' objectives. Drawing from the dynamic capability theory, organisations develop capabilities that enable them to change or renew their strategic resources and processes to meet environmental objectives, thus allowing them to maintain competitiveness in changing environments. These capabilities enable market differentiation, providing unique economic advantages. In addition, these capabilities systematically foster strategic alignment with the economic and environmental objectives of a firm. This places organisations in a better position to further their overall objectives in a sustainable manner.

As noted above, organisational learning and organisational innovation capability can be operationalised as moderating constructs in the environmental strategy and economic performance link, but we also argue that they could be quasi-moderators. Cerin (2014) notes that quasi-moderators independently

influence the relationship between two latent constructs and the dependent latent construct. There is evidence of the direct relationship between organisational learning and economic performance (Akgün *et al.*, 2014) and organisational innovation capability and economic performance (Saunila, 2014). The quasi-moderation role of organisational innovation capability was documented in Donkor *et al.* (2018), who found that

innovation capability has a positive and significant impact on financial performance and also moderates the strategic goals and financial performance link. Taken together, organisational learning and organisational innovation capability may not only interact with environmental strategy but also predict economic performance. In view of this argument, five hypotheses were proposed.

- H1: Environmental strategy has a positive and significant effect on economic performance.*
- H2: Organisational learning has a positive and significant effect on economic performance.*
- H3: Organisational innovation capability has a positive and significant effect on economic performance.*
- H4: Organisational learning moderates environmental strategy effect on economic performance.*
- H5: Organisational innovation capability moderates environmental strategy effect on economic performance.*

Figure 1 summarises the hypothesised relationship between environmental strategy and economic performance, given organisational learning and organisational innovation capability as quasi-moderating variables.

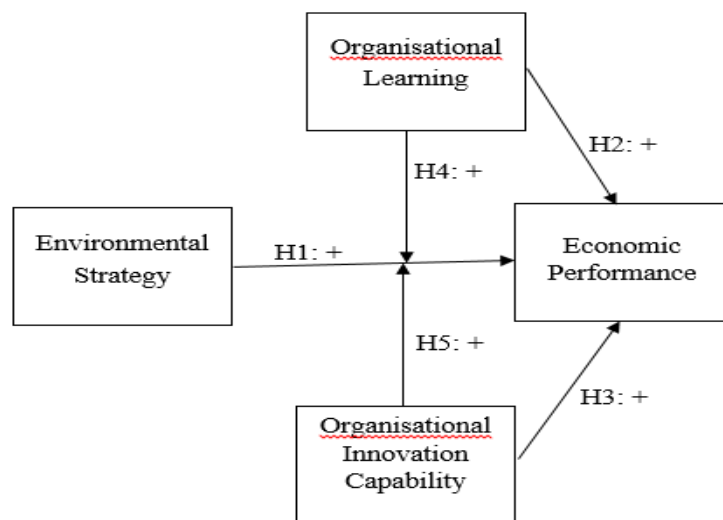


Figure 1. The research framework

METHODOLOGY

a. Sample and Procedure

The study performed a cross-sectional survey on manufacturing organisations operating in the south-south region of Nigeria, specifically Delta and Edo State. The study purposively targeted managers because of their knowledge of the progress achieved through the execution of a given strategy. The population comprised 154 registered and

functional members of the Manufacturers Association of Nigeria. Using Yamane’s sample size formula, the study randomly contacted 112 manufacturing organisations to ask questions about the level of environmental strategy implementation. This was done to streamline participation for organisations implementing environmental strategies. 91 of them indicated that they have this type of strategy in place and were asked

to participate in the survey. Out of 91, 86 consented to participate in the survey. The survey was performed on the managing director, general manager, and/or managers in each of the participating organisation. The researchers conveniently administered 239 questionnaires from September to November 2023. The researchers provided respondents with an envelope in which to enclose their responses for collection.

239 responses were retrieved, of which 235 valid responses were analysed. The remaining 4 responses were excluded from the analysis for missing values. Since the responses were

self-reported and obtained from a single source at a given time, the data may be flawed due to the problem of common method bias (CMB). To eliminate such fears, Harman's single factor test was used to check the data for CMB problems. The four latent constructs were entered and computed in a non-rotated solution to find the number of factors that account for any variance among the constructs. The results revealed a 32.84% covariance, which is below the cut-off point of 50%; thus, there was no significant CMB problem in the dataset.

Table 1: Sample Demographics

Respondent's Profile	Frequency	Percentage %
Gender		
Male	132	56.2
Female	103	43.8
Age		
31–35	3	1.3
36–40	24	10.2
41–45	81	34.5
46–50	99	42.1
51 and above	28	11.9
Educational Qualification		
Bachelor's Degree	102	43.4
Post Graduate Degree	133	56.6
Years of Experience		
6–10 years	12	5.1
11–15 years	74	31.5
16–20	93	39.6
21 years and above	56	23.8
Position		
Managing Director	71	30.2
General Manager	85	36.2
Manager	79	33.6
Industry type		
Agri-food	44	18.7
Construction	16	6.8
Chemical and plastic	87	37.0
Electrical and electronic	13	5.5
Energy	10	4.3
Food and beverage	65	27.7

b. Measures

The study employed measurement items from previously validated scales to construct the questionnaire. Banerjee et al. (2003) provided the three questions for environmental

strategy. The five question items for organisational learning were adapted from Thomas *et al.* (2017). The five questions on organisational innovation capability were adapted from Grawe *et al.* (2009). The study

obtained five perceptual questions on economic performance from Yu *et al.* (2013). To facilitate a better and deeper analysis, the economic performance questions were structured to represent the performance data for the past three years. All the question items were structured to show the level of agreement on a five-point Likert scale ranging from 1 “strongly disagree” to 5 “strongly agree.”

The questionnaire was pre-tested to confirm its validity and reliability. While the use of previously validated scales ensures content validity, face validity was established by inviting three management experts at Delta State University and two professional top managers working in the manufacturing sector to look at the question items in the questionnaire. Following their constructive comments, some changes were made to improve relevance, clarity, and comprehension. After that, 10 copies were administered through convenient sampling to the intended participants to establish the construct reliability of the questionnaire. The resulting Cronbach’s alpha values (environmental strategy = 0.822, economic performance = 0.767, organisational learning = 0.790, organisational innovation capability = 0.784) indicate that adequate construct reliability was achieved. This test was performed with the SPSS 20.0 software.

c. Analytical Technique

The study analysed the data with the partial least squares [PLS] modelling method and applied the two-step procedure in analysing

the research model. In the first step, confirmatory factor analysis was used to test the validity and reliability of the measurement model. The second step requires an estimation of the structural model for hypothesis testing. The product indicator calculation approach was used to assess the significance of the interaction effect. The PLS analysis was performed with the SMARTPLS 3 software.

RESULTS AND DISCUSSION

a. Data Analysis and Interpretation

The factorability of the dataset was tested before proceeding to the two-step procedure for PLS analysis. The Kaiser-Meyer-Olkin [KMO] measure of sampling adequacy and Bartlett's test of sphericity [BTS] were used for this initial test, and the SPSS 20.0 software aided it. The KMO values were higher than the acceptable cut-off point of 0.60, and the BTS scores were significant at $p < 0.05$. The results suggest the dataset was factorable. Next, the validity and reliability of the measurement model were determined using different quality criteria, such as average variance extracted [AVE], Fornell-Larcker criteria [FLC], standardised factor loadings [FL], and composite reliability [CR]. The AVE and FLC were used to assess convergent validity and discriminant validity, respectively. The FL and CR were used to assess item reliability and construct reliability, respectively. The rules of thumb in Hair *et al.* (2021) were used to interpret the resulting values of the validity and reliability tests.

Table 2: KMO, BTS, and Measurement Model Results

Construct	KMO > 0.60	BTS p < 0.05	FL Range > 0.70	CR > 0.70	AVE > 0.50	FLC			
						1	2	3	4
ES	0.665	0.000	0.760–0.809	0.733	0.611	0.782			
OL	0.698	0.000	0.836–0.871	0.767	0.739	0.336	0.860		
OIC	0.711	0.000	0.779–0.822	0.791	0.752	0.215	0.292	0.867	
EP	0.704	0.000	0.723–0.845	0.810	0.685	0.311	0.153	0.277	0.828

Note: ES = environmental strategy, OL = organisational learning, OIC = organisational innovation capability, EP = economic performance

Table 2 shows that the FL values, which ranged from 0.760–0.809, exceeded the acceptable threshold value of 0.70, indicating

that all items in all constructs achieved good item reliability. In other words, the constructs explained more than 50% of their respective

indicators' variance. The latent constructs' CR values, which ranged from 0.767–0.833, exceeded the cut-off point of 0.70, proving acceptable construct reliability was established. The AVE values of the latent constructs, ranging from 0.685–0.783, were over the minimum and acceptable limit of 0.50, suggesting satisfactory convergent validity. The FLC values demonstrate the attainment of discriminant validity, as the squared correlation of each construct exceeded the squared correlations among the constructs. In all, the properties of the measurement model were valid and reliable. Next, the structural model estimation was performed for the testing of hypotheses. In

doing so, the standardised path coefficient (also referred to as beta value = β) was used to determine the nature of the relationship in a hypothesised path, the p value was used to establish the significance of the relationship in a hypothesised path, and the coefficient of determination (R^2) was used to determine the predictive or explanatory power of the hypothesised model. The direct effects were determined before the interaction effects (Hair *et al.*, 2021). The standard root mean square residual (SRMR), which is a model fit index, was also used to assess the difference between the observed and predicted correlations.

Table 3: Structural Model Results

H	Paths	Model 1	Model 2	Support
		β ($p < 0.05$)	β ($p < 0.05$)	
1	ES \rightarrow EP	0.174 (0.000)	0.178 (0.000)	Yes
2	OL \rightarrow EP	0.471 (0.000)	0.469 (0.000)	Yes
3	OIC \rightarrow EP	0.298 (0.000)	0.295 (0.000)	Yes
4	ES*OL \rightarrow EP		0.161 (0.000)	Yes
5	ES*OIC \rightarrow EP		0.109 (0.023)	Yes
	R^2	0.503	0.517	
	SRMR	0.078	0.073	

Note: ES = environmental strategy, OL = organisational learning, OIC = organisational innovation capability, EP = economic performance

In Table 3, the structural model was estimated for the direct and interaction effects. The study developed three direct effect hypotheses, and the results obtained after applying the bootstrap method using 5000 subsamples reveal that environmental strategy has a positive and significant effect on economic performance ($\beta = 0.174$), organisational learning has a positive and significant effect on economic performance ($\beta = 0.471$), and organisational innovation capability has a positive and significant effect on economic performance ($\beta = 0.298$). The positive effects of environmental strategy, organisational learning, and organisational innovation capability were significant at $p < 0.05$; thus, H1, H2, and H3 were accepted. These three independent latent constructs combined account for 50.3% of the variance

in economic performance. The SRMR value (0.078) was below 0.08, which suggests a good model fit (Kline, 2014).

Table 3 presents the results of the moderating effects. The product indicator method was applied by multiplying environmental strategy and organisational learning to predict economic performance and environmental strategy and organisational innovation capability to predict economic performance. The results reveal that organisational learning ($\beta = 0.161$, $p = 0.000$) and organisational innovation capability ($\beta = 0.109$, $p = 0.023$) positively moderate environmental strategy effects on economic performance. Thus, H4 and H5 were supported. The quasi-moderating variables of organisational learning and organisational innovation capability optimise the environmental

strategy and economic performance relationship, as the correlational value improved by 0.004 in model 2. The R^2 shows that including the moderating conditions of organisational learning and organisational innovation capability in model 1 accounts for an additional 1.4% variance in economic performance. The SRMR value marginally increased to 0.073, indicating a satisfactory model fit.

b. Discussion of the Results

The study found that environmental strategy has a positive and significant effect on economic performance. This finding is in consonance with studies (Fousteris *et al.*, 2018; Olayeni *et al.*, 2021) that reported the same positive effect; however, it disagrees with studies (Tan *et al.*, 2022; Yu & Jin, 2022) that refute the positive result. Olayeni *et al.* (2021) reported a similar finding from a Nigerian perspective, which may connect the finding to the research context. Indeed, organisations, especially those sampled, that adopt environmental strategies observe a significant improvement in their economic performance. However, the roles of organisational learning and organisational innovation capability in this link are important. The findings suggest that organisational learning and organisational innovation capability do not only affect economic performance directly (Akgün *et al.*, 2014; Saunila, 2014) but also moderate the environmental strategy and economic performance link. Thus, they demonstrate their quasi-moderating roles.

The finding on the moderating role of organisational learning aligns with the study's position, as drawn from previous research (Thoumrungroje, 2015; Yang *et al.*, 2023), that organisational learning continuously embeds new strategic information that aligns with the environment into the fabric of the organisation to improve strategy, practice, and performance accordingly. At the same time, the moderating role of organisational innovation capability in the environmental strategy and economic performance link supports Donkor *et al.* (2018), who argued that innovation capability played a quasi-

moderating role in the relationship between strategic goals and economic performance. It is also consistent with the study's position, as drawn from recent studies (Awais *et al.*, 2023, Tan *et al.*, 2022), that organisational innovation capability has contextual relevance in relationships between strategy-related constructs and organisational performance.

Additionally, the findings support the argument drawn from both the natural resource-based theory and the dynamic capability theory that organisational learning and organisational innovation capability are internal strategic capabilities that enable organisations to leverage environmental strategy for the attainment of superior economic advantages. It is important to mention that both strategic capabilities enable organisations to develop and leverage knowledge-related processes to perform different activities with the aim of improving their economic outlook.

CONCLUSION AND RECOMMENDATIONS

The study examined the relationship between environmental strategy and economic performance by accounting for the moderating roles of organisational learning and organisational innovation capability. In doing so, cross-sectional data were obtained from 235 respondents in the manufacturing sector in Delta and Edo State, Nigeria, and subjected to the partial least square [PLS] two-step analytical procedure. From the PLS results, the study concluded that superior economic performance can be attained if environmental strategy adoption is supported by internal strategic capabilities: organisational learning and organisational innovation capability. However, in light of the findings, the study recommends that:

- i. Organisations should demonstrate a clear commitment and support for the systematic development and adoption of environmental strategies, given the significant economic benefits they may provide.

- ii. Organisations should develop and leverage their strategic capabilities, especially organisational learning and organisational innovation capabilities, because they are essential for effective strategy and performance management. Strategy cannot work in the same way over time, nor is performance consistent without learning and value introjection.

The study is not without limitations. First, the study utilised cross-sectional data, which may not offer the concrete causal inferences that a longitudinal dataset provides. Second, the study focused on the southern region of Nigeria and needs to extend to the northern region for a better appreciation of the findings. Third, the study only looked on the moderating variables that influence the link between environmental strategy and economic performance; a moderated-mediation or mediated-moderation analysis could potentially provide a more comprehensive framework. Fourth, the study focused only on the manufacturing sector; future research can consider the service sector to determine the research's applicability.

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EFFECT OF DIVIDEND POLICY ON FINANCIAL PERFORMANCE OF QUOTED CONSUMER GOODS FIRMS IN NIGERIA

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Abstract

This study investigated the impact of dividend policy on the financial performance of listed consumer goods companies in Nigeria. The main objective of this study is to investigate the impact of dividend policy on the financial performance of listed consumer goods companies in Nigeria. An ex-post (post-hoc) research design was used. The study used this design to investigate the impact of different dividend policies adopted by companies over the years on the financial performance of listed consumer goods companies in Nigeria. The population of this study included all 21 consumer goods companies listed on the Nigerian Stock Exchange from 2013 to 2022. This study used secondary data: financial statement data, including statement of comprehensive income and balance sheet, from each company's website from 2013 to 2022. Results: These results provide valuable insights into the factors that affect earnings per share in terms of dividend-related variables. They suggest that the level of dividend coverage ratio is an important factor to consider when analyzing and predicting earnings per share. However, dividend stability does not seem to have a significant impact on earnings per share. Recommendation: The company should increase the amount of dividend per share paid to shareholders as this may lead to improved company performance.

Keywords: Dividend Policy, EPS DCR & DS

Introduction

Dividend policy in corporate finance is the decision made by company management regarding the amount and timing of cash payments to the company's shareholders. Dividend policy is an important part of today's business organizations as it can affect capital structure, stock price, and company performance. Companies have to find a balance between growing the company and paying dividends to shareholders. There are many factors that affect the performance of a business organization, one of which is dividend policy. Dividend policy acts as a mechanism to curb management opportunism.

The relationship between dividend policy and business performance cannot be overemphasized. Particularly in Nigeria, there are ongoing concerns at the regulatory level regarding dividend policy in Nigeria at present. The Nigerian Exchange Limited (2023) noted that unclaimed dividends

recorded a worrying steady increase, reaching a record N158.44 billion in 2023. This may not be unrelated to the dividend policies of most companies. However, it has been noted that while regulators have begun to digitize payments, unpaid dividends continue to grow as the nature of the payments is primarily physical. However, the Securities and Exchange Commission (SEC Nigeria) is undertaking regulatory efforts to improve the overall efficiency of dividends in Nigerian stocks (Nigerian Exchange Limited, 2023). The problem of unclaimed dividends persists. Notable are Nestle's huge losses of over 104 billion naira and other consumer goods (Nigerian Exchange Limited, 2024).

Previous studies on dividend policy have focused on board attributes (Tahir et al., 2020; Bake et al., 2020), bankruptcy laws and creditors' rights (Jadiyappa & Kakani, 2023), while a recent study by Stiawan et al. (2024) investigated the determinants of banks' dividend policy. These studies (Tahir et al., 2020; Bake et al., 2020 & Jadiyappa &

Kakani, 2023) did not explore the impact of the policy on financial performance, nor were they conducted with Nigeria, specifically the consumer goods industry, in mind. It appears that banks are facing performance issues. A study by Chukwuma et al., however, looked at dividend policy and corporate financial performance in 2020, limited to the period prior to 2020, and also failed to identify the rationale for these effects. Moreover, the study excluded recent performance and dividend payout issues identified by the Nigerian Exchange (2023). It is against this backdrop that this study investigates the impact of dividend policy on the performance of listed consumer goods companies in Nigeria. The main objective of this study is to investigate the impact of dividend policy on the financial performance of listed consumer goods companies in Nigeria.

Research Questions

- i. How does dividend coverage ratio (DCR) effect on financial performance of quoted consumer goods firms in Nigeria?
- ii. How does dividend stability (DS) effect on financial performance of quoted consumer goods firms in Nigeria?

Hypotheses

Ho1: Dividend coverage ratio (DCR) has no significant effect on financial performance of quoted consumer goods firms in Nigeria.

Ho2: Dividend stability (DS) has no significant effect on financial performance of quoted consumer goods firms in Nigeria.

Literature Review

Dividend Policy

Alsamhi and Fuad (2022) attempted to analyze how the pandemic affected certain sectors of Indian companies in terms of financial performance. The results of the study revealed differences across various sectors. The overall analysis of the study showed that a company's net profit is the

most important factor affecting financial performance. El Ammari (2021) investigated the moderating effect of the crisis period on dividend payout policy, considering the impact of CEO duality and ownership concentration.

Several dividend policy measures have been employed in the literature, and this study used three variables of dividend policy: dividend payout ratio (DPR), dividend yield ratio (DYR) and dividend per share (DPS) as used in the studies of Abu and Adebayo (2020), Ali Baba, Ahmodu, Ogbeide, and Olariye (2017), Ubesie, Emejulu, and Iyidiobi (2020), and Wajid, Arshad, Nazim, Bakhtiar, and Qureshi (2014).

Dividend policy is a statement guiding the payment or appropriation of profit between a firm and its residual owners. It is a statement clarifying the proportion of profit that should be paid out as dividend to shareholders taking cognizance of the organization environment and the expectations of the shareholders (Oladipupo, 2017).

Dividend Coverage Ratio

Abbas et al. (2021) investigated the impact of corporate governance (board size and composition) and dividend distribution behavior on financial performance. The study used panel data including a sample of five major sectors in Pakistan (cement, textile, cardboard and paper, energy, oil and gas) and covered the period 2006-2016. They used board size and composition as a measure of corporate governance and dividend coverage ratio to measure dividend payout behavior. Return on assets and return on equity were used to measure performance constituting the dependent variable. They analyzed the data using panel regression model. The results showed that there was a significant positive relationship between dividend coverage and corporate performance, determined by calculating the correlation coefficient between the independent and dependent variables.

Nwankwo et al. (2021) investigated in their study how dividend policy affected the value

per share of consumer goods manufacturers in Nigeria. Dividend rate was one of the independent variables used as a measure of the impact of dividend policy on value per share. The study used a post-mortem approach to collect data from the accounts and annual reports of three sample companies: Nigerian Breweries Plc, Cadbury Nigeria Plc, and Guinness Nigeria PLC. They used SPSS v. 20.0 to analyze the data, and the researchers used a simple regression model to estimate the effect of the independent variables on the dependent variable. Their findings show that DC has a significant impact on the market price per share of consumer goods companies in Nigeria.

Dividend Stability

To gain a deeper understanding of how corporate diversification and financial stability affect a company's overall economic success, Jamil (2022), Mehmood, Hunjra, and Cani (2019) conducted a study. Information for the study was provided by 520 manufacturing companies from Pakistan, India, Sri Lanka, and Bangladesh. The researchers used panel data from 2004 to 2017 to examine the results. A two-stage dynamic panel methodology was used to evaluate the assumptions: A company's financial profitability is significantly affected by product and geographic diversification. The study also showed that the capital structure and dividend policy of a company have a significant impact on financial performance.

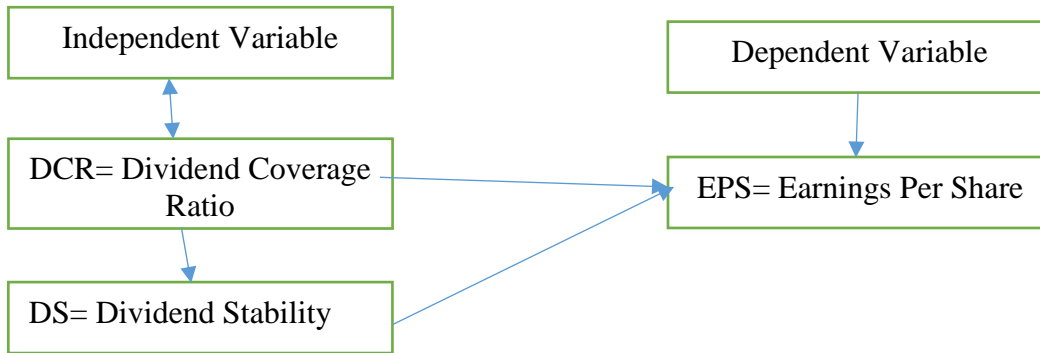
Similarly, Adaoglu (2000) investigated the dividend policies of companies listed on the Istanbul Stock Exchange. In contrast to the empirical evidence suggesting stability in the dividend behavior of companies in developed capital markets, the empirical results indicate that Turkish companies pursue an unstable cash dividend policy. Ghassan Omet (2000), in his study "Dividend Policy Behavior in the Jordanian Capital Market" covering the period 1985-1999, concludes that Jordanian companies pursue a stable cash dividend policy. Furthermore, the results indicate that the introduction of a 10 percent tax rate on

dividends in 1996 did not result in significant changes in dividend policy.

Financial Performance

Murtaza, Noor-Ud-Din, Aguir, and Batool (2020) calculated how the financial performance of Pakistan Chemical Zone companies is affected by ownership concentration and dividend policy. Secondary data for this study was collected through annual company appraisals from 2012 to 2017. Generalized least squares method was used for this analysis. The results showed that there is a direct relationship between self-centeredness and business success. It is a common misconception that a large number of shareholders can resolve conflicts between shareholders and management. Dividend distribution also has a significant positive impact on the overall performance of the firm. FL and quantity have a negative impact on the overall performance of the firm. These implications may be relevant for policy makers and academic research and may also be useful for managers and policy makers.

El Ammari, A. (2021) most corporate governance studies test the relationship or correlation between ownership structure (OS), dividend policy (DP), and financial performance (FP). However, little attention has been paid to the direction of causality between financial performance and corporate governance variables (such as OS and DP). This study fills this gap by examining the direction of causality using bootstrap panel Granger non-causality tests analyzing panel data on selected listed companies in an emerging economy, namely Tunisia. Based on a sample of 154 firm-year observations spanning the period 1996-2017, and using the approaches of Kónya (2006) and Dumitrescu and Hurlin (2012), the results indicate the existence of both unidirectional and bidirectional significant causal relationships between pairs of variables used. These findings are consistent with previous studies that have found a causal relationship between certain corporate governance measures and financial performance, either from the latter to the former or in both senses.



Theoretical Review

To drive this study, the MM Irrelevance Theory, Signaling Theory of Dividends and Bird in Hand Theory were succinctly discussed. However, this study will be anchored on the bird in hand theory as it provides a more suitable theoretical explanation for the topic.

Empirical Review

Kanwal and Hameed (2017) investigated the relationship between dividend payout ratio and financial performance of companies. They used net cash after tax, ROE, ROA, and dividend payout ratio as value values and analyzed using correlation with linear regression. The study shows that dividend distribution has a positive impact on the financial performance of companies. The conclusion is that dividend payout ratio has a significant impact on corporate performance.

Okoro et al. (2018) studied the determinants of dividend policy of nine consumer goods companies listed on the Nigerian Stock Exchange from 2006 to 2015. The variables studied are dividend payout ratio (dependent variable), market value, profitability (among others), leverage, and past performance. Dividend (independent variable). The analytical technique is multiple regression. The results show that market value and past dividends have a positive and significant impact on dividend payout. Debt ratio and total assets (firm size) showed a non-linear and statistically insignificant effect on dividend distribution. Profitability (earnings per share) in the Nigerian consumer goods

sector was good and had a marginal effect on dividend payouts.

Ogundajo et al. (2019) investigated how accounting information can be used to predict earnings (dividends) of 36 manufacturing companies. The independent variables in the study are dividend lag, debt ratio, sales growth, earnings per share, operating cash flow, and firm size, while the dependent variable is dividends. Panel fixed effects method was used to analyze the data set spanning from 1997 to 2016. The lagged effects of dividends, debt ratio, and sales growth indicate a linear and significant impact of dividend payments. It was also shown that earnings per share, operating cash flow, and company size have a nonlinear relationship with dividend payout ratio.

Moraquinho et al. (2018) investigated the determinants of dividend policy of 15 NSE listed banks. The study period was from 2006 to 2015, i.e., a period of nine years. The dependent variable was dividend policy and the independent variables were firm size, debt ratio, profitability, board size, financial crisis, political factors, and board independence. The data was analyzed and estimated using panel regression techniques. The study reported that firm size and return on equity (ROE) are positive. Financial leverage, board size, political factors and financial crisis dummy showed negative relationship with dividend policy. Bank size and political factors dummy were statistically significant while all other variables were statistically insignificant.

These various findings also provide scope for a more detailed study of the determinants of dividend policy (although in a different sector in the present data). The hypothesis is that the empirical results may vary in one direction or the other, lending credence to any of the conclusions contained in the existing literature.

Methodology

This study uses an ex-post (post facto) research design. As the study was conducted after the event, this design is used to investigate the impact of different dividend policies adopted by companies over the years on the financial performance of listed consumer goods companies in Nigeria. The population of this study included all 21 consumer goods companies listed on the Nigerian Exchange Group from 2013 to 2022.

Secondary data is used in this study. Data was obtained from annual financial statements including statement of comprehensive income and balance sheet from 2013 to 2022 from the websites of the respective companies. Data analysis included regression analysis technique to determine the impact of dividend policy on financial performance of listed consumer goods companies in Nigeria. The indicators EPS used to measure corporate performance and dividend policy represented by DCR and DS were found to be significant factors affecting corporate performance. EPS, an indicator used to measure corporate performance, was selected as the model to assess the impact and importance of dividend policy on corporate performance.

Model Specification

$Y = f(X)$, $EPS = f(E) =$ Dependent Variable (DCR & DS)

Independent Variables

$$EPS = \alpha + \beta_3 DCR_{it} + \beta_4 DS_{it} + \varepsilon_{it}$$

Where: EPS= Earnings Per Share

DCR= Dividend Coverage Ratio

DS= Dividend Stability

α = constant

ε = error term which represents the combined effect of omitted variables

$\beta_1 - \beta_4$ = Coefficient of determinants

Decision rule: From the findings of the study, if the independent variables (DCR & DS,) affected dependent variable (Earnings Per Share (EPS)) the null hypothesis will be rejected or otherwise accepted. Regression

analysis is normally used to examine the relationship and hence the study determined relationship between one dependent variable and multiple independent variables.

Data Analysis

Descriptive Statistics

Variable	Obs	Mean	Std. dev.	Min	Max
EPS	210	1.326778	1.382297	-2.99	4.67
DCR	210	.802109	1.298216	0	6.1909
DS	210	.8011232	159.3723	-1716.98	642.9083

Stata output 2024

Earnings per Share (EPS) The consumer goods firms generated an average EPS of 1.326778, reflecting the earnings generated per share. There was observed variability in EPS among the firms, with a standard deviation of 1.382297. The range of EPS values observed in the sample ranged from -2.99 (minimum) to 4.67 (maximum).

4.2.2 Correlation Matrix

The correlational matrix provides information about the relationships between the variables measured in the table. Each value in the matrix represents the correlation coefficient between two variable.

Table 4.2

Variables	(1)	(2)	(3)
(1) EPS	1.000		
(2) DCR	-0.420	1.000	
(3) DS	0.152	-0.016	1.000

Stata output2024

As for earnings per share, there is a weak positive correlation with DPR ($r = 0.0414$), suggesting that companies with higher earnings per share can pay out a slightly higher percentage of their profits as dividends. This result suggests that companies with better earnings per share can allocate a larger portion of their profits to dividend payments. However, there is a moderate negative correlation between EPS and DCR ($r = -0.4197$), suggesting that companies with higher EPS tend to have lower dividend coverage ratios. This suggests that these companies may struggle to secure sufficient dividend payments despite growing earnings per share.

In addition, EPS has a moderate negative correlation ($r = -0.3509$) with DY, meaning that companies with higher EPS may have lower dividend yields. This suggests that the dividend yields that investors receive from these companies may be relatively low, despite the increasing earnings per share.

In addition, DCR shows a moderate positive correlation ($r = 0.5416$) with DY, suggesting that companies with higher dividend coverage ratios tend to have higher dividend yields. This suggests that companies with stronger dividend coverage may offer higher dividend yields to investors.

Finally, DS has a weak negative correlation ($r = -0.1987$) with DY, meaning that companies with more stable dividend payment history

may have slightly lower dividend yields. This result suggests that companies that have a history of paying stable dividends may offer investors relatively low dividend yields.

Correlation analysis shows various relationships between financial indicators. Companies with higher ROA tend to have higher ROE, but may have slightly lower EPS, DPS, and DCR. They may also have slightly lower dividend yields. Similarly, companies with higher ROE tend to have higher EPS and DPR, but may have slightly

lower dividend coverage ratios and dividend yields. EPS has a weak positive correlation with DPR, but a moderate negative correlation with DCR and DY. DPS has a strong positive correlation with DCR and DY. DPR has a weak negative correlation with DY, while DCR has a moderate positive correlation with DY. Finally, DS has a weak negative correlation with DY. These insights provide insight into the interactions between key financial indicators and can serve as a basis for considering investment decisions and dividend policies.

Table 4.3 Linear Regression

EPS Earning Per Share and Dividend Policy

Eps	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
dps_	39.509	12.646	3.12	.004	13.682	65.336	***
Dcr	-1.042	.29	-3.59	.001	-1.634	-.449	***
Ds	0	.001	-0.13	.896	-.002	.002	
Constant	1.784	.268	6.66	0	1.237	2.332	***
Mean dependent var		1.327	SD dependent var			1.382	
R-squared		0.405	Number of obs			36	
F-test		4.087	Prob > F			0.006	
Akaike crit. (AIC)		117.758	Bayesian crit. (BIC)			127.260	

*** $p < .01$, ** $p < .05$, * $p < .1$

The regression analysis provides valuable insights into the relationship between EPS (Earnings Per Share) and the independent variables DCR (Dividend Coverage Ratio) and DS (Dividend Stability). DCR: The coefficient for DCR is estimated to be -1.042, indicating a negative relationship between DCR and EPS, suggesting that higher DCR values are associated with lower EPS values. The coefficient is statistically significant at the 1% level ($p = 0.001$), meaning that the relationship is unlikely to be due to chance. The 95% confidence interval for the coefficient ranges from -1.634 to -0.449, highlighting the significance and direction of the relationship. DS: The coefficient of DS is estimated to be 0, which means that there is no relationship between DS and EPS. The coefficient is not statistically significant ($p = 0.896$), indicating

that the observed association is likely due to chance. Therefore, based on the data provided, we do not find a significant effect of DS on EPS.

Constant term: The constant term in the regression equation represents the expected value of EPS if all independent variables are set to zero. In this case, the constant term is estimated to be 1.784, which is statistically significant at the 1% level ($p < 0.01$). This suggests that the constant term contributes significantly to EPS prediction independent of other variables.

Additional information: The R-squared value of 0.405 indicates that approximately 40.5% of the variation in EPS can be explained by the included independent variables. The F-test with a P-value of 0.006 confirms that the

overall regression model is statistically significant, which means that at least one of the independent variables has a significant relationship with EPS. The overall regression results indicate that DCR has a significant relationship with EPS. In particular, DPS and DY have a negative impact on EPS, and DCR also has a negative impact. In contrast, DS does not show a significant relationship with EPS.

DISCUSSION OF FINDINGS

Earnings per Share and Dividend Policy

The results of the regression analysis are shown in Table 1. The analysis examined the relationship between the dependent variable "Earnings per Share" (EPS) and several independent variables, dividend coverage ratio (DCR) and dividend stability (DS). The coefficient estimates provide insight into the relationship between these variables and EPS. The coefficient of DCR is negative and statistically significant, meaning that an increase in DCR is associated with a decrease in EPS. On the other hand, the coefficient of DS is not statistically significant with a P-value of 0.896, indicating that DS does not have a significant impact on EPS. DCR is negatively related to EPS, i.e., an increase in DCR is associated with a decrease in EPS. This suggests that companies with higher DCR, which indicates the ability to cover dividend payments with profits, tend to have lower EPS. Similarly, DS does not have a significant effect on EPS. This means that dividend stability, as measured by DS, does not have a significant impact on a company's EPS.

These findings provide valuable insights into factors that affect EPS in the context of dividend-related variables. They suggest that the level of DCR is an important factor to consider when analysing and forecasting earnings per share. However, DS does not seem to have a significant impact on earnings per share. These results contribute to a deeper understanding of the relationship between dividend-related variables and earnings per share, which can inform financial decisions and investment strategies in different

contexts. These insights provide valuable insights for investors, financial analysts and decision makers. They highlight the importance of considering dividend-related variables such as DCR when assessing a company's earnings potential. Understanding the relationship between these variables and earnings per share allows stakeholders to make more informed decisions regarding dividend policy, investment strategies and financial planning.

SUMMARY

Dividend policy in the field of corporate finance is the decision made by the management of a company as to the amount and timing of dividend payment to shareholders. The decision on the amount of dividend is an important decision for a company as it depends heavily on the company's performance. Considering that the nature of the relationship between a company's financial performance and dividend policy has been a subject of unresolved debate among researchers for quite some time, the objective of this study was to investigate the impact of dividend policy on the financial performance of consumer goods companies listed on the Nigerian Exchange Group. The variables considered are dividend per share, dividend payout ratio, earnings per share and book value per share. In this way, this study could make a significant contribution to the existing literature on corporate finance in the Nigerian context. The study is based on MM irrelevance theory and signaling theory.

An ex-post research design was chosen for the study. The population of the study included all 21 consumer goods companies listed on the Nigerian Stock Exchange between 2013 and 2022. However, the study employed all companies as the sample size for the study. Secondary data sources were obtained from the published financial statements of the companies for the period under study. The study used panel regression to analyze the data, and the results showed that dividend per share, dividend payout ratio,

and earnings per share have a significant positive impact on financial performance, while book value per share has a small negative impact on financial performance.

CONCLUSION

Based on the research findings, it is concluded that earnings per share has a significant impact on the financial performance of listed consumer goods companies in Nigeria. Dividend payout ratio has a positive and significant impact on the financial performance of companies in the study area. This suggests that as dividend payout ratio increases, the financial performance of the study companies improves. This suggests that dividend payment plays a key role in increasing the profitability of companies. Companies that have consistently high profits are more likely to pay high dividends to their shareholders.

RECOMMENDATION

Based on the findings and conclusion it was recommended thus:

1. Companies should improve on the amount of dividend per share paid to shareholders as this can trigger the companies to improve their performance. The ratio of payment to dividend should also be improved as this can bring about better performance standard. The management of the companies under study should ensure that they have a good and robust dividend payout ratio policy in place that can enhance their level of financial performance and also attract investments from investors, because this study found dividend payout ratio positively affect financial performance of companies under study.
2. The decision on earnings of shareholders should also be considered as this can make managers to employ the possible ways of generating high earnings for the company.

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IMPACT OF ISLAMIC BANKING ON MICRO SCALE ENTREPRENEURSHIP SURVIVAL IN NIGERIA

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Abstract

*This study investigated the influence of Islamic Banking on Micro Scale Entrepreneurship in Nigeria by surveying customers of selected Islamic bank branches in Abuja Nasarawa and Lagos States, Nigeria. The population of the study comprises three hundred (300) customers selected within the study area are one hundred and seventy one(171) customers was sampled using multi-stage sampling techniques for the selection of participants. The study adopted survey design and the research utilized descriptive and inferential statistics, frequencies table, and simple linear regression to analyze the data. **Findings also reveal that** interest-free loans, also known as Islamic loans or Sharia-compliant financing, are a key feature of Islamic banking. Instead, Islamic banks offer financing arrangements that adhere to Sharia principles, such as profit-sharing agreements (Mudaraba) and cost-plus sales contracts (Murabaha), Musharakah (Joint venture). Recommendations were made for Islamic banks to enhance their implementation of interest-free loans, deposit contributions, and profit-sharing schemes to build customer trust and attract more clients in Islamic banking, depositors are considered partners in the bank's investment activities, and profits are shared based on predetermined ratios. Additionally, it was suggested that Sharia-compliant finance institutions should reassess their profit-sharing practices to address customer concerns regarding losses. Also, Islamic banks should increase their offering of interest free loan to micro-scale entrepreneurs and incentivize deposit contribution from micro-scale entrepreneurs considering their positive impact on their survival.*

Keywords: Islamic, Banking, Micro-Scale. Entrepreneurship, Nigeria.

Introduction

Globally, Islamic banking or Islamic finance refers to financial practices that adhere to Sharia (Islamic law) principles. Islamic banking, also known as Islamic finance refer to a system of banking that adheres to the principles of Sharia Law (Islamic law) that take the forms of Murabahah (cost-plus), Wadiah (safe keeping), Ijara (renting), and Mudarabah (profit-sharing and loss-bearing) and musharakah (Joint venture). The concept of riba, or usury, is outlawed in Islamic finance. Interest on loans is referred to as riba, and doing business with goods like pork or alcohol that are deemed haram (forbidden) by Islamic law is strictly prohibited. The principles of Sharia law, which regulates many facets of Muslim life, including economic activity, serve as the foundation for

Islamic banking and finance. The ban on interest (riba) is one of the main tenets of Islamic banking. Islamic banks provide financing through profit-sharing programs like Mudarabah and Musharakah rather than charging interest on loans. In a Mudarabah, one party finances the enterprise while the other runs it, and profits are divided according to a predetermined ratio. In a musharakah partnership, each partner contributes capital and splits profits and losses based on their individual investments. (Mohammed et al, 2020: Institute of Islamic banking, 2016: Islamic financial services industry, stability report, 2023).

In Nigeria, micro-scale entrepreneurship is essential to the country's economy because it creates jobs, encourages innovation, and boosts GDP. To make money and provide for their families, many people work in small-

scale industries like trading, farming, crafts, and services (Tabash,2017: Tarmizi,2017: Asma,2023). Because Islamic banking forbids *riba*, it is not permitted to offer loans with interest. This makes sure that the borrower and the lender split the investment's risks and rewards. Shariah-compliant deposit products are also provided by Islamic banks. Customers can make deposits into various accounts that may be used for investment purposes following ethical guidelines. The entrepreneur and the bank split the profits from these endeavors according to predetermined guidelines. This is consistent with the values of Islamic finance, which place a strong emphasis on profit sharing and risk sharing. (Ali, et al,2021). Usury (*riba*), uncertainty or gambling (*gharar*), and dealing with interest-bearing instruments or pork products (*haram*) are some of these forbidden practices. Islamic banks were founded to provide financial services that followed these guidelines in response to this need. From the late 20th century, when Islamic banking first emerged, it has grown significantly.(Mohammed et al ,2021). Instead, it has been accused of offering banking products that merely meet the formal requirements of Islamic law while employing tactics to disguise interest, resulting in “higher costs and greater risks” compared to conventional banks (*ribawi*) banks (Mohammed et al, 2021: Mohammed et al,2020).

Statement of the Problem

The high rate of interest charges by conventional banks that have direct bearing on Micro Scale Entrepreneurship at the early stage of development when their expenses surpass their income could be a matter of concern in this global business environment. Despite the potential of Islamic banking to support micro-scale entrepreneurship in Nigeria, the sector faces significant challenges in accessing Sharia-compliant financial services, hindering the survival and growth of micro-enterprises. This results in limited financial inclusion, constrained business expansion, inadequate job creation and reduced economic growth. With the

mode of operations by Islamic banking system there is huge gap between Islamic finance and Micro-Scale Entrepreneurs in the area of financing such free interest rate, profit sharing scheme between investors (customers). The first Islamic bank was established in Pakistan known as Meezan bank, and many more was established to operate based on Islamic banking principles that prohibit interest (*riba*). From inception Islamic banks witnessed development, growth and sustainability of their operation and they continued to flourish in Pakistan. But when Islamic banks extended their operation in Sub-Saharan African countries, lack of awareness, more clarification on free interest loan, deposit contribution scheme that did not allowed customers get interest on saving, Profit sharing scheme, dishonesty and corruption in sub-Saharan countries made it difficult for Islamic banks to get enough customers. Also, insufficient Sharia expert and deficiently in regulatory framework in the country is among the difficulties encountered by Islamic banks. The justification for choosing this topic is that Nigeria has a large Muslim population (approximately 70% of the population).Also, Micro-scale contribute significantly to Nigeria’s GDP and employment generation. Additionally, the Islamic banking offers a unique financial model aligned with Islamic principles, promoting financial inclusion and ethical business practices. The Islamic banking financial model benefits entrepreneurship ecosystem in the following area such as increased access to finance, promote financial inclusion, poverty reduction and encouraging ethical business practices. Based on the above submission the study intent to examine Islamic banking on Micro-scale entrepreneurship survival in Nigeria.

Research Objective

The general objective of this study is to examine Islamic banking and Micro-scale Entrepreneurship survival in Nigeria. The specific objectives are to:

- a. examine the effect of interest free loan on the viability of Micro-scale Entrepreneurship survival in Nigeria.

- b. investigate the impact of investment under profit and loss sharing scheme of Micro scale Entrepreneurship survival in Nigeria.
- c. examine the relationship between deposit contribution and Micro scale Entrepreneurship survival in Nigeria.

Research Questions

The following research questions are set to guide the study:

- a. How does interest free loan influence the development of Micro-scale Entrepreneurship survival in Nigeria?
- b. What impact does investment under profit and loss sharing scheme have on Micro Scale Entrepreneurship survival in Nigeria?
- c. How does deposit contribution impact Micro Scale Entrepreneurship survival in Nigeria?
- d.

Research Hypotheses

H₀₁: There is no significance impact of free interest loan on Micro-scale Entrepreneurship survival in Nigeria.

H₀₂: There is no significance relationship between Investment under profit and loss sharing scheme and Micro-scale Entrepreneurship survival in Nigeria.

H₀₃: There is no significant impact of deposit contribution by Islamic banks customers on Micro- scale Entrepreneurship survival in Nigeria.

Literature Review

In order to become familiar with the contents of the literature on Islamic banking as determinants on Micro Scale Entrepreneurship survival in Nigeria, the study reviewed the body of work that has already been done on the subject.

Free Interest Rate

The tenets of Islamic finance, which forbid the collection or payment of interest (riba), govern how Islamic banks conduct business. Rather, Sharia law which places a strong emphasis on moral and just financial practices is followed by Islamic banking. The idea of interest-free loans is one of the distinctive

services provided by Islamic banks. A loan with no interest is referred to as a Qard al-Hasan in Islamic finance. (AlDaouk,2022: Warsame & Mohammed,2009). When a lender gives money to a borrower without collecting interest, it's referred to as a charitable loan. Only the principal amount borrowed must be repaid by the borrower. Qard al-Hasan's mission is to help those in need without taking advantage of their financial circumstances by charging interest. The only amount owed by the borrower is the principal, which is free of interest. (Mohammed et al, 2020: Adusei,2016).

Investment Under profit and loss Sharing Scheme

Maha and Ibrahim (2023) noted that investments made under Islamic banking's profit-and-loss sharing plan are subject to a 70:30 profit-sharing agreement between the bank and depositor. It is agreed that the funds will stay with the bank for the period of five years. Profits are distributed according to the previously established ratio: however, any losses must be assumed by the client (depositor). Other Islamic banking practices within the Sharia banking system include Wadiah (safekeeping), Murabah (cost-plus), Ijara (leasing), Musharakah (Joint venture) and Mudarabah (profit sharing and loss-bearing). All income groups can profit from Islamic banking in the financial market since those who provide the liquidity (money) that manufacturers need to make their goods also share in the profits. The Muslim faith forbids interest on loans, and the Islamic banking system conforms to this prohibition. (Irfan,2015: Mohammed,2015: Alharbi,2017).

Deposit Contribution

Customers of Islamic banks are usually offered three primary deposit product types: investment accounts, savings accounts, and current accounts. Islamic banking current accounts operate in a manner akin to that of traditional current accounts. Customers are able to deposit money with them, which they are free to withdraw whenever they want.

However, because Islamic finance forbids interest due to the prohibition of *riba* (usury), Islamic banks do not pay interest on current account balances. Additionally, savings accounts that give clients a secure location to keep their money while earning a profit-sharing return are provided by Islamic banks. Another category of deposit products provided by Islamic banks are investment accounts. Islamic savings accounts are based on Sharia Law. Islamic banks don't pay interest on deposit accounts because they are trading houses rather than places where money is lent without charging interest. (Ledhem et al, 2021; Abdul et al, 2020; Warsame et al, 2009).

Micro Scale Entrepreneurship Survival

A crucial component of small business management is micro scale entrepreneurship survival, which focuses on micro enterprises' capacity to endure and prosper in difficult economic conditions. These companies are known for their tiny size, scarce resources, and propensity to serve niche markets. For micro-scale business owners, survival entails a variety of tactics and elements that support their long-term prosperity. Micro scale entrepreneurship refers to being a micro-scale entrepreneur and the creator of a small company that was founded with less than ten (100 with little funding. Generally speaking, these ultra-small businesses are those that employ fewer than ten people and start out with very little capital. A micro-business is a small business that employs a small number of people and was founded with a small amount of capital, either borrowed from a bank or cooperative society, or saved by the owner. (Mohammed et al, 2021).

Empirical Review

In 2020, Mohammed and Ahmed carried out a study on Islam and Entrepreneurship." The function of Islamic finance. The research looks at the connection between entrepreneurship and religion, which is used to explain why Muslim unemployment rates are so high in the majority of the world's nations. The study adopted quantitative approach, utilizing multivariate regression

analysis across 69 nations. Results indicate that the detrimental impact on Islam and entrepreneurship only extends to Sharia compliance in the financial sector. In certain Islamic nations where Sharia compliance is effectively implemented in finance, this detrimental effect has vanished.

Yudhi et al, (2020) looked at the factors religion, religiosity, and Islamic bank location that influence Micro, Small, and Medium-Sized Enterprises (MSME) to become Islamic bank customers. The goal of the study was to determine the factors that influence Micro, Small, and Medium-Sized Enterprises' (MSME) decision to open an account with an Islamic bank given that these institutions function as free-interest banks. Desk research and a review of the literature were used in the study. Research demonstrates that customers are better off selecting Islamic banks the more religiously inclined they are.

Maha et al, (2023) investigate the Middle Eastern and North African (MENA) region's Islamic banks' internal and external factors that affected their financial stability between 2006 and 2017. Z-Score was used in the study's quantitative research methodology to assess Islamic banks' stability; factors such as size, level of government, and constitution have a negative bearing. The study suggests increasing Islamic banks' capital bases and review of policies and guidelines for operation.

Mohammed et al, (2021) investigate Islamic finance for entrepreneurship activities and economic growth: a parametric and non-parametric analysis from Malaysia was carried out with aimed to illustrate the relationship between the growth of entrepreneurship in Malaysia and Islamic finance, the study used parametric bootstrapped quartile regression. Research indicates that the application of Islamic finance to entrepreneurship fosters economic development, growth and survival of entrepreneurial ventures in Nigeria.

Theoretical Review

Islamic banking, finance, and Sharia compliant finance have adopted the Islamic Normative Theory of Profit (INTP)

worldwide. The theory is deemed appropriate for this study.

Islamic Normative Theory of Profit

Ibn al-Arabi introduced the Islamic theory of profit approximately in 1148. According to this theory, which focuses on legal profit, *riba* is any increase that doesn't have an equal counter-value (*iwad*). *Iwad* is made up of three parts: earning (*kasb*), liability (*daman*), and risk (*ghunm*). It underlines that a profit is *riba* if it is obtained without a comparable value exchange. The theory encourages the assessment of financial transactions based on economic substance rather than just the legal form of business operations, permitting lenders and investors to make legitimate profits. In a joint partnership, it is forbidden for one partner to pre-specify the amount in the portfolio without taking any risk. This is the first aspect of *Musharakah*. Second, self-leasing is forbidden in Islamic finance procedures by *Ijarah*. Finally, in accordance with Islamic doctrines and principles, profit-sharing cannot be deemed lawful in Islam unless market risk exists. Islamic law governs the operations of Islamic finance, commonly referred to as Sharia-compliant finance. The justification for choosing Islamic theory of profit to underpin this investigation is that the theory aligned with Islamic jurisprudence and Islamic economic that focused on fairness and justice. The concept of *iwad* (equal counter-value) ensures fairness in transactions, which is essential for micro-scale entrepreneurs who require transparent financial services. In addition, the Ibn-Arabi's Islamic profit theory acknowledged profit making as legitimate means of earning a living, which aligned with goal of micro-scale entrepreneurship in Nigeria.

Methodology

The study adopted a survey design, this design was chosen because the sampled elements and the variables are been observed as they are without any attempt to control them. The population of the study comprises of three hundred (300) customers of Islamic banks in Lagos, Nasarawa and Abuja. The study area was Lagos, Nasarawa and FCT,

Abuja, Nigeria. The selection of the area was purposive and convenience. Multi-stage sampling procedures consisting of stratified, purposive and simple random sampling were used to select a total of one hundred and seventy-one (171) respondents using Taro Yamane statistical formula, out of three hundred (300) selected in fifteen Islamic banks branches within the study area. One hundred and seventy-one (171) copies of questionnaire were administered to customers of Islamic banks within the study area only one hundred and seventy-one (171) were retrieved representing 100%, the remaining two copies (2) representing 2% were either lost or not properly filled. The justification for using purposive sampling techniques allows used of specific micro-scale entrepreneurs who have experience with Islamic banking and entrepreneurship that guaranteed informed responses. Also, it allows the investigator collect rich data through interview or focus groups, providing insights into the impact of Islamic banking and is cost effective than probability sampling as it focus on specific group within the study area. In the first stage all the Islamic banks (IBs) within the study area were grouped into three (3) stronger, medium and weaker banks with fewer customers. Finding reveals that interest-free loans, deposit contributions, and investments made under profit-and-loss sharing scheme are leeway for Micro-scale entrepreneurship development in Nigeria. The study used simple linear regression for the analysis. The study concludes that interest-free loans, deposit contributions, and investments made under profit-and-loss sharing schemes, growth and sustainability of entrepreneurs ventures. The study recommends that interest-free loans, deposit contributions, and investments made under profit-and-loss sharing scheme is a leeway for Micro-scale entrepreneurship survival and the study recommends used of the above factors for breakthrough. Also, Islamic banks in Nigeria should increase their offering of Interest free loan and incentivize deposit contribution as this have positive impact on their survival.

Results and Interpretation

Ho₁: There is no significance impact of interest free loan on Micro Scale Entrepreneurship survival

Ho₁: There is significant impact of interest free loan on Micro Scale Entrepreneurship survival

Table 1: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.466 ^a	.217	.191	.54028

a. Predictors: (Constant), Micro Scale Entrepreneurship survival

The dependent variable (Micro Scale Entrepreneurship Survival) in the table above illustrates how the model (interest-free loan) explains the model summary variance. The R square value in this instance is .217. When expressed as a percentage, this indicates that 21.7% of the variance in Micro Scale Entrepreneurship Survival can be explained by the model (interest-free loan). The corrected R square is .191, and the standard error of estimate is .54028, indicating the error term that the model did not account for.

Table 2: ANOVA^a

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	11.131	1	11.131	3.040	.004 ^b
	Residual	142.382	39	3.651		
	Total	153.513	40			

a. Dependent Variable: Micro Scale Entrepreneurship survival

b. Predictors: (Constant), Interest free loan

The evaluation of the outcome's statistical significance is displayed in the table above. To ascertain whether the null hypothesis is statistically significant, the ANOVA results test it. The corresponding p-value (Sig.) is 0.004, and the F-statistic is 3.04. This suggests that there is statistical significance in the regression model as a whole for explaining the variability in the dependent

variable. With 39 degrees of freedom and a mean square of 3.65, the residual error's sum of squares is 142.38. In this instance, we reject the null hypothesis and come to the conclusion that at least one coefficient in the regression model is statistically significant, with an F-statistic of 3.04 and a significance level of 0.004.

Table 3: Coefficients

Dependent variable: Micro Scale Entrepreneurship survival

There are a few important elements in the provided regression analysis results that require interpretation: In this model, the constant term (1 (Constant)) is 3.0537. The interest free Loan variable has a standardized coefficient of 0.080 and an unstandardized coefficient of 0.697. With a standardized coefficient of 0.567, the unstandardized coefficient for the interest free loan variable is 0.697. The coefficient result reveals that an increase in a unit of interest free loan

Hypotheses Two

H02: There is no significance impact of deposit contribution on Micro-scale Entrepreneurship survival

Model	Unstandardized Coefficient		Standardized Coefficients	T	Sign.
	B	std.	Beta		
(Constant)	3.0537.697			7.697	.006
Interest free loan	0.948		.567	.1290	.000
Deposit Contribution	0.809		.080	.4092	.003
Investment under profit and sharing	0.56.234		.098	.1340	.024
	0.678.234		.324	1.653	.009

H02: There is significant impact of deposit contribution on Micro-scale Entrepreneurship survival.

Table 4: Model Summary

Model	R	R Square	R Square Adjusted	Standard Error of Estimate
1	0.49	.023	.181	1.22558

The model summary is shown in the table above. It displays the percentage of variance in the dependent variable (survival of micro-scale entrepreneurship) that can be accounted for by the model (investment under profit-sharing and loan-sharing arrangements). The R square value in this instance is.048. In percentage terms, this indicates that 4.8% of the variation in deposit contribution can be explained by our mode. The standard error of estimate, which represents the error term that was not included in the model, is 1.22558, whereas the adjusted R square is.023.

Table 5: ANOVA^a

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	2.932	1	2.932	1.952	.0001 ^b
Residual	58.580	39	1.502		
Total	61.512	40			

a. Dependent Variable: Micro Scale Entrepreneurship survival

b. Predictors: (Constant), Profit under loss and sharing scheme ,interest free loan deposit contribution

There is information about a statistical model analysis in the results that are given. The results of an analysis of variance (ANOVA) for a regression model are shown in the table.

The sum of squares attributable to the regression model is represented by this value, 2.932. It shows the extent to which the independent variables in the model can account for the entire variability in the dependent variable. The sum of squares is divided by the corresponding degrees of

freedom to get the mean square. Here for the regression model, it is 1.952. The F-value is a ratio that contrasts the variability that the model explains with the variability that is not explained. These findings suggest that the independent and dependent variables have a statistically significant relationship.

Table 6: Coefficient

Model	Unstandardized Coefficient		Standardized Coefficients	T	Sign.
	B	std.	Beta		
(Constant)					
Interest free loan	3.053	7.697	.456	.6702	.0003
Deposit Contribution	0.948	1.290	.352	.2681	.0002
Investment under profit and sharing	0.8094	1.302	.082	.3895	.0009

Dependent variable: Micro Scale Entrepreneurship survival

The variables free interest loan, deposit contribution, and profit under loss sharing have unstandardized coefficients, standardized coefficients, t-values, and significance levels in the regression analysis results that are provided. The dependent variable is expected to increase by 3.053 units for every unit increase in the deposit contribution, according to the unstandardized coefficient of 7.697. deposit contribution appears to have a significant positive influence on the dependent variable, as

indicated by the standardized coefficient of 456. This variable has a significant positive influence on the dependent variable, as indicated by the standardized coefficient of .8091. Additionally, the low p-value of .0002 and the t-value of 4.092 indicate that this relationship is statistically significant. These findings suggest that the dependent variable is significantly positively impacted by both the free interest loan and the deposit contribution and micro-scale entrepreneurship.

H03: There is no significant impact of investment under profit loss sharing scheme on Micro-scale Entrepreneurship

H03: There is significant impact of investment under profit loss sharing scheme on Micro-scale Entrepreneurship survival.

Table 7: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.622 ^a	.387	.280	.94840

The model summary is displayed in the table above. It illustrates the extent to which the model (profit sharing scheme) explains the

variance in the dependent variable (Micro Scale Entrepreneurship Survival). The R square value in this instance is .387. When

expressed as a percentage, this indicates that 38.7% of the variation in investment under profit loss sharing scheme can be explained by our model (investment under profit loss sharing scheme). The corrected R square is

.280, and the standard error of estimate is .948840, indicating the error term that the model did not account for.

Table 8: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	6.531	1	6.531	7.265	.001 ^b
	Residual	35.079	39	.899		
	Total	41.610	40			

a. Dependent Variable: Micro Scale Entrepreneurship survival

b. Predictors: (Constant), Deposit Contribution, profit sharing scheme and free interest loan

The results of an analysis of variance (ANOVA) for a regression model were displayed in the table above. Below is a summary of the main elements: The variability in the dependent variable that the independent variable(s) in the model explain is shown in the "Regression" section. The regression's sum of squares in this instance is

6.531. The regression model's F-value of 7.265 indicates that the independent and dependent variables have a significant relationship. In summary, these findings support the notion that the independent and dependent variables in the examined regression model have a statistically significant relationship.

Table 9: Coefficient

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Beta			
1	(Constant)					
	Interest free loan	3.7685	4.2314	.2453	4.324	.0002
	Deposit contribution	9.181	3.168	.3456	2.898	.005
	Profit under haring scheme	0.89	.079	.2340	1.129	.0001

Dependent Variable: Micro Scale Entrepreneurship survival

The unstandardized and standardized coefficients for an econometric model also referred to as beta coefficients are displayed in the table. These coefficients, which account for every other variable in the model, show how the dependent variable which is, in this case, not supplied changes when an independent variable changes by one unit. When all independent variables are zero, the constant denotes the regression line's

intercept. In this instance, the model is linked to a constant value of 3.7685. This indicates that the dependent variable has a baseline level of 3.7685 when all other variables are zero. Interest-free loans have a coefficient of 3.7685 at a significance level of .0002, or $p < .05$. The investment under profit loss sharing scheme coefficient is 9.1813, and the significance level is set at .005, or $p < .05$. At a 5% level of confidence, this implies that investment under profit loss sharing scheme and the dependent variable have a statistically

significant relationship. When accounting for other model parameters, an increase of one unit in investment under investment under profit loss sharing scheme results in an approximate increase of 9.1813 units in the dependent variable. Under the investment under profit loss sharing scheme coefficient is 0.89, with a significance level of .001 or $p < .01\%$.

Discussion of Findings

The findings of the regression analysis show that Islamic banking has a favorable influence on the survival of micro-scale entrepreneurship in Nigeria. The results of the ANOVA and coefficient values in hypothesis one with R square .217 showing variance in micro-scale entrepreneurship survival can be explained by interest free loan with adjusted R square 1.91 that support the significance relationship among the variables. The development of micro-scale entrepreneurship in Nigeria is significantly aided by the free interest loan on advances provided by Islamic banks, the benefit beneath misfortune (takaful), the sharing conspiracy (Mudarabah), and the store commitment (wakalah) made by clients of Islamic banks. Also, on deposit contribution the R value 0.48, R square 0.23 and standard error 1.22558, while the ANOVA value for hypothesis two 2.932 with regression model 1.952 shows significant relationship. These factors have a beta value of 0.79, which is statistically significant because the p-value is below 0.05. The R-squared value, which shows how much of the variance in the survival and development of micro-scale entrepreneurship can be explained by the independent variables, is 41.610%. This suggests that these factors account for about 79% of the variation observed in the development of micro-scale entrepreneurship survival. Then, hypothesis three ANOVA results shows R value 6.531 and regression model's F-statistics 7.265, while Beta value 4.2314 and T statistics 4.234, 2.898 and 1.129 respectively. This reveals significance relationship between interest free loan, deposit contribution and investment under

profit loss sharing scheme with micro-scale entrepreneurship survival in Nigeria.

Conclusion

The study's analysis of the aforementioned results demonstrated and established that free interest loan, deposit contributions, and investment under profit loss sharing schemes are viable means of assisting micro-scale entrepreneurs in Nigeria. According to the study's conclusion, all three variables have shown to have a major impact on micro-scale entrepreneurship in Nigeria. However, the three factors such as free interest loan, deposit contribution, and profit under loss and sharing scheme that were previously discussed can be successfully implemented and monitored to ensure the success of micro-scale entrepreneurship. The results of the study show that Islamic banks in Nigeria are very flexible when it comes to encouraging the development of micro-scale entrepreneurship in Nigeria.

Recommendations

Based on the findings and conclusion the study recommends that :

- a. Islamic banks or Sharia compliant lenders at all levels step up their efforts to enforce and implement the policy of offering customers interest-free loan as this has significant impact on micro-scale entrepreneurship survival in Nigeria.
- b. Islamic banks and Sharia compliant financing should examine their investment under profit-loss sharing scheme, as clients are complaining about the bank taking part of the profit while investors, bear all of the losses.
- c. It is recommended that Sharia Compliance Finance review the bank's deposit contribution scheme in order to promote increased savings and ensure the acquisition of new clients.
- d. Islamic banks should provide training and capacity building programs for micro-scale entrepreneurs to enhance their financial literacy and business skills.

- e. Islamic banks should incentivize customers on deposit contribution and its benefits to potential micro-scale entrepreneurs.

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EXAMINING THE IMPACT OF POVERTY ON HEALTH OUTCOMES IN NIGERIA

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Abstract

It is accepted that poorer population experienced worse health outcomes. In Nigeria, majority of the studies examined the impact of health on poverty, with a dearth of evidence on the impact poverty on health. Using annual time series data for the period 1980-2021, this study examined the determinants of health including macroeconomic variables such as literacy rate, poverty rate (proxy by misery index), carbon dioxide emission (in metric tons per capita), physician density ratio (number of patients per physician) and urbanization rate. The data were sought from the World Bank World Development Indicators. Two variables were used to proxy health outcomes, and they were infant mortality rates (IMR) and life expectancy rates at birth (LEX). The data were analysed using Vector Error Model (VECM) and the Variance Decomposition (VDC) were estimated using e-views 9.0. From analyses of the VDC, it can be seen that poverty made a modest contribution to the variance of both IMR and LEX. The contributions of poverty increased steadily through the tenth period. Also, literacy rate made a modest contribution to the variance of IMR and LEX. Analyses of the VECM estimates shows that increase in poverty rate will increase IMR and reduce LEX. Increase in literacy rate will increase LEX and reduce IMR. Improvement in physician density ratio will cause IMR to decline and LEX to improve. Conclusively, the high poverty rate has exacerbated Nigerian health outcomes. In order to improve health outcomes among Nigerians, government should intensify its fight against the multidimensional poverty level in Nigeria, encourage school enrolment and support more people to be trained as healthcare professionals.

1.0 Introduction

It is generally known that poverty poses threat to good health (Arthur & Oaikhenan, 2020). It is true that prolonged poverty leaves poor nations to more vulnerable to social injustice, instability and poor health outcomes (Sede & Ahuru, 2017). Like other developing countries, Nigeria has several development challenges including poor health outcomes and severe level of poverty (Jaiyeola & Bayat, 2020).

Though, Nigeria is an oil-rich nation with many natural resources, a large proportion of its citizens remain in poverty (Jaiyeola & Bayat, 2020). Evidence from the official household survey data from Nigerian National Bureau of Statistics, 30.9% of Nigerians live below the extreme poverty line of \$ 2.15 per person per day (2017 PPP) in 2018/2019 (National Bureau of Statistics, 2023). Reports from the National Bureau of

Statistics from its 2022 multi-dimensional poverty index (MPI) survey, 40.1% of Nigerians are poor according to the 2018/2019 national monetary poverty line and 63% are multidimensionally poor (National Bureau of Statistics, 2022). Poverty results in several deprivations in Nigeria including poor access to sanitation, poor timing in healthcare use, food insecurity and housing (National Bureau of Statistics, 2022). The rising poverty rate in Nigeria can be attributed to several factors including incoherent policies aimed at reducing poverty and a high endemic level of corruption which has hindered effective use of the nation's resources (National Demographic and Health Survey, 2018). It is very improbable that the sustainable development target of the United Nations to eradicate severe poverty by 2030 would be met (Ahuru et al., 2019).

The growing level of poverty in Nigeria has negatively impacted on the health of Nigerians (Ahuru et al., 2020). Due to the rising costs of living, many Nigerians were forced to underuse health services, which has affected their health (Ahuru et al., 2019). For instance, life expectancy rate in Nigeria is currently put at 53 years, which happens to be one of the lowest globally (World Development Indicators, 2020). An ample of Nigerian studies reported that poor health outcomes exacerbate poverty in Nigeria, but a dearth of evidence exists on the impact of poverty on health outcomes (Orji & Okechukwu, 2015; Itari et al., 2018). Hence, this study examined the impact of poverty on health outcomes using annual time series data for the period 1980-2021. The study used misery index to proxy poverty which has not been reported by past Nigerian studies.

Conceptual/ Theoretical Framework and Literature Review

2.1 Conceptual Issues

2.1.1 Poverty and its Measures

According to an analysis of the relevant literature, there isn't really a consensus on what constitutes poverty. This is due to the fact that poverty has multiple effects on facets of human existence. Anyanwu (1997) argues that the lack of a clear and widely recognised definition of poverty stems from the fact that the term has been defined using a variety of criteria. Nonetheless, according to Dauda (2017), poverty is the inability of an individual to meet his/her basic needs. It represents the incapacity to fulfil social and financial responsibilities, which may be brought on by a lack of resources, capabilities, or profitable employment (Central Bank of Nigeria, 2003). The most common method for determining poverty is to use relative income poverty lines. The intricacy of poverty is not fully taken into account by this measure, which only shows a portion of the situation. Additional indicators of poverty include:

(a) Measuring the level of deprivations (this is measured by combining relative income lines with deprivation indicators).

(b) The Budget Standard Approach: In this method, the cost of a certain basket of goods and services widely accepted as representing an acceptable standard of living is used to determine poverty.

(c) The food ratio method divides the population into impoverished and non-impoverished groups based on the amount of their income allocated to basic needs like food, clothing, and housing. Research generally indicates that low-income individuals spend a greater share of their earnings on these items, leaving little to no money for typical leisure and other things.

(d) The United Nations Poverty Index is a composite statistic that incorporates variables like life expectancy, prolonged joblessness, knowledge, and relative wealth.

Against the backdrop of lack of generally-accepted definition of poverty, this study defines poverty as a condition leading to pains, misery and discomfort which can be worsen by poor conditions (pervasive unemployment and virulent inflation rates). This study intends to proxy poverty with misery index (composite index of unemployment and inflation rate rate). The misery index accounts for the degree of social unease brought on by high rates of unemployment and inflation.

2.1.2 Health outcomes and Its Measures

The term "health outcome" simply describes the state of the population's health throughout a specific time frame. Typically, indices or indicators of health status are used to measure it. Various population health experts have chosen different indices as proxies for evaluating health outcomes, despite the lack of agreement on how to quantify health outcomes. Self-rated health, life expectancy rate at birth, mean age at death, infant mortality rate, population mortality rate, child nutritional status, disease load, and maternal mortality are a few of these indices (Orji & Okechukwu, 2015).

2.2 Poverty and Health Outcomes

Many studies have x-rayed the association between poverty and health outcomes with diverse results (Ubi & Ndem, 2019;

Abdulrahman, 2023; Adeyeye et al., 2019; Akamu & Charles, 2018). For instance, Musyoka et al (2018) used the ordered probit regression to examine the association between poverty and poor health status in Kenya. According to the results, high rates of poverty may prevent people from benefiting from good health status. According to the results, improving good health is consequent upon constraining poverty. The study recommends that government should initiate policies aim at eliminating or drastically reducing poverty since it reduces the likelihood of being in good health.

Akamu and Charles (2018) using information from the World Health Organisations noted that poverty can deteriorate health outcomes for a people resulting in vicious circles of underdevelopment, and all of these can contribute to household poverty. Households in poverty are more predisposed to malnutrition, hinder access to evidenced-based care services and predispose households to poor health outcomes.

Adeyeye et al (2019) examines gender inequality in time poverty and its impact on health outcomes among rural smallholders in South West, Nigeria. The study used a mix-method approach using the time allocation domain of the abbreviated women's Empowerment in Agriculture Index (A-WEAI) to estimate time poverty for women and men. The result showed that gender disparity existed in time poverty. According to the results, 48% of rural women were time poor while 15% of male were time poor. Female small holders that were time poor under use healthcare services while males that were time poor had positive perception of their health.

Ubi and Ndem (2019) in their study modelled the dynamics of poverty in Nigeria using vector Autoregressive econometric approach. The study examined the impact of health shocks on poverty rate using per capita income as measure of poverty. The results showed that health outcomes shock does not impact on poverty, hence variation in poverty is due to changes in health outcomes.

Abdulrahman (2023) using annual time series data for the period 1991-2021 investigated if health outcomes in Nigeria responds to shocks in economic growth and development using vector Autoregressive econometric approach. The study found out that poverty shock has a big short-term influence on health outcomes.

From the review of literature, it is obvious that majority of the studies examined the impact of health on poverty, with a dearth of evidence on the impact of poverty on health. Though study like Abdulrahman (2023) investigated if poverty influence on health but poverty was proxy by per capita income. In order to make a difference, this study intends to proxy poverty by misery index.

2.3 Theoretical Framework

The Wagstaff health production function will be the framework upon which this study is built. According to this theory, health output in form of health outcomes is the result of health inputs interaction within a health production system. The health inputs include health spending and other socioeconomic factors that influence health outcomes (Arthur & Oaikhenan, 2017). The theory provides link between health inputs and outputs from a production unit given the underlying technology (Mokobia, 2023). This approach has been extensively used by various studies such as Filmer and Pritchett (1999), Anyanwu and Erhijiakpor (2009), Nixon and Ulman (2007), Sede and Ahuru (2017) and Arthur & Oaikhenan (2017). These studies consider health spending and other socioeconomic factors as the inputs into the health production function, health outcomes as the output in the system (Mokobia, 2023).

The Wagstaff health production deploys the Cobb-Douglas production function in analysing health outcomes (Arthur & Oaikhenan, 2017). Health outcomes used by various studies include mortality rates such as infant mortality rates and under-five mortality rates and life expectancy rates at births (Mokobia, 2024). In Filmer and Pritchett (1999), the health production function is expressed below:

$$HS = \left(\frac{H}{N}\right)^\alpha * \left(\frac{NH}{N}\right)^\beta * \left(\frac{GDP}{N}\right)^{\beta+\alpha} * e^A \quad [1]$$

Equation [1], is the health production function specified in Cobb-Douglas form. HS represents health status, H is public health spending, NH is non-public sector health spending, GDP is gross domestic product (a proxy for income), and N represents population size. α is the share of health

spending in health output, β is the share of non-public health spending in health output, e is the natural exponential function and A are other non-income factors influencing health status (Sede & Ahuru, 2017). Taking the natural log of equation (1),

$$\text{Log HS} = \alpha \log\left(\frac{H}{N}\right) + \beta \log\left(\frac{NH}{N}\right) + (\alpha + \beta) \log\left(\frac{GDP}{N}\right) + A_i \quad [2]$$

Equation 2 shows that health status is determined by per capita public and private health spending, per capita income and non-income factors. According to Filmer and Pritchett (1999), A depends on a set of observable and non-observable socioeconomic factors that determine health. For the sake of this study, health status is made a determinants of non-income factors which include poverty, literacy, carbon dioxide, physician density ratio and urbanization rate.

3. Methodology

Drawing from the Wagstaff Health Production function presented in the previous section, in which health is a function of vector of macroeconomic variables. Health in this framework is proxy by life expectancy rate at birth and infant mortality rate. Also, the macroeconomic variables considered as input in the health model includes poverty rate (proxy by misery index), literacy rate, carbon dioxide emission, physician density ratio and urbanization rate. Given this analysis, the models for this study are:

$$LEX = f(\text{Pov, Lit, } CO_2, \text{PDR, UBR}) \quad [3]$$

$$IMR = f(\text{Pov, Lit, } CO_2, \text{PDR, UBR}) \quad [2]$$

Where:

LEX = life expectancy rate.

IMR = infant mortality rate

Pov = Poverty rate (proxy by the misery index)

Lit= adult literacy rate (proxy for educational attainment)

CO_2 = carbon dioxide emissions rate (measured in metrics tons per capita).

UBR = Urbanization rate

PDR= Physician density ratio.

Now putting the models in econometric forms, it will appear thus

$$LEX = \beta_0 + \beta_1 \text{Pov} + \beta_2 \text{Lit} + \beta_3 CO_2 + \beta_4 \text{PDR} + \beta_5 \text{UBR} + \mu_1 \quad [5]$$

$$IMR = \alpha_0 + \alpha_1 \text{Pov} + \alpha_2 \text{Lit} + \alpha_3 CO_2 + \alpha_4 \text{PDR} + \alpha_5 \text{UBR} + \mu_2 \quad [6]$$

The variables are all defined as before, and the disturbances for equations 5 and 6 are, respectively, μ_1 and μ_2 . The scope of the study is the period 1980-2021. The estimated coefficients in this case are elasticities estimates. All the variables are expected to have positive elasticities excepts poverty rate (proxy by misery index) and Carbon dioxide emission. Specifically, misery index is used as proxy for poverty index in this study. This index is deployed to capture the multidimensional level of poverty. It is

expected that poverty will exert negative impacts on health outcomes. On the other hand, it is expected that improvements in literacy rates, urbanization rates and number of patients per physicians will exert positive impact on both infant mortality rates and life expectancy rates at birth. It is expected that Carbon dioxide emission will exert negative impact on health outcomes.

The study uses the multivariate time series methodology of the Vector Error Correction

Model (VECM) estimation technique because of its reasonably straightforward computational procedure and generally satisfactory results. Since the majority of the economic variables included in the model are strictly endogenous within the context of the Nigerian economy, specification bias would not result from the application of the VECM technique to estimate the response of health outcomes to the shocks from the various included variables. In the literature, VECM is applied if the variables are integrated of order 1 (Persaran et al., 1997).

A traditional pre-estimate test of the variables' time series properties is conducted

before the estimation process is initiated. This is essentially the unit root test, which is frequently used to determine whether variables in the model are stationarity given that the majority of economic series are non-stationary (Granger & Newbold, 1974).

The macroeconomic variables were obtained from different sources. The literacy rates, carbon dioxide emission, the number of patients per physician, life expectancy rate at birth, infant mortality rates were gotten from the World Bank World Development Indicators, while the misery index was computed from data contained in the Central Bank of Nigeria Statistical Bulletin for 2022.

4.0 Results and Discussion

4.1 Summary Statistics

Table 1: Characteristics of the included Variables

Variables	Mean	S.D	Min	Max	Skewness	Kurtosis	J.B	Prob
LEX	53.41	0.34	51.98	54.11	1.09	2.98	12.98	0.01
IMR	57.68	0.21	56.91	58.03	12.35	1.23	10.89	0.02
POV	73.04	2.87	72.08	73.85	0.98	0.98	1.98	0.09
Lit	78.51	3.68	77.98	79.02	0.01	3.68	0.98	0.10
C02	0.58	9.61	0.57	0.61	0.35	1.89	0.78	0.11
UBR	0.53	6.53	0.52	0.54	1.08	3.78	0.56	0.00
PDR	0.39	0.02	0.38	0.41	2.08	0.09	12.89	0.00

From the results in Table 1, the summary statistics of the variables used for the analyses are presented. Infant mortality rate (IMR) has an average value of 57.68, and its value ranged between 56.91 and 58.03. According to the result, the standard deviation for IMR is 0.21, which shows that the series is closely clustered around its mean values. The skewness value of 12.35 which is above the threshold value of 0, indicated that IMR is positively skewed. The Kurtosis coefficient (1.23) which is less than 3 indicates that IMR is platykurtic.

The average value of poverty is 73.04%, which ranges between 72.08% and 73.85%. According to the data, the standard deviation for poverty rate is 2.87, which shows that poverty rate is closely cluttered around its means values. The skewness value of 0.98 which is positive and above the threshold level of 0, shows that poverty is positively

skewed. The Kurtosis coefficient (0.98) which is less than 3 indicates that poverty is platykurtic.

The average value of literacy rate is 78.51%, which ranges between 77.98% and 79.02%. According to the data, the standard deviation for literacy rate is 3.68, which shows that literacy rate is closely cluttered around its means values. The skewness value of 0.01 which is positive and above the threshold level of 0, shows that literacy is positively skewed. The Kurtosis coefficient (3.68) which is less than 3 indicates that poverty is leptokurtic.

The average value of CO₂ is 0.58, which ranges between 0.57 and 0.61. According to the data, the standard deviation for CO₂ is 9.61, which shows that CO₂ is widely scattered around its means values. The skewness value of 0.35 which is positive and above the threshold level of 0, shows that CO₂

is positively skewed. The Kurtosis coefficient (1.89) which is less than 3 indicates that poverty is leptokurtic.

The mean value of urbanization rate (URB) is 0.53%, which ranges between 0.52% and 0.54%. According to the data, the standard deviation for URB is 6.53, which shows that URB is closely cluttered around its means values. The skewness value of 1.08 which is positive and above the threshold level of 0, shows that URB is positively skewed. The Kurtosis coefficient (3.78) which is less than 3 indicates that poverty is platykurtic.

The average value of CO₂ is 0.58, which ranges between 0.57 and 0.61. According to the data, the standard deviation for CO₂ is 9.61, which shows that CO₂ is widely scattered around its means values. The skewness value of 0.35 which is positive and above the threshold level of 0, shows that CO₂ is positively skewed. The Kurtosis coefficient (1.89) which is less than 3 indicates that poverty is leptokurtic.

The average value of physician density ratio (PDR) is 0.39, which ranges between 0.38 and 0.41. According to the data, the standard deviation for PDR is 0.02, which shows that PDR is closely scattered around its means values. The skewness value of 2.08 which is positive and above the threshold level of 0, shows that PDR is positively skewed. The Kurtosis coefficient (0.09) which is less than 3 indicates that PDR is leptokurtic.

4.2 Unit Root Tests

The Unit root tests help to examine the stationarity state of the variables used for the analyses. It is imperative to do so since most macroeconomic variables do not have mean reversion and using these types of non-stationary variables in macro econometric modelling will give rise to spurious regression (Yule, 1926; Newbold and Granger, 1974). In Table 3, the unit root result is presented using the Augmented Dickey Fuller approach.

Table 2: Summary of Unit Root Results

Variables	ADF Statistics	Probability	Remark
LEX	0.9867	0.1245	Non-stationary
IMR	0.0111	0.9867	Non-stationary
Lit	0.0001	0.3590	Non-stationary
Co2	0.0211	0.2345	Non-stationary
PDR	0.2311	0.9453	Non-stationary
URB	0.0045	0.1128	Non-stationary
ΔLEX	12.9878	0.0011*	Stationary
ΔIMR	9.8045	0.0023**	Stationary
ΔLit	8.7549	0.0000*	Stationary
ΔCo2	2.8767	0.0120**	Stationary
ΔPDR	3.4569	0.0350**	Stationary
ΔURB	2.6745	0.0011*	Stationary

*= significant at 1%; **= significant at 5%.

In Table 2, the Unit Root results are presented. The results are presented for levels and first differences. At levels, none of the variables had a significant probability which shows that none is stationary at levels. At first difference, the probability values of the variables became significant though at varying level of significance. Therefore, the entire variables are significant at first

difference and they can be said to be homogenous of order 1.

4.3 Variance Decomposition for LEX

To further examine the short-run properties of the log of infant mortality rates and life expectancy rate at birth, we present the variance decomposition of both variables. The variance decomposition of infant

mortality rate is presented in Table 4, and that of infant mortality rate presented in Table 5. The variance decomposition shows the percent of forecast variance for both variables that is due to their own innovation and also to the development in the other endogenous variables.

An analyses of the variance decomposition of life expectancy rate presented in Table 4 shows that own shock accounts for a significant variation in life expectancy rate at birth. In period 1, life expectancy rate at birth accounts for 100% of its own variation. Its contribution remains significant throughout the period even though it dies down to stand

at 76.88% by the tenth period. Another variable that significantly influenced life expectancy rates were poverty rates, literacy rates and physician density ratios. Though, their influence were modest but one common characteristics is that their influence increase consistently. For instance, the influence of poverty rate stood at 0.0% in period 1, but increases steadily until it crescendo at 8.19% by the tenth period. Also, the contribution of literacy rate was 0.0% in period 1 but rose to 6.57% by the tenth period. The contribution of physician density ratio commenced with a contribution of 0.0% by the first period and this rose to 4.37% by the tenth period.

Table 3: VDC for LEX

Period	S.E.	Log (IMR)	Log (Pov)	Log (Lit)	Log (PDR)	Log (C02)
1	0.0112	100.0	0.00	0.00	0.00	0.00
2	0.0273	98.12	0.81	0.72	0.12	0.23
3	0.0318	97.85	0.98	0.82	0.28	0.07
4	0.0452	95.19	1.86	1.27	0.75	0.93
5	0.0513	86.23	5.69	4.65	1.98	1.45
6	0.0318	85.98	5.78	4.75	1.99	1.50
7	0.0472	83.18	6.11	5.98	2.71	2.02
8	0.5218	81.18	7.05	6.11	3.08	2.58
9	0.5180	78.91	8.11	6.48	3.88	2.62
10	0.0318	76.88	8.19	6.57	4.37	3.99

4.4 Variance Decomposition for IMR

Table 4: VDC for IMR

Period	S.E.	Log (IMR)	Log (Pov)	Log (Lit)	Log (PDR)	Log (C02)
1	0.0781	100.00	0.00	0.00	0.00	0.00
2	0.0350	98.68	0.98	0.11	0.12	0.11
3	0.1121	97.65	1.26	0.78	0.18	0.13
4	0.3521	97.29	1.34	1.01	0.21	0.15
5	0.1125	96.42	1.98	1.09	0.34	0.17
6	0.2313	95.39	2.01	2.01	0.38	0.21
7	0.0125	94.40	2.78	2.09	0.41	0.32
8	0.0235	93.16	2.98	2.98	0.54	0.34
9	0.0120	92.55	3.45	3.01	0.63	0.36
10	0.0150	91.87	3.98	3.06	0.68	0.41

In Table 4, the variance decomposition of infant mortality rate is presented. The variance decomposition shows the contributions of each variable and own shock to the variation of infant mortality rate. The analyses show that own shock accounts for

the highest contributions to the variation in infant mortality rate. In period 1, infant mortality rates contributed 100% to its own variation. Throughout the tenth period, the infant mortality rate made significant contribution to its own variation even though

the variation dies down consistently. Two other variables that made modest contribution to infant mortality rates were poverty rates and literacy rates. The contribution of poverty rates was 0.0% by the first period and this continued to 3.98% by the tenth period. The contribution of literacy rate was 0.0% by the first period and stood at 3.06% by the tenth period.

4.5 Vector Error Correction Model (VECM)

The Vector Error Estimates is presented in Table 5. The choice of VECM is due to the fact that the variables were stationary at levels, hence the model was estimated using the first differences of the variables. A one-time lagged variable is selected based on optimality criterion. The Bayesian Information Criterion (BIC) appears smallest with one-time lagged variable (See Iyoha, 2006). In column 2, the VECM result for infant mortality rates and in column 3 the VECM results for life expectancy rates are presented.

Table 5: VECM results

1	2	3
Variables	IMR	LEX
Log (Δ pov)	0.350 (0.051)***	-3.050 (0.010)**
Log (Δ pov (-1))	0.001 (0.002)*	9.035 (0.118)
Log (Δ LIT)	-0.650 (0.000)*	0.013 (0.020)**
Log (Δ LIT(-1))	-0.050 (0.034)**	9.350 (0.899)
Log (Δ PDR)	-0.023 (0.012)**	12.850 (0.865)
Log (Δ PDR(-1))	-0.765 (0.612)	12.850 (0.865)
Log (Δ C02)	23.120 (0.010)**	-0.850 (0.001)*
Log (Δ C02(-1))	9.120 (0.610)	1.850 (0.711)
Log (Δ UBR)	1.211 (0.980)	0.987 (0.345)
Log (Δ UBR(-1))	0.0986 (0.867)	13.850 (0.350)
R2	0.865	0.891
Adj R2	0.855	0.888
BIC	0.213	0.217

Values in parentheses are probability values.

*, ** and *** are respectively coefficients significant at 1, 5 and 10%.

In column 2, the VECM results for infant mortality rate are presented. The coefficient of determination is put at 0.865 shows that 86.5% of the variation in infant mortality rate is due to the included explanatory variables

showing that the estimated VECM result has impressive goodness-of-fit. The adjusted coefficient of determination puts at 85.5% shows that the estimated model has a high predictive ability. The immediate poverty rate

has positive coefficient of 0.350 which is statistically significant at the moderate rate of 10%. The result shows that a 1% rise in poverty rate in the immediate period will cause infant mortality rate to rise by 0.350% in the same period. One-time lagged value of poverty has positive coefficient of 0.001 and it is statistically significant at 5%. The result shows that a 1% rise in one-time lagged value of poverty will cause current infant mortality rate to rise marginally by 0.001%. Current value of literacy rate has negative coefficient of -0.650 and it is statistically significant at 1%. The result showed that a unit rise in current literacy rate will cause infant mortality rate to decline by 0.650%. One-time lagged value of literacy rate has significant negative coefficients showing that a 1% rise in literacy rate in the immediate past period will cause infant mortality rate to decline by 0.050% in the current period. Also, physician density ratio has a negative coefficient that is statistical significant at 5%. The result showed that a 1% rise in physician density ratio will cause infant mortality rate to decline by 0.023% in the same period. Finally, C02 has a significant positive coefficient showing that a 1% rise in c02 will cause infant mortality rate to rise by 23.120%.

In column 3 the VECM results life expectancy rates at birth are presented. The coefficient of determination is put at 0.891 shows that 89.1% of the variation in life expectancy rate at birth is due to the included explanatory variables showing that the estimated VECM result has impressive goodness-of-fit. The adjusted coefficient of determination puts at 88.8% shows that the estimated model has a high predictive ability (see Iyoha, 2006). The immediate poverty rate has negative coefficient of -3.050 which is statistically significant at the moderate rate of 5%. The result shows that a 1% rise in poverty rate in the immediate period will cause life expectancy rate to decline by 3.050 % in the same period. Current value of literacy rate has positive coefficient of 0.013 and it is statistically significant at 5%. The result showed that a % rise in current literacy rate will cause life expectancy rate to rise by

0.013%. Finally, C02 has a significant negative coefficient showing that a 1% rise in c02 will cause life expectancy rate at birth to rise by 0.850 %.

5. Conclusion and Recommendations

Arising from the extant literature, this study explored the impact of poverty on health outcomes specifically life expectancy rate at birth and infant mortality rate using the macroeconomic variable misery index as a proxy for poverty. The contribution of this study is that it has showed that a reverse causality flows from poverty to health and not just that poor health influences the level of poverty. The study used the VECM method by estimating VDC and estimating a one-time lagged model. The result from the study showed that poverty exerted negative impact on health outcomes showing that those in poor health outcomes are susceptible to worse health outcomes. Therefore, the policy implication of this analysis is simply that government must understand the interdependence of poverty and health, and multi-pronged approach should be engaged in reducing the poverty level with a positive spillover effect on health outcomes. The central thesis is that poverty reduction has become indispensable given that those in poverty are more vulnerable to all forms of deprivation including social, material and economic which limit their access to modern healthcare services.

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CORPORATE GOVERNANCE, RISK MANAGEMENT, ACCOUNTABILITY AND TRANSPARENCY: A STUDY OF THE NIGERIAN BANKING SYSTEM

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ABSTRACT

The main objectives of this study, therefore, is to examine and understand the relationship between corporate governance, risk exposure and its management in the context of accountability and transparency in the Nigerian banking system. We started by examining the various challenges with which the industry is confronted. The relationship between corporate governance and risk management is discussed. This is followed by a discussion of the weaknesses in corporate governance in the banks. To fully understand the relationship between corporate governance and bank performance, four theories were used: Agency theory, Ethics theory, Stakeholder theory, and corporate social responsibility theory. In the conceptual review, the concepts of corporate governance, transparency and accountability are discussed. The methodology used for this research is meta-analysis. The banking industry, including the Central Bank of Nigeria, was used as case study. The study showed that many Nigeria banks lack transparency and accountability in managing the banks. Among other things, it is suggested that the management of Nigeria banks accord corporate governance the place it deserves in the management of bank activities.

Keywords: corporate governance, risk management, accountability, transparency, banking crisis.

INTRODUCTION

As the prime movers of a nation's economic activities and veritable partners in nation-building, banks occupy a significant place in the economy of every nation. It is therefore not surprising that their operations are perhaps the most highly regulated and supervised of all businesses. The high degree of regulation which characterizes the banking industry fundamentally derives from its exposure to various types of risks. Thus, accountability and transparency in bank operation are the key words: they are accountable to their depositors and their operations must be transparent to both regulators and their owners, including board of directors. Transparency and disclosure of information are key attributes of good corporate governance which banks must cultivate with new zeal so as to provide stakeholders with the necessary information to judge whether their interest are being taken care of. Although, there some fundamental

changes in bank industry, the fact remains unchanged that there is the need for the country to have sound resilient banking systems with good corporate governance. Given the fury of activities that have affected the efforts of banks to comply with the various consolidation policies and the antecedents of some operators in the system, there are concerns on the need to strengthen corporate governance in banks. This will boost public confidence and ensure efficient and effective functioning of the banking system (Sanusi, 2010).

Over the years, the Nigerian banking industry and/or system has undergone tremendous changes. These changes have their roots in the management of risks in the banking system and problems in the system of corporate governance (Ayodele & Alabi, 2014; Sanusi, 2010). According to Oluwakayode (2017), the most fundamental problem confronting the Nigerian banking

sector is its risk exposure, the inability to manage risks and poor corporate governance structures in the banking system. The purpose of this study, therefore, is to examine and understand the relationship between corporate governance, risk exposure and its management in the context of accountability and transparency the Nigerian banking system. Needless to add, a sound banking system is one of the prerequisite for nation-building. Therefore, bankers and banking institutions can be considered nation-builders. Banking crises in Nigeria have shown that not only do banks often take excessive risks but the risks differ across banks. Some banks engage in more risks than their capital can bear. Other banks are more prudent and would be able to contain a banking crisis. As a way to stem the tide, the Central Bank of Nigeria (CBN) on July 6, 2004, introduced measures to make the entire banking system a safe, sound and stable environment that could sustain public confidence in it. According to the Bank's Governor at the time, Charles Chukwuma Soludo, "it is now time to set up a structure that creates a strong base relative to the kind of economy we are operating where banks become channels to do proper intermediation" (The Obasanjo Economic Reforms on the Banking Sector, 2005).

Risks management encompasses the whole structure, processes, procedures and policies which an organization has instituted to identify and control the risk inherent in its activities. It is our opinion that, it was the failure of regulation and risk management (the twin important key factors to financial industry) and lack of accountability and transparency that have been identified as the causes of crisis in the Nigerian banking system According to (Olajide 2011; Iyamabor, Ogbor & Awosigho, 2021). In a study carried out by Jafaru and Iyoha (2015), the researchers reported that "there were a total of 1,036 reported cases of fraud in 2003 with a total loss in the sum of N9.3 billion." In 2004 and 2005 financial years, the total sum lost to fraud cases in the banks were N11 billion and N12 billion respectively. These amounts put together are no doubt, colossal when viewed against the background of the

capitalization of some of the banks in 2003. Broadly speaking corporate governance generally refers to the processes by which organizations are directed, controlled, and held to account, and is underpinned by the principles of openness (transparency), integrity, and accountability.

THEORETICAL REVIEW

The discussion of corporate governance is anchored on four theoretical foundations, namely: Agency theory, ethics theory, and social responsibility theory, but emphasis is given to both agency and ethical theories for the purpose of this article.

Agency Theory and Corporate Governance:

Financial economists and organization theorists have long been concerned with ways to address the problem, which arises from the *incongruence* and incompatibility of the interests of a corporation's equity owners (e.g., bank shareholders) and those of bank managers, and have conducted significant research towards resolving it. The literature emanating from such efforts has grown, and much of the evidence has been built on the theoretical works underpinning Agency Theory. In its simplest form, the Agency Theory is a theory of corporate behavior in which it is recognized that the manager, as agent, may have differing motives from the owner, as principal in their relationship. Issues such as remuneration, accounting techniques or risk-taking are among the major concerns of both parties in this relationship (Jensen & Meckling, as cited in Ogundare & Ughovero, 2023). Recent information technology advancements have ramifications on the activity, design and system of organisations. Ogundare and Ughovero, (2023) states that competitiveness of future economies will largely depend on the creation and application of these technologies.

To be sure, Agency Theory explains how to best organize relationships in which one party (the principal - owner) determines the work, which another party (the agent - manager) undertakes. The theory argues that under conditions of incomplete information

and uncertainty, which characterize most business settings, two agency problems arise: adverse selection and moral hazard. Adverse selection is the condition under which the principal cannot ascertain if the agent accurately represents his ability to do the work for which he is being paid. Moral hazard is the condition under which the principal cannot be sure if the agent has put forth maximal effort (Eisenhardt, as cited in Ogundare, Ughovero, & Bereprebofa, 2023). Bias against another thus begins to occur at the point when new information is processed by the individual, continues with each interaction between two people (Ogundare, Ughovero, & Bereprebofa, 2023). In view of the above vis-à-vis the practice of corporate governance, it clearly shows that huge responsibility is placed on the neck of the agents by the principals. To fulfill the ultimate goal of the agency theory, the need to apply corporate governance is such that it is inevitable to the whole process and operations of the corporate organizations.

Ethical Theory: Ethics is defined as the study of morality and the application of reason which sheds light on rules and principle, which is called ethical theories that ascertains the right and wrong for a situation. While business ethics theory focuses on the “rights and wrongs” in business, its relationship to the practice of corporate governance draws attention to the relationship between management and other stakeholder groups. Ethics has also to be seen in the light of the environment in which it is exercised. This is important as an organization is a network of actions, hence influencing trans-communal levels and interactions. In this context the notions of accountability and transparency among corporate managers are part of the discourse on both societal and business ethics.

The main focus of business ethics is a critical evaluation of business activities, decisions and situations where the right (e.g. transparency and accountability) and wrongs (e.g., non-disclosure and non-accountability) are addressed. The main reasons for this are that the power and influence of business in any given society is stronger than ever before.

Thus, a viable business environment is a powerful nation-builder. Businesses have become a major provider to the society, in terms of jobs, products and services (Clarkson, as cited in Iyamabhor, Ogundare, Roland, & Ogbor, 2023) and partners in nation-building.

Corporate Social Responsibility and Corporate Governance: There is a profound relationship between how an organization manages its corporate social responsibility initiatives, stakeholder relationships and its approach to managing corporate governance. It is an established fact that organizations that embrace CSR have a better bottom line and more sustained growth. Furthermore, it has also been argued that two reasons are usually canvassed in support of CSR: (i) to give back to society and (ii) to achieve a competitive advantage (Kotler and Nancy, 2010).

Corporations have an obligation to seek the interest of customers, employees, shareholders, communities and ecological considerations in all aspects of their operations. One of the ways corporations can act socially responsible is through disclosure of their business activities (*transparency*) and been responsible for their actions (*accountability*).

In conclusion, the researcher suggested that the three theories Agency Theory, Ethical Theory, Corporate Social Responsibility theory, are for organizations to achieve their set goals, all employees should be considered relevant and seen as a veritable key to organizational success. Policies that will break the back bone of stereotyping and bias categorizations should be regularly formulated and implementations, if the organization must achieve its corporate goals.

CONCEPTUAL REVIEW

Concept of Corporate Governance

While there is no standard definition of corporate governance, it can broadly be understood to refer to the system by which companies are directed and controlled, including the roles of the board of directors,

management, shareholders, and other stakeholders (Alo, 2013).

Corporate governance is only part of the larger economic context in which firms operate, which includes, for example, macroeconomic policies and the degree of competition in product and factor markets. According to Chinaedu (2011) a corporate governance framework also depends on the legal, regulatory, and institutional environment in which the corporation is located. Corporate governance is affected by the relationships among participants in the governance system. Controlling shareholders, which may be individuals, family holdings, bloc alliances, or other corporations acting through a holding company or cross shareholdings, can significantly influence corporate behavior. As owners of equity, institutional investors are increasingly demanding a voice, transparency and accountability in corporate governance in some markets (Afolabi & Moses, 2015; Oghoghomeh & Ogbeta 2014).

The presence of an effective corporate governance system, within a company and across an economy as a whole, helps to provide a degree of confidence that is necessary for the proper functioning of a market economy. As a result, the cost of capital is lower and firms are encouraged to use resources more efficiently, thereby underpinning growth. According to Wolfensohn (2000), "Corporate Governance is about promoting corporate fairness, transparency and accountability".

The point of corporate governance is to ensure that management and majority shareholders at companies behave in a manner that balances the profit motive with the interests of minority shareholders and other stakeholders. There is strong evidence that companies with good corporate governance are more likely to be profitable and sustainable overtime than ones without it (Kotler & Nacy, 2010).

Transparency: The notion of transparency, as it is used in this paper, refers to an organization's timely, reliable, clear and relevant public reporting on its status, mandate, strategy, activities, financial

management, operations and performance. Transparency, according to Oladoyin, Elumilade and Ashaolu (2005) is a moral virtue, which stresses sincerity, truthfulness and openness. Since operators in the banking industry are trustees in a sense, they necessarily must be honest; otherwise, they will abuse the confidence and trust reposed in them by the depositors and this will ultimately lead to lack of confidence in the essence of financial institutions.

Accountability: In general terms, the definition of accountability is taking or being assigned responsibility for something that someone has done or something someone is supposed to do. An example of accountability is when a bank employee admits an error she made on a running a depositor's account. Accountability is an assurance that an individual or an organization will be evaluated on their performance or behavior related to something for which they are responsible.

Corporate accountability involves being answerable to all an organization's stakeholders for all actions and results. Accountability in the banking system is best explained through the theory of Agency. As discussed earlier, the person who holds or manages a given amount of resources for the benefit of another person is an agent (in our case, the bank and its managers). As an agent, he must operate according to the mandate given to him and he must perform to the satisfaction of those who are to benefit from his achievement. Accountability in an organization such as bank operates in an order of hierarchy. Every person in the system has a place in the hierarchy, which facilitates accountable service. For instance, the manager in a unit is directly responsible and accountable to his immediate higher officer and so on and so forth. For the professional accountant, accountability is dual. First, he is accountable directly to his employer. Secondly, every step of his service requires systematic accountability. The procedure of his work entails accountability at every point. Another form of accountability that is feasible in the services of the professional banker is – accountability

through financial report/ judgment. Here, the banker or accountant is expected to be fair in his financial reporting e.g. of assets, profit etc. In a situation where the accountant is corrupt and dishonest, accountability will never be achieved.

Accountability and transparency are generally considered the two main pillars of good corporate governance and they go hand-in-hand.

METHODOLOGICAL APPROACH

The methodology used in this study is a meta-analysis of corporate governance, risk management, accountability and transparency. We used the Nigerian banking system as a case study. Meta-analysis is considered as an important research strategy for comparing and integrating results from individual studies. Meta-analysis is a research design that systematically assesses the results of previous research to derive conclusions about that body of research. Another aspect of meta-analysis is a literature review. A literature review is a summary and synthesis of published studies in a specific research area, providing new interpretation of material or tracing history and progression of the field. In this study, we conducted a systematic review and *meta-analysis* of recent problems that the banking system faced during the Soludo and Sanusi era at the Central Bank of Nigeria and how the challenges of accountability and transparency were made to bear on the performance of the banking system in general.

This study relied basically on secondary sources for generating data. Where any other thing would have qualified as primary data, they are reports of personal eyewitness accounts. The secondary sources of data for the study included publications of the Central Bank of Nigeria (CBN), some National Newspapers, Accounting Manuals and Texts.

CASE STUDY OF THE NIGERIAN BANKING SYSTEM

Risk Exposure and Types of Risks in the Nigerian Banking Sector

The banking business by its nature exists in a high risk environment. It is risky in the sense

that it is the only business where the proportion of borrowed funds is far higher than the owners' equity (Owojori, Akintoye and Adidu (2011). A high level of financial leverage is usually associated with high risk. This can easily be seen in a situation where adverse rumors, whether founded or precipitated financial panic and by extension a run on a bank. According to Umoh (2002) and Ferguson (2003) few banks in Nigeria are able to withstand a persistent run, even in the presence of a good lender of last resort.

According to Owojori, Akintoye and Adidu (2011), the risks that arise in the course of business which bankers should be able to control include, among others, credit risk, liquidity risk, reputation risk, legal risk, operational risk, customer satisfaction risk, leadership risk and information technology risk. On the other hand, the risks that are exogenous to the banking system which tend to pose the greatest control problem to bankers include regulatory risk, industry risk, government policies risk, sovereign risk and market risk. Other important ones, as added by Umoh (2002), include competition risk, human resources risk and fraud risk.

Credit Risks: Available statistics from the liquidated banks clearly showed that inability to collect loans and advances extended to customers and directors or companies related to directors/managers was a major contributor to the distress of the liquidated banks (Ayodele, and Alabi, 2014). At the height of the distress in 1995, when 60 out of the 115 operating banks were distressed, the ratio of the distressed banks' non-performing loans and leases to their total loans and leases was 67%. The ratio deteriorated to 79% in 1996; to 82% in 1997; and by December 2002, the licences of 35 of the distressed banks had been revoked.

Operational risk: Operational risk, according to Owojori, et al (2011), is the risk of direct and indirect loss resulting from inadequate or failed internal processes, people and systems or external threats generated. Operational risk may include frauds. Operational risk in the Nigerian banking industry is a situation where customers and/or bank staff intentionally falsify information or

present forged documents. It may also include technology risk which refers to the risk of inadequate or ineffective operating and information technology infrastructure to support the business of the bank.

Risks associated with mergers and acquisition (M&A): According to Agbakoba (2005), mergers and acquisitions (M&A) entail both risks and opportunities for banks. With regard to risks, three aspects are relevant. First, M&A entail an operational risk owing to the difficulty of integrating different risk management systems as well as different accounting and control procedures. Second, the problem of reconciling the different corporate cultures, including difference in work cultures and practices among the staff and business units of the two or various entities, entail the risk of a loss of key employees and/or clients. Third, there is the risk of failing to achieve the expected rationalization gains owing to the complexity of the operation as well as for other reasons, including labor market rigidities.

Nature of Risk Management in Nigerian Banks

The Nigerian banking sector witnessed dramatic growth during the post consolidation era. According to the then Governor of Central Bank of Nigeria, Mallam Sanusi, however, neither the banking industry nor the regulators were sufficiently prepared to sustain and monitor the sector's explosive growth. Prevailing sentiment and economic orthodoxy; all encouraged this rapid growth, creating a blind spot to the risks building up in the system.

Prior to the crisis, the sentiment in the industry was that the banking sector was sound and growth should be encouraged. The IMF endorsed the strength of the banking system to support this growth. However, this sentiment proved misplaced. According to Sanusi (2010), Akindele (2015), there are eight (8) main interdependent factors that led to the creation of an extremely fragile financial system that was tipped into crisis by the global financial crisis and recession. Among these 8 factors were: (1) Macro-economic instability caused by large and

sudden capital inflows, (2) Major failures in corporate governance at banks, (3) Lack of investor and consumer sophistication (4) Inadequate disclosure and transparency about financial position of banks

Corporate governance at banks

The huge surge in capital availability occurred during the time when corporate governance standards at banks were extremely weak. In fact, failure in corporate governance at banks was indeed a principal factor contributing to the financial crisis. Consolidation created bigger banks but failed to overcome the fundamental weaknesses in corporate governance in many of these banks. It was well known in the industry that since consolidation, some banks were engaging in unethical and potentially fraudulent business practices and the scope and depth of these activities were documented in recent CBN examinations. There were no mechanism for accountability, disclosure, monitoring and transparency put in place (Sanusi, 2010).

As banks grew in size and complexity, bank board often did not fulfill their function and were lulled into a sense of well-being by the apparent year-over-year growth in assets and profits. In hindsight, boards and executive management in some major banks were not equipped to run their institutions (Sanusi, 2010).

Transparency and Disclosure at the Banks

Given the low sophistication among many consumers and investor, inadequate disclosure by the banks was another major contributing factor to the crisis. Bank reports to the CBN and investors often were inaccurate, incomplete and late, depriving the CBN of the right information to effectively supervise the industry and depriving investors of information required to make informed investment decisions. (Sanusi, 2010).

Lack of Enforcement, Transparency and Accountability

Enforcement was the biggest failure among surveillance processes, despite the CBN having all the powers it needed to enforce examination recommendations. Financial

penalties are inadequate to enforce bank compliance. By paying fines, banks effectively annulled key aspects of the examination reports. With examination cycles between 6 and 12 months, follow-up on examination recommendations rolled into the following year's examination. The prevailing view that the sector was healthy, a culture of tolerance, and acceptance of the status quo and the shortage of specialist skills compromised supervision's effectiveness.

CONCLUSION AND RECOMMENDATION:

REGAINING ACCOUNTABILITY AND TRANSPARENCY IN THE BANKING INDUSTRY FOR NATION-BUILDING

The role corporate governance, risk management, accountability and transparency play in the performance of banks is crucial for nation-building and cannot be overstated. The reason is that these concepts deal with the processes, policies, rules, regulations, customs, laws and institutions affecting the way in which a bank and any other corporation, for that matter are directed, controlled through the influence of the board of directors and top executive members of the enterprise. Hence, for corporate governance to have a positive significant effect on organizational performance, honesty, transparency and accountability are highly required; due to the fact that the effectiveness and efficiency of the company in terms of generating increased profits, returns on capital employed, goodwill and shareholding anchor on the effectiveness and efficiency of the organization's corporate governance.

The review of literature on the concept of corporate governance, risk management, accountability and transparency and the case study on the performance of the Nigerian banking industry showed that many banks in Nigeria lack transparency and accountability on the part of the stewards (Board of Directors) who always fail to disclose detailed information on the state of affairs and financial health of the organization probably due to the fear of appointment of new Board members or the need to look more efficient in the eyes of the shareholders and

be applauded make them to usually window dress the financial statement and thereby living out vital information that will serve as signal to the financial distress of the banks. This singular act has led to the demise of banks and other corporations in Nigeria.

The management of these banks should know that a lot of benefits are embedded in corporate governance if accorded the right place in management of the affairs of the enterprises.

Specifically, the following are our suggestions:

The key issue is to strike the right balance between protecting the independence of the central bank and preserving its accountability. To strike that balance, several issues need to be confronted in the design of accountability arrangements: How can objectives be made sufficiently measurable and precise so that policy success and failure can be attributed to the relevant decision makers? How can central bankers be held accountable to elected representatives for actions taken independently of those representatives? Where group decision-making is used to reduce idiosyncratic risk, how can the individuals involved be held to account? How much can openness and transparency fill any gaps in accountability to elected representatives by providing accountability to the wider public? Should obligations to be transparent be formalized and detailed? Below are some suggestion which we think help banks and other organization implement effective accountability and transparency initiatives:

- i. Banks should avoid assigning duties to employees that are overlapping. To achieve accountability, there must be a demarcation between areas of responsibility that overlap. In many banks, bank employees are given multiple responsibilities that are sometimes not complimentary. Proper job description is necessary to hold an employee accountable whenever things did not go the way they are supposed to.

- ii. Accountability and transparency extend the company's employees. Bank should encourage their customers to report any form of irregularity by bank employees.
- iii. Transparency of bank's policy is widely thought to be beneficial. The reduction of asymmetric information between banks and the public reduces uncertainty.

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TIME SERIES ANALYSIS ON THE EFFECT OF EXCHANGE RATE VOLATILITY ON ECONOMIC GROWTH IN NIGERIA (1981-2021)

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Abstract

The study analyzed the effect of exchange rate volatility on economic growth in Nigeria using annual time series data over the period of 40 years from 1981-2021. Data were sourced from the publication of Central Bank of Nigeria (CBN) and the National Bureau of Statistics (NBS); The variables used included Gross Domestic Product, Exchange rate, Money supply, Interest rate, Inflation Rate, and Foreign Direct Investment. The Unit root showed that the variables are in mixed order of integration. The result of the VAR estimates showed a negative and insignificant relationship between exchange rate and economic growth; hence there was evidence of short run and long run relationship. The study concluded that, exchange rate volatility granger cause and can explain changes in economic growth in Nigeria. Based on the findings, it is recommended that a managed floating exchange rate regime should be supported, market-determined rates be encouraged allowing market forces to play a significant role in determining exchange rates.

Keywords: Exchange rate; Economic growth, Nigeria.

INTRODUCTION

Exchange rate is the value of one country's currency in relation to another country's currency. It represents the recommended or agreed-upon amount of one currency required to obtain a specific quantity of another foreign currency. In simpler terms, it reflects how much one currency is worth when compared to another currency (Adaramola & Saka 2020). The exchange rate plays a crucial role in connecting the economic values of two different countries, serving as a well-structured global medium for trade. This has a direct impact on the volume of exports and imports, as well as a country's balance of payments, which can be either in a deficit or surplus condition (Adelowokan, Adesoye, & Balogun 2015). The primary goal of public sector policy is to achieve rapid economic growth, and a key indicator of economic growth is a continuous increase in the quantity of goods and services produced within the country.

Economic growth occurs when a country's production capacity is expanding (Eme & Johnson 2018). This production of goods and services can be thought of in terms of the volume of both domestically produced and

exported goods in comparison to the volume of goods and services imported into the country. The transactions involving these two types of products involve foreign exchange, highlighting the importance of an effective exchange rate policy for the country. In Nigeria, there have been ongoing efforts over the years to pursue this goal through various techniques and options.

The exchange rate of Nigeria's currency, the Naira, was relatively stable during the post-independence period when agricultural products like cocoa, palm oil, groundnut, rubber, and others contributed to more than 70% of Nigeria's GDP. The stability continued during the period of the oil boom between 1973 and 1979 when crude oil became the country's major export. This shift led to a significant decline in the contribution of agricultural products to total exports, while the share of crude oil increased due to its higher profitability. This marked the beginning of Nigeria's heavy reliance on oil exports and the subsequent fluctuations in her exchange rate. The trade of goods and services across international borders involves the flow of foreign exchange in various directions. This necessitates the establishment

of an exchange rate between the currencies of two trading nations.

Unfortunately, Nigeria's foreign exchange market has faced challenges despite the implementation of various institutional reforms, including the introduction of the Bureau De Change in 1989, the Inter-Bank Foreign Exchange Market (IFEM) in 1999, and the adoption of a recent Dutch Auction System (DAS), among other measures. During the period between 1981 and 1985, the Naira maintained relative stability against the US dollar and several other foreign currencies. For example, in 1981, about N0.61 could be exchanged for 1 USD, and by 1985, this rate had increased to approximately N0.89. However, in 1989, a significant devaluation of the Naira began, with the exchange rate rising to approximately N7.39. This trend continued to worsen, with rates of around N133.15 in 2004 and N192.44 in 2015, and reaching approximately N305.1 in 2017. Between 2019 and 2021, Nigeria's exchange rate system experienced various changes and challenges; Nigeria maintained a system of multiple exchange rates during this time. The official exchange rate, managed by the Central Bank of Nigeria (CBN), was pegged, while various other exchange rates existed in the parallel market. These multiple rates created disparities and challenges in the foreign exchange market. The Central Bank of Nigeria (CBN) implemented various measures to stabilize the exchange rate and bridge the gap between the official and parallel market rates. Despite numerous reform efforts to stabilize the financial system, the situation remained challenging. The question is, could the period of growth be attributed to effective exchange rate regimes? What measures are to be considered if exchange rate policy would be effective in bringing about sustainable economic growth and development? These are some of questions which this research work would attempt to answer. Given the ongoing depreciation of the Naira in the foreign exchange market and the consistent rise in the cost of living, this research work is crucial for gaining a comprehensive understanding of the

various economic factors contributing to prolonged exchange rate dynamics. It also seeks to identify effective measures to control and manage these factors to achieve exchange rate stability in Nigeria. The existing studies in Nigeria have not fully addressed these questions. This study is unique because, it covers the scope of 1981 to 2021. Unlike the literature we reviewed, it includes foreign direct investment in the analysis of exchange rate volatility on economic growth in Nigeria. Specifically, among the studies conducted in Nigeria, this research solely examines effects of exchange rate volatility on economic growth, providing a comprehensive explanation of how volatility in exchange rate affects growth in a liberalized economy context. The main objective of the study is to analyze the effect of exchange rate volatility on economic growth in Nigeria. The specific objectives include examining effect of exchange rate volatility on economic growth in Nigeria in the long run, and short-run, and determining the causal relationship between exchange rate volatility and economic growth in Nigeria.

1. REVIEW OF RELATED LITERATURE

1.1 Conceptual Review

2.1.1. Concept of Exchange rate

The concept of exchange rate relates to the rate at which one country's currency can be exchanged for another country's currency. It represents the proportion of one country's currency in terms of another country's currency. For example, the exchange rate between pound sterling and the US dollar specifies the number of pounds required to purchase a dollar or vice versa – the number of dollars needed to buy one pound. This rate is typically determined in the foreign exchange market (FOREX), which is the marketplace where various countries' currencies are bought and sold. It's in this market that the values of both local and foreign currencies are established (Eme & Johnson 2018). As noted by African Development Bank (2018)., national currencies from all countries are traded in the

foreign exchange market, making it the largest market worldwide.

2.1.2 Concept of economic growth

The concept of economic growth is crucial in economics and relates to a sustained increase in the production of goods, services, and employment opportunities. This growth aims to enhance the economic and financial well-being of a nation's citizens. A common definition of economic growth is provided by Hardwick, Khan, and Langmead (1994), who describe it as an expansion in a country's productive capacity, characterized by a continual increase in real national income. In practical terms, economic growth is typically measured using Gross Domestic Product (GDP), which represents the monetary value of all goods and services produced within an economy during a specific time frame, typically a year (Ogunlesi & Adejumo 2016.)

1.2 Theoretical framework

The theoretical framework on which the study is based is the Mundell-Fleming Model. This framework, often referred to as the IS-LM-BP model, is a widely used tool for analyzing the relationship between exchange rates and economic growth. It helps explain how changes in exchange rates affect a country's balance of payments, interest rates, and, ultimately, its economic growth. This model is particularly useful when examining the effects of exchange rate policies, interest rates, and capital flows on a nation's growth (Ayodele., 2014).

1.2.1 Theories of foreign exchange rate:

- (i) Purchasing Power Parity Theory (PPP): This theory suggests that the spot exchange rate between two currencies changes according to the difference in inflation rates between the respective countries. In essence, the equilibrium exchange rate between two countries is determined by the equality of their purchasing power, which means it's related to their relative price levels (Obadan, 2006).
- (ii) The Balance of Payment Theory: this is another key theory regarding exchange

rates. This theory asserts that under free exchange rate systems, the exchange rate of a country's currency is solely dependent on its balance of payments. If a country has a favorable balance of payments, meaning it exports more than it imports, this can raise the exchange rate of its currency. Conversely, if there's an imbalance or disequilibrium in the balance of payments, it can reduce the exchange rate of the country's currency. Essentially, this theory suggests that the exchange rate is determined by the interplay of supply and demand in the foreign exchange market (Jhingan, 2004).

1.3 Empirical literature

A time series analysis of the exchange rate volatility and economic growth in Nigeria has been a subject of interest for researchers. Some of these studies have found a significant effect, suggesting a relationship between exchange rates and economic growth, with causality often flowing from exchange rates to growth. However, other studies have found an insignificant or weak relationship between the two factors. The empirical literature review below summarizes findings from various studies on this topic: Ayodele's study in 2014 reported a positive effect of exchange rates on the Nigerian economy during the period of 2000 to 2012. However, a different study conducted by Abdulkadir, Isaiah, Babatunde, Olutope, and Abiola in 2015, using data from 2000 to 2014, found that the real exchange rate had a negative impact on economic growth in Nigeria.

The study conducted by Adelowokan, Adesoye, and Balogun in 2015 explored the relationship between exchange rate volatility, investment, and economic growth in Nigeria using data spanning from 1986 to 2014. Their findings revealed a negative relationship between the exchange rate and both investment and economic growth.

On the other hand, Anthony, Jonathan, Chiamaka and Onyinye (2018) further

examined another side of the coin with respect to exchange rate movements and the manufacturing sector in Nigeria for the period 1981 to 2016. The variables employed in the study include manufacturing GDP, exchange rate, government capital expenditure, foreign direct investment, credit to private sector and value of import. It was however revealed that exchange rate, government capital expenditure, imports and foreign direct investment have positive relationship with manufacturing GDP, while private sector credit was negatively linked with manufacturing GDP in the country. In the same vein, Ogunmuyiwa and Adelowokan (2018) measured the impact of exchange rate on industrial output in Nigeria from 1986 to 2016, using industrial output and exchange rate. The result showed that exchange rate has a significant positive effect on industrial output in Nigeria.

Adeyemi, and Olawale (2014): Analyzing data from 1980 to 2010, this study concluded that exchange rate volatility had a negative impact on economic growth in Nigeria. It highlighted that exchange rate instability discouraged foreign investment, leading to reduced capital formation and slower economic growth.

Wasiu, Abdulrahman, and Nafisa (2019): Focusing on the period between 1986 and 2011, this research found that exchange rate volatility had a significant negative effect on economic growth in Nigeria. It emphasized that a stable exchange rate was essential to stimulate foreign direct investment, which, in turn, would contribute to economic growth.

Ogunlesi and Adejumo (2016): This study, covering the years from 1970 to 2012, reported that exchange rate volatility negatively influenced economic growth in Nigeria. It highlighted the role of exchange rate stability in promoting economic growth by attracting foreign investment. Afolabi and Esuabana (2019): Analyzing data

from 1986 to 2016, this study found a significant negative relationship between exchange rate volatility and economic growth in Nigeria. It pointed out that exchange rate instability deterred investors and negatively affected economic growth. Adaramola and Saka (2020): Focusing on the years 1981 to 2018, this research found that exchange rate volatility had a significant negative impact on economic growth in Nigeria. The study emphasized the importance of a stable exchange rate in attracting foreign investment and fostering economic growth. In summary, a majority of empirical studies on exchange rate volatility and economic growth in Nigeria have found a consistent negative relationship. Exchange rate instability appears to discourage foreign investment and hinder economic growth. The findings underline the significance of exchange rate stability as a crucial factor in promoting economic growth in the Nigerian context. However, it's important to note that specific periods, methodologies, and data sources may lead to variations in research outcomes.

METHODOLOGY

The study used an ex-post Facto research design. The study is quantitative in nature. In the empirical analysis, E-views 9 econometric software was used. This design and model used in this study follows what was adopted in prior studies like Adaramola & Saka (2020). The data used in this study were purely secondary in nature. The source includes National Bureau of Statistics (NBS) and Central Bank Statistical Data Bulletin. The data used are annual time series over period of 40 years from the period 1981-2021. The variables employed in the study are: Gross domestic product as the dependent variable and exchange rate, money supply, inflation, interest rate and foreign direct investment as independent variables. The model of the study is thus:

$$GDP = f (EXCH, MS, INT, INFL, FDI) \tag{3.1}$$

Where:

GDP= Gross Domestic Product

EXCH= Exchange rate

MS= Money supply

INT= Interest rate

INFL= Inflation

FDI= Foreign direct investment

The semi-log functional form equation of the model becomes:

$$\ln GDP_t = \alpha + \beta_1 EXCH_{1t} + \beta_2 \ln MS_t + \beta_3 INT_t + \beta_4 INFL_t + \beta_5 \ln FDI_t + U_t \tag{3.2}$$

$$\beta_1 < 0, \beta_2 > 0; \beta_3 < 0$$

The study used econometric methods in data analysis. The methods used are: the unit root test to examine the stationarity of the variables; Vector Autoregression (VAR model, and Variance Decomposition) to check for the long run and short run relationships, Granger Causality test and Impulse response was also used to examine causal relationship, and determine the response to shock between and among the variables.

ANALYSIS AND INTERPRETATION OF RESULTS

Estimate of the Regression relationship (OLS)

Dependent Variable: LGDP

Method: Least Squares

Sample: 1981 2021

Included observations: 41

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EXCH	-0.027408	0.003785	-7.240574	0.0000
LM2	1.541644	0.142996	10.78103	0.0000
RINT	-0.015392	0.015858	-0.970660	0.3384
INFL	-0.018456	0.012739	-1.448818	0.1563
FDI	0.000806	0.000238	3.391482	0.0017
C	0.773640	0.767630	1.007830	0.3205
R-squared	0.839011	Mean dependent var		8.533106
Adjusted R-squared	0.816012	S.D. dependent var		2.645780
S.E. of regression	1.134875	Akaike info criterion		3.225381
Sum squared resid	45.07793	Schwarz criterion		3.476147
Log likelihood	-60.12030	Hannan-Quinn criter.		3.316696
F-statistic	36.48121	Durbin-Watson stat		1.549109
Prob(F-statistic)	0.000000			

Source: Authors computation in Eviews 9.

The output above is the estimation result of the Ordinary Least Squares (OLS) showing the relationship between the dependent and independent variables. The result clearly showed a negative relationship between

exchange rate and economic growth in Nigeria. This implies that a one unit change in exchange rate will lead to a variation or change in LGDP by -0.02 percent. This is in line with economic theory that as the

exchange rate decreases, economic growth tends to increase. This suggest that a depreciating currency (lower exchange rate) may boost a country exports, making it goods and services more competitive in the international market. There is positive relationship between money supply and economic growth in Nigeria. This implies that a one unit change in money supply will change LGDP by 1.54%. this typically reflects the idea that a well-managed and controlled expansion of the money supply can contribute to economic activity. The result revealed a negative relationship between interest rate and economic growth in Nigeria. This implies that a one unit change in interest rate will change LGDP by -0.01%.

The result explained a negative relationship between inflation and economic growth in Nigeria. This implies that a one unit change in inflation will change LGDP by -0.01%. There is a positive relationship between

foreign direct investment and economic growth in Nigeria. This implies that a one unit change in FDI will change LGDP by 0.008%. This is in line with the economic notion that foreign direct investment can contribute significantly to increase in overall economic growth. There is a positive relationship between the constant and the LGDP. It showed that when all the variables are held constant, LGDP will change by 0.77% caused by other variables not included in the model.

The R-Squared (R^2) result is 0.839 which showed that about 84% changes in GDP is caused by the independent variables: exchange rate, money supply, interest rate, inflation and foreign direct investment included in the model. this implies that the model has a good fit and was also confirmed by the Adjusted R-Squared having a value of 0.816.

Breusch-Godfrey Serial Correlation LM Test for Autocorellation

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.872909	Prob. F(2,33)	0.4272
Obs*R-squared	2.060062	Prob. Chi-Square(2)	0.3570

Source: Author’s Computation with E-views 9.

Above showed the result for autocorrelation using the Breusch-Godfrey Serial Correlation LM Test. The probability (Prob. F-stat) is 0.42 which is greater than alpha (0.05) at 5% level of significance. Hence, we cannot reject the null of no serial correlation. It means there is no serial correlation among the residuals in the model.

Table 4.1 ADF unit root test for stationarity

Variables	At Level	First Difference 1 (1)	Order of Integration	Remark
LGDP	2.315652	0.527022		Non Stationary
EXCH	1.664020	-2.586770		Non Stationary
M2	-0.573751	-3.830034**	I(1)	Stationary
RINT	-7.701609**	-10.10551	I(0)	Stationary
INFL	-4.102931**	-5.821307	I(0)	Stationary
FDI	4.798310**	-0.109611	I(0)	Stationary

Source: Authors computation using E-views 9.

Note *, **, *** represent 1%, 5%, and 10% significance levels respectively.

The table presented in Table 4.3 displays the results of the unit root/stationary test. This test is an essential step in the analysis of time series data. Its primary purpose is to determine whether the variables being examined exhibit stationarity. To make this determination, we apply the following decision rule:

If the absolute value of the Augmented Dickey Fuller (ADF) test statistic exceeds the critical value at a selected significance level of either 1%, 5%, or 10%, and for the

corresponding order of zero, one, or two, it indicates that the variables in question can be considered as stationary. Conversely, if the ADF test statistic falls below these critical values, it implies that the variables are non-stationary. The result showed that LGDP and EXCH are Non stationary at levels and first difference, however they became stationary at second difference I(2). Conversely, M2 became stationary at first difference and RINT, INFL and FDI all were stationary at levels at 5% critical values respectively.

Table 4.2: Result of Vector Auto Regression (VAR)

Vector Autoregression Estimates

	LGDP	EXCH	LM2	RINT	INFL	FDI
LGDP(-1)	1.399180 (1.47079) [0.95131]	-4.975375 (25.3244) [-0.19647]	0.223842 (0.11322) [1.97703]	8.299229 (9.01665) [0.92043]	-25.70403 (14.1324) [-1.81880]	-753.3980 (547.210) [-1.37680]
EXCH(-1)	-0.033515 (0.00738) [-4.54002]	1.267370 (0.12711) [9.97081]	0.000957 (0.00057) [1.68340]	-0.029277 (0.04526) [-0.64691]	-0.004490 (0.07093) [-0.06330]	-2.745084 (2.74655) [-0.99947]

Source: Author’s Computation with E-views 9.

The estimated result in the Table 4.2 above shows the result of the Vector Autoregression. From the result, it showed that there is a negative and significant relationship between exchange rate and economic growth in Nigeria; hence there is a short-run and long run convergence between them. When there is a negative relationship between the exchange rate and economic growth in the long run, it means that, over an extended period, changes in the exchange rate are associated with a reduction in economic growth. The result is consistent with the findings of Afolabi and Esuabana (2019) which found negative and significant relationship between exchange rates volatility and economic in Nigeria. There can be various reasons for this negative relationship. For instance, a stronger domestic currency might make exports more expensive, leading

to reduced demand for a country's goods and services in international markets. This could hinder economic growth, particularly in export-oriented economies. Additionally, a stable or appreciating exchange rate may discourage foreign direct investment or harm the profitability of sectors that rely on exports. For policymakers, this finding raises important questions. It may indicate the need for policies aimed at stabilizing the exchange rate or carefully managing currency appreciation to avoid detrimental effects on economic growth. It also underscores the importance of considering exchange rate policies in the context of broader economic strategies.

The result showed that there is a positive and insignificant relationship between money supply and economic growth. The result showed a negative and insignificant

relationship between interest rate and economic growth in Nigeria. The result also showed a negative and insignificant

relationship between inflation and economic growth in Nigeria.

Table 4.3 Result of Granger Causality Test

Null Hypothesis:	Obs	F-Statistic	Prob.
EXCH does not Granger Cause LGDP	39	5.30336	0.0099
LGDP does not Granger Cause EXCH		0.77538	0.4685

Source: Author’s Computation with E-views 9.

Note: *, **, *** indicate significant at 1%, 5% and 10% levels, respectively.

The result revealed that exchange rate volatility ((EXCH) granger cause economic growth (LGDP) because the probability is less than alpha at 5% significance level, hence we rejected the null. It implies that the fluctuations or changes in exchange rates can be used to forecast or anticipate future movements in economic growth. In practical terms, this means that policymakers, analysts, or investors might observe patterns in exchange rate volatility and use them as indicators or signals of what might happen to economic growth in the future. For example, if increased exchange rate volatility is followed by economic growth, there could be an argument that the two are related. The result is also consistent with the findings of

Adaramola and Saka (2020) which discovered exchange rates granger causing economics growth and not the other way round. Nonetheless, this relationship can have various implications; it could suggest that exchange rate stability or the management of exchange rate fluctuations is vital for maintaining or promoting economic growth. On the other hand, it could also indicate that an economy's growth prospects are affected by external factors that drive exchange rate volatility.

Economic growth does not granger cause exchange rate as revealed in the analysis above in the table 4.4, as result of which probability is greater than alpha at 5% level, hence we cannot reject the null.

Table 4.4: Result of the Variance Decomposition

Period	S.E.	LGDP	EXCH	LM2	RINT	INFL	FDI
1	1.397620	100.0000	0.000000	0.000000	0.000000	0.000000	0.000000
2	2.884232	95.12689	1.939157	0.075245	0.032824	0.146209	2.679678
3	5.004821	87.55161	5.984237	0.068005	0.045740	0.280879	6.069532
4	7.912292	79.71173	11.22637	0.031226	0.040978	0.348557	8.641144
5	11.77192	72.55460	16.96620	0.021505	0.028695	0.360179	10.06883
6	16.81856	66.55254	22.59330	0.056104	0.016458	0.335318	10.44627
7	23.42289	61.98509	27.55759	0.123099	0.008488	0.291808	10.03393
8	32.18483	58.98829	31.41553	0.196436	0.005819	0.243612	9.150309
9	44.06209	57.52892	33.91239	0.250872	0.007021	0.200227	8.100565
10	60.53350	57.36701	35.05656	0.273276	0.009595	0.166896	7.126670

Source: Author’s Computation with E-views 9.

The estimated result in the table above shows the result of the variance decomposition. The result indicated that the contribution of LGDP to itself is 100% in the first period but declined to 95% in the second period. It continually declined afterwards in successive periods up to 57% in the 10th period in the long run. The result indicated that there is a zero (0) contribution of exchange rate to economic growth in the first period. But, in the second period, the contribution increases to 1% and then increases to 16% in the fifth period and thereafter increases in the long run until 10th year which it then contributed significantly up to 35%. The result also showed a zero contribution of LM2 to economic growth in the first period, 0.02 percent in the fifth period, up to 0.27% contribution in the tenth period. This revealed that the contribution of LM2 was very low within 0% across periods.

4.2 Hypothesis Testing

H₀: There is no short run relationship between exchange rate volatility and economic growth in Nigeria: Based on the results of the VAR model, there is evidence of a negative and insignificant relationship between exchange rate and economic growth. The findings revealed that we reject null hypothesis of no short-run relationship between the two variables. Therefore, it can be concluded that there is a short-run convergence between exchange rate and economic growth. meaning that, over a relatively short period, changes or volatility in exchange rates would significantly impact or predict changes in economic growth.

H₀: There is no long run relationship between exchange rate volatility and economic growth in Nigeria: From the results of the VAR model and Variance Decomposition, it can be concluded that there is indeed a proof of a long-run relationship between the variables under consideration. Therefore, we reject the null of no long run relationship.

H₀: There is no causal relationship between exchange rate volatility and economic

growth in Nigeria: The result of the granger causality test indicates a causal relationship between exchange rate and economic growth in Nigeria within the study time frame. Hence, we reject the null hypothesis of no causal relationship between them.

CONCLUSIONS AND RECOMMENDATIONS

The research examined the effect of exchange rate volatility on the economic growth of Nigeria over the period from 1981 to 2021. The findings reveal a long-term relationship between exchange rates and economic growth, indicating the potential for utilizing exchange rate policies as an effective tool for managing the Nigerian economy. It underscores the importance of implementing a robust exchange rate policy in conjunction with monetary policy to enhance economic output. Furthermore, the key outcome of this investigation indicates that exchange rates, money supply, real interest rates, and investment have an insignificant positive influence on economic growth in Nigeria. In the short term, exchange rates have a positive yet insignificant impact on growth. However, in the long run, exchange rates exhibit a significant negative effect on Nigeria's Gross Domestic Product (GDP). The result also indicated that exchange rates have a causal relationship with economic growth, not the other way around. Money supply and foreign direct investment are drivers of economic growth, while economic growth leads to changes in interest rates in Nigeria. Overall, the study demonstrates that exchange rate volatility can explain changes in economic growth in Nigeria within the study period.

RECOMMENDATIONS

Based on the findings revealed in the research, the following recommendations are made:

- (i) For the fact that a long run relationship exists between exchange rates volatility and economic growth, a managed floating exchange rate regime should be supported. This combines elements of

both fixed and flexible exchange rate systems.

- (ii) Central banks can intervene by way of mutual dialogue with market participants to prevent excessive volatility while still allowing market forces to influence rates. This in turn encourages local production, exports and foreign direct investment which can improve economic growth.
- (iii) Since the result indicated that exchange rate volatility can explain changes in economic growth, a market-determined rates can be encouraged allowing market forces to play a significant role in determining exchange rates which can lead to more efficient allocations of resources and hence increase in economic growth.

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ENTREPRENEURSHIP EDUCATION AND ENTREPRENEURIAL INTENTIONS AMONG BUSINESS EDUCATION STUDENTS OF COLLEGES OF EDUCATION IN KOGI STATE, NIGERIA

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Abstract

This study examined the extent to which entrepreneurship education influences the entrepreneurial intentions of business education students in Colleges of Education in Kogi State. The design of the study was descriptive survey. Population of the study was 420 (153 males and 267 females) business education students in the three Colleges of Education in Kogi State offering business education for 2022/2023 academic session. Simple random sampling technique was used to select a sample size of 215 (79 males and 136 females students). An adapted Entrepreneurial Intention Questionnaire (EIQ) developed by Linan and Chen (2009) was used to collect data for the study. Mean and standard deviation were used to analyse data to answer the research questions and determine the cohesiveness or otherwise of respondents' mean ratings. The z-test was used to test the null hypotheses at 0.05 level of significance. The findings revealed that entrepreneurship education influenced attitude and perceived behavioural control of business education students towards becoming entrepreneurs to a great extent. Gender did not significantly influence the respondents' mean ratings in all the contents covered. It was concluded that business education students in Colleges of Education in Kogi State would benefit from effectively delivered entrepreneurship education programme as it would improve their entrepreneurial intentions. Based on these findings, it was recommended among others that Colleges of Education authorities should assist business education students that indicate intention to become entrepreneurs while in school and after graduation through incubator programmes.

Key Words: Entrepreneurship Education, Entrepreneurial Intentions, Business Education.

Introduction

Entrepreneurship education plays a vital role in preparing young people to face the challenges of an increasingly complex global economy (Ausat, Ayesha, Rijal & Saranani, 2023). Also, Azzaakiyyah, Wanof, Suherlan and Fitri (2023) stated that entrepreneurship education is not only about creating entrepreneurs, but also moulding individuals who are ready to face change, adapt to challenges, and bring about the necessary innovations in a globalized society and economy. Furthermore, entrepreneurship describes the application of an entrepreneurs' behaviour, attributes and skills within business setting, using entrepreneurial

intentions (Igwe, Madichie, Chukwuemeka, Rahman, Ochinanwata & Uzuegbunam, 2022). Conceptually, entrepreneurship education refers to a specialized knowledge that inculcate in learners the traits of risk-taking, innovations, arbitrage and coordination of factors of production for the purpose of creating new products or services for new and existing users within human communities (Abdulazeez, 2022).

However, in order to promote the rate at which enterprises would be created in any country and analyze the future development of a nation, it is usually recommended to engage in studying entrepreneurial intention. Entrepreneurial intention can be defined as a

person's willingness to involve in entrepreneurial activities, to be self-reliant and to perform entrepreneurial behaviour (Khardin, Giatman & Yuliana, 2022). Furthermore, Mahmudin (2023) stated that an individual may have potentiality to be an entrepreneur but lack the intention and also the conversion of entrepreneurial activities. Therefore, to investigate the individuals' intention towards self-employment will offer a meaningful inspiration for researchers to forecast entrepreneurial stages and entrepreneurship activities which can be successful in a way of setting out the importance of entrepreneurial intention.

The development of an entrepreneurial intention and the adoption of entrepreneurial conduct are the two steps that make up the entrepreneurial process (Ohashi Kusu, Inoue, Tsukagoshi, Takeda & Saija, 2023). Every venture begins with the creation of an entrepreneurial intention, which is a good indicator of future entrepreneurial activity; therefore, having an entrepreneurial intention is a prerequisite for the growth of entrepreneurship (Neneh, 2022). Moreover, despite the usefulness of entrepreneurship education and its widespread adoption in Nigerian higher education institutions, very little has been reported about its effect on entrepreneurial intentions. This paper would enhance the knowledge on the impacts of entrepreneurship education on entrepreneurial intention towards building a sustainable economy given that entrepreneurship has been construed as a key driver of any economy.

Statement of the Problem

Entrepreneurial intention is an important field in entrepreneurship, although the factors that determined entrepreneurial intention of tertiary institutions students still lack adequate empirical evidence. However, it is noted that empirical research that ascertained the extent entrepreneurship education influences the entrepreneurial intentions of Colleges of Education students (business education students in particular) in Nigeria and specifically in Kogi State is limited.

Ascertaining the influence of entrepreneurship education on the factors that shape Colleges of Education students' intentions to become entrepreneurs is critical to enable business education stakeholders make informed decisions, hence this study.

Objective of the Study

The main objective of this study was to find out the extent to which entrepreneurship education influences the entrepreneurial intentions of business education students in Colleges of Education in Kogi State. Specifically, the study sought to:

1. Determine the extent to which entrepreneurship education influences attitude of business education students in Colleges of Education in Kogi State towards becoming entrepreneurs.
2. Ascertain the extent to which entrepreneurship education influences perceived behavioural control of business education students in Colleges of Education in Kogi State.

Research Questions

The following research questions guided the study:

1. To what extent does entrepreneurship education influences the attitude of business education students in Colleges of Education in Kogi State towards becoming entrepreneurs?
2. To what magnitude does entrepreneurship education influences perceived behavioural control of business education students in Colleges of Education in Kogi State towards entrepreneurial intentions?

Null Hypotheses

H01: Entrepreneurship education does not influence the attitude of male and female students of business education students in Colleges of Education in Kogi State towards becoming entrepreneur.

H02: Entrepreneurship education does not have significant influence on perceived behavioural control of male and female business education students in Colleges of Education in Kogi State towards entrepreneurial intentions.

Methodology

The study adopted a descriptive survey research design. Survey research design was considered most appropriate for this study because a questionnaire was used to elicit respondents’ opinions on the aim of the study. The study was conducted in Kogi State which is located in North Central, Nigeria. The population for this study consisted of 420 (153 males and 267 females) business education students in the three Colleges of Education in Kogi State offering business education as at 2022/2023 academic session, which is comprised of: 182 students from Federal College of Education, Okene; 78 from Kogi State College of Education (Technical), Kabba and 160 students from Kogi State College of Education, Ankpa. The sample size of 215 (79 male and 136 female) students was selected using stratified random sampling technique, in the process, two states were purposely formed based on gender, that is male and female students, that enabled the test of the hypothesis..

Simple random sampling technique was used to select 104 students from Federal College of Education, Okene, 35 from Kogi State College of Education (Technical), Kabba and 76 students from Kogi State College of Education, Ankpa giving a total of 215 students. The data for the study were collected through an adapted Entrepreneurial Intention Questionnaire (EIQ) developed by Linan and Chen (2009), however, the researchers made some modifications on the items of the instrument to suit the present study. The validity of the instrument was established using three experts, two from the field of business education and one from measurement and evaluation. The Cronbach alpha co-efficient was used to establish the internal consistency of the instrument. The reliability coefficients obtained for the four clusters (a to d) are 0.97, 0.80, 0.71 and 0.75 respectively with the overall reliability coefficient of 0.80, indicating that the instrument was reliable for this study.

Descriptive statistics of mean and standard deviation were used to answer the research questions and determined the homogeneity or otherwise of the respondents’ views, while the z-test was used to test the null hypothesis at 0.05 level of significance. The decision was that, when calculated z-cal is greater or equal to s-crit, the null hypothesis was rejected otherwise the null hypothesis was retained.

Results

Table 1: Respondents’ mean ratings on the extent entrepreneurship education influences attitude of business education students towards becoming entrepreneurs

S/N	Items on Attitude	\bar{x}	SD	Remarks
1.	Entrepreneurship education: Increases my belief that a career in entrepreneur will be total attractive to me	3.3	1.24	Great Extent
2.	Increases my desire to start a business if I have the opportunity and resources.	3.29	1.19	Moderate Extent
3.	Improves my understanding that amongst various options, I will rather be anything but an Entrepreneur.	3.22	1.19	Moderate Extent

4.	Gives me the belief that being an entrepreneur will give me great satisfaction.	3.64	1.14	Great Extent
5.	Increase my desire to be my own boss rather than have a secured job.	3.57	1.18	Great Extent
6.	Makes a career as an entrepreneur attractive for me.	3.60	1.01	Great Extent
7.	Makes me feel that if I have the opportunity and resources, I would like to start a firm.	4.20	0.89	Great Extent
8.	Makes me feel that being an entrepreneur would entail greater satisfactions.	3.57	1.19	Great Extent
9.	I believe that if I will start my business, I will certainly succeed.	4.06	1.05	Great Extent
10.	Provides more advantages than disadvantages to me.	3.87	0.94	Great Extent
	Cluster Mean	3.66		Great Extent

Source: Researchers’ Computation, 2024

Table 1 shows to a great extent that entrepreneurship education influences business education students’ attitude towards becoming entrepreneurs. This is shown by the cluster mean of 3.66. The standard deviations for all the items are within the same range showing that the respondents are not wide apart in their ratings.

Table2: Respondents’ mean ratings on the extent entrepreneurship education influences perceived behavioural control of business education students towards entrepreneurial intentions.

S/N	Items on perceived behavioural control	\bar{x}	SD	Remarks
11.	Entrepreneurship education: Makes it easy for me to start a new firm and keep it viable.	3.14	1.19	Moderate Extent
12.	Improve mybelieve that would be completely enable to start a business.	4.14	0.94	Great Extent
13.	Help me to control the creation process of a new business.	3.68	1.16	Great extent
14.	Increase my understanding that if I tried to start a business, I would have a high chance of being successful.	4.26	0.81	Great extent
15.	Helps me to know all about the practical details needed to start a business.	4.42	0.74	Great extent
16.	Helps me to identify the number of events outside my control which could prevent me from starting a new business are very few			Great extent
17.	Increases my understanding that developing a business idea would be	4.33	0.63	Great extent

	easy.			
18.	Increase the belief that to start a firm would be easy for me.	2.31	0.93	Small Extent
19.	Improves the belief that keeping a firm working well would be easy for me.	2.61	1.20	Moderate Extent
20.	Helps me to know how to develop an entrepreneurial project.	4.38	0.68	
21.	Enhances the idea that if I try to start a firm, I will have a high probability of succeeding.	4.69	0.46	Very great extent
22.	Increases the understanding that if I want, I could become self-employed after my studies.	4.73	0.52	Very Great Extent
23.	To enhance the belief that to start my own firm would probably be the best way for me to take advantage of my education.	4.11	0.82	Great Extent
	Cluster Mean	3.90		Great Extent

Source: Researchers’ Computation, 2024

Table 2 shows that entrepreneurship education influences perceived behavioural control of business education students in Colleges of Education in Kogi State to a great extent. This is shown by the cluster mean of 3.90. The standard deviations for all the items are within the same range showing that the respondents are not wide apart in their ratings.

Table 3: Summary of z-test analysis of male and female respondents on the extent entrepreneurship education influences their attitude towards becoming entrepreneurs

Gender	N	\bar{x}	SD	α	df	$z - cal$	$z - crit$	Decision
Male	79	3.86	0.98					
				0.05	213	0.21	1.96	Not significant
Female	136	3.83	0.98					

Source: Researchers’ Computation, 2024

Table 3 shows that the calculated z-value of 0.21 is less than the critical z-value of 1.96 ($0.21 < 1.96$) at 0.05 level of significance and 213 degree of freedom. This means that male and female business education students in Colleges of Education in Kogi State did not differ significantly in their mean ratings on the extent entrepreneurship education influences their attitude towards becoming entrepreneurs. Therefore, the null hypothesis was accepted.

Table 4: Summary of z-test analysis of male and female respondents on the extent entrepreneurship education influences their perceived behavioural control towards entrepreneurship intention.

Gender	N	\bar{x}	SD	α	df	$z - cal$	$z - crit$	Decision
Male	79	3.57	0.88					
				0.05	213	-0.62	1.96	Not significant
Female	136	3.65	0.97					

Source: Researcher’s Computation, 2024

Table 4 shows that the calculated z-value of -0.62 is less than the critical z-value of 1.96 (-0.62<1.96) at 0.05 level of significance and 213 degree of freedom. This means that male and female business education students did not differ significantly in their mean ratings on the extent entrepreneurship education influences their perceived behavioural control. Therefore, the null hypothesis was accepted.

Discussion

Finding of this study revealed that business education students were of the opinion that entrepreneurship education influences their attitude towards becoming entrepreneurs to a great extent. This was shown by a mean score of 3.66 which fell under great extent category range of 3.50-4.49. This finding is in line with the study of Oluwatoyin and Luqman (2019) which reported that entrepreneurship education is geared towards changing undergraduates’ attitude towards becoming self-employed upon graduation. The study is also in agreement with that of Agboola (2021) which disclosed that entrepreneurship education does not only equip students with practical skills required for functional living, but also focused on changing students’ negative attitudes about entrepreneurship. Agboola (2021) further stated that positive attitude is significant to the process of business creating and to overcome the perceive barriers hindering individuals from starting small businesses. More so, Abdulazeez (2022) agreed that desirability to be an entrepreneur is a measure

of an individual’s attitude toward entrepreneurship. In addition, the result of the test of null hypothesis showed that male and female business education students in Colleges of Education in Kogi State did not differ significantly in their mean ratings on the extent entrepreneurship education influences their attitude towards becoming entrepreneurs. This concurs with the findings of Ali, Jabeen and Burham (2023) which revealed that gender did not influence business education students’ rating on the extent entrepreneurship education influenced their attitude towards becoming self-employed upon graduation.

Furthermore, the study also showed that business education students agreed to a great extent that entrepreneurship education influences their perceived behavioural control. The findings of this study is in line with the earlier findings of Abioye and Babatunde (2022) and also Douglas, Shepherd and Venugopal (2021) which revealed that entrepreneurship education to a great extent influences students’ perceived behavioural control which is closely related to self-efficacy that is students who need entrepreneurial exposure have a high score on perceived behavioural control. This means that the greater the students are exposed to entrepreneurship education, the greater they will perceive that they possess relevant skills and therefore, are capable of handling challenges that come with being entrepreneurs. Similarly, the test of null hypothesis showed that male and female business education students do not differ significantly in their mean ratings on the

extent entrepreneurship education influences their perceived behavioural control. This finding concurs with that of Ezenwanne (2023) which revealed that gender did not significantly influence business education students' opinion on the influence of entrepreneurship education on students' perceived behaviours control.

Conclusion

In the light of the findings of this study, it was concluded that business education students in Colleges of Education in Kogi State would benefit much from effectively delivered entrepreneurship education programme as it would improve their entrepreneurial intentions. As Nigeria is facing increased youth unemployment and security challenges, entrepreneurship education in Colleges of Education is imperative as it would enhance business education students' attitude towards becoming entrepreneurs. The findings are relevant considering the fact that employment creation has become a top priority for governments and especially for business education programme bearing in mind the present unemployment rate among the graduates and the dwindling economic resources in the country. This, therefore, has serious implications for resources and material provision, research and development activities in the training and retraining of business education lecturers in Colleges of Education and other tertiary institutions in Nigeria.

Recommendations

Based on the findings and conclusion of the study, the researcher recommends that:

1. Colleges of Education authorities should assist business education students that indicate their intentions to start enterprise while in school and after graduation through incubator programme. This will help to encourage more students to be serious with their intention to be entrepreneurs.

2. Colleges of Education authorities should also ensure that well equipped and functional entrepreneurial development centres are made available for business education students in Colleges of Education.
3. Government should make entrepreneurship education compulsory from primary level school in order to positively influence youth's attitude towards entrepreneurship development.
4. Governments and Professional bodies such as the Association of Business Educator of Nigeria (ABEN) should organise regular seminars, symposium and conferences on entrepreneurship development to enhance business education students' entrepreneurial intentions.

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TRENDS, INSTABILITY, AND DECOMPOSITION ANALYSIS OF CASHEW NUTS PRODUCTION IN NIGERIA (1981-2021)

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Abstract

Nigeria is the largest producer of cashew nuts in Africa and consistently ranking within the five global producers. Despite the abundant opportunities, its productivity has remained far below its potential. Therefore, this paper analyzed the trend, instability, and decomposition of cashew nuts production in Nigeria for three periods namely Period I (1981-2021), Period II (1981–2001), and Period III (2002–2021). In Period I, harvested area, yield and production exhibited both quadratic and cyclical trend effects with an increasing trend. While both Periods II and III, exhibits a linear trend, harvested area, yield and production at an increasing rate for Period II and decreasing rate for Period III. Harvested area for the three periods was relatively stable, there was instability in the fluctuations of yield and production for the whole periods. The decomposition analysis revealed an increase in production which was largely due to expansion of harvested area for the three periods, while the interaction between area and yield effect declined production output by 0.348%, 0.26% and 0.21%. The study also found that production output has the highest instability index (67.76). To further stabilize cashew production in Nigeria, there is need for efficient resources allocation, coupled with flexible production systems.

Keywords; Cashew nuts production, Trend analysis, Decomposition analysis, Nigeria, Agricultural sector

Introduction

Nigeria's involvement in cashew nut production dates back to the 1950s, when plantations were first established in several states, including Kogi, Anambra, Imo, Enugu, Oyo, and Osun. However, cashew nuts were not widely cultivated or commercially exploited until recently, as cocoa and palm oil were the dominant crops in the southwest and southeast regions, respectively, and received most of the attention. Nigeria is geographically located within the cashew belt, which stretches across several west African countries known for their cashew cultivation (Omoluabi *et al.*, 2021).

Nigeria has vast land resources of approximately 25 million hectares of arable land of which only a fraction is currently utilised for cashew farming (Ogunniyi *et al.*,

2020). It is said to be the 5th largest cashew producers in the world (Ozioruva, 2023). The production of cashew is estimated to about 100,000 tons of raw nuts per annum. About 60 to 70% of the local production is commercialized of which about 90% is exported in the form of raw nuts. The country has seen a consistent increase in cashew export volumes and earnings. According to the Nigerian Export Promotion Council (NEPC), cashew exports reached a peak of 260,000 metric tons valued at \$402 million in 2019 (NEPC, 2020). Cashew nuts are a vital agricultural commodity in Nigeria, contributing significantly to the country's economy and export earnings. Nigeria is one of the largest producers of cashew nuts globally, with the industry playing a crucial role in poverty reduction, job creation, and foreign exchange earnings (FAO, 2021). The country has experienced a surge in foreign

exchange earnings from cashew exports. According to the Nigerian Export Promotion Council (NEPC), cashew export earnings increased from \$152.26 million in 2015 to \$402.05 million in 2019, indicating a compound annual growth rate of approximately 37% (NEPC, 2020). The 2022 non-oil performance report shows cashew ranked fifth amongst leading non-oil exportable in the country (NEPC, 2023). Currently, Vietnam is the largest export market for Nigerian cashew kernels, with annual exports worth \$3.4 million. However, Vietnam is also Nigeria's main competitor globally. The German market presents the largest untapped potential, with an estimated value of \$860,000 (NEPC, 2018).

Nigeria has favorable conditions for cashew production and has experienced significant growth in cultivation and export, making it a key player in the global industry (Omotesho *et. al.*, 2018). This growth presents opportunities for expanding cultivation and increasing productivity. Recent investments in processing plants have enhanced value addition and competitiveness (Shittu *et. al.*, 2019).

Despite the significance of cashew nuts as an important cash crop in Nigeria agricultural sector, limited studies have been conducted on the long-term trends and patterns of cashew nut production, the factors contributing to production instability, and the decomposition analysis of production growth. The specific objectives were to: analyze the trends of cashew nut production over the specified periods of time, identify the factors contributing to instability and fluctuations and decompose the variation components and determine the relative contribution of each factor to the overall fluctuations in cashew nuts production.

Empirical Review

Several studies have explored different aspects of cashew nuts production in Nigeria. Omonona and Lawal (2011) conducted a study on the determinants of cashew nuts production in Nigeria using panel data

analysis. They found that factors such as land area, labor, fertilizer use, and credit significantly influence cashew nuts production. However, their study did not focus on the trend, instability, and decomposition analysis of cashew nuts production. Another study by Adegbola *et. al.*, (2016) assessed the profitability and competitiveness of cashew nuts production in Nigeria. They found that cashew nuts production was profitable and had a comparative advantage in the international market. However, their study did not analyze the trend and instability in cashew nuts production. Another study by Omokayode and Adejobi (2018) investigated the trends of cashew production in Nigeria from 1961 to 2014. They found a linear trend, indicating a consistent increase in cashew production over the years. The study revealed that the production levels were relatively low in the 1960s and 1970s but gradually increased from the 1980s onwards, with spikes in certain years. Furthermore, a study by Ezekiel *et. al.* (2017) examined cashew production in Nigeria from 1970 to 2012. This study discovered both linear and quadratic trends. They identified a linear trend during the initial period (1970-1985), followed by a quadratic trend in the later years, showcasing an accelerating growth rate until a certain point.

Interventions and policies in Nigeria on Cashew nuts production

During the 1970s and 1980s Nigeria has experienced a significant boost in cashew nut production. The favourable climate and suitable soil condition in many sparts of the states especially in the southwestern states contributes to the expansion of cashew nuts cultivation. The government encouraged cashew farmers by providing financial supports, training program and improved techniques to improve productivity. As a result, the country witnessed a steady growth during the period (this coincides with the Period II (1981-2001) of the study. However, in the early 2000s, the cashew industry witnessed a lot of challenges like inadequate

infrastructure, modern processing facilities and limited access to the international market. This led to the decline in both production and export quantity. To address these issues, by that time, The Nigerian government has initiated and implemented various policies and initiatives to support the growth of cashew production. In 2011, the Agricultural Transformation Agenda (ATA) was introduced to revitalize the agricultural sector, with a focus on enhancing cashew production and promoting high-value crops like cashew through increased investments in research and development, improved infrastructure and enhanced market development (Federal Ministry of Agriculture & Rural Development, 2011). This aimed to boost the overall agricultural sector and unlock the potential of cashew production in Nigeria. The National Cashew Association of Nigeria (NCAN) was established to provide coordination and support to cashew farmers. National Agricultural Investment Plan (NAIP) for 2010-2015, emphasized the importance of cashew nuts as a major agricultural commodity and aimed to increase the production capacity of cashew farmers. It provided technical support, access to improved seedlings, and capacity building programs to enhance the productivity and profitability of cashew farmers. Furthermore, the Nigerian government has shown a commitment to promoting cashew nut production through various agricultural policies and interventions. For instance, initiatives like the National Cashew Development Program (NCDP) have been implemented to enhance productivity, quality, and value addition in the cashew industry (Federal Ministry of Agriculture & Rural Development, 2016). This length of period represents Period III of the study.

Materials and Methods

This paper utilized secondary data from FAOSTAT and the Nigerian Export Products Council (NEPC) for the period between 1981 and 2021, focusing on cashew nuts production in Nigeria. The data included time series information on area, production, and yield. The analysis was divided into three

distinct periods: The entire study period (1981-2021) which is Period I and Period II between 1981-2001 and Period III (2002-2021). This allowed for a comprehensive examination of trends and patterns in cashew nuts production over the years. The statistical techniques employed, includes trend analysis, instability analysis, and decomposition analysis. The trend analysis was used to examine the long-term production patterns of cashew nuts in Nigeria over the study period, identifying any significant upward or downward trends and providing insights into the overall growth or decline of cashew nuts production. While the instability analysis assessed the volatility and fluctuations in cashew nuts production, highlighting periods of instability and identifying potential causes and the decomposition analysis was used to dissect the factors contributing to changes in cashew nuts production.

Analytical Tools

Compound Annual Growth Rate

Compound Annual Growth Rate (CAGR) can also be applied to analyze the growth of agricultural production over a specific period of time. CAGR in agricultural production refers to the annualized rate of growth in the output of crops, livestock, or other agricultural commodities. According to a study by Jayne et al. (2010), CAGR is a valuable tool for understanding the long-term trends and performance of agricultural production. It allows researchers and policymakers to assess the growth rate of agricultural outputs in a standardized manner, considering the compounding effect on production levels. To analyze the growth rate of cashew nuts in terms of area harvested, yield, and production, the compound annual growth rate (CAGR) was used instead of the linear growth rate (LGR). This is because LGR has limitations, such as not being suitable for comparing growth rates across different periods, failing to account for seasonal and cyclical fluctuations and ignoring the compounding effects in time series data as asserted by Dandekar (1980).

Instead, the compound annual growth function was used, which is specified as:

$$X_t = ab^t \dots\dots\dots (1)$$

$$\text{Log } X_t = \text{Log } a + t \text{ log } b \dots\dots\dots (2)$$

$$B = (1 + r) / 100$$

Where, X_t = Area/Production/Yield of cashew nuts in the year ‘t’

t= time element which takes the value 1, 2, 3,n

a = intercept

b = regression coefficient

Compound growth rate was worked out as follows: $\text{CGR (r)} = (\text{antilog } b - 1) \times 100$ Student ‘t’ test was used to test the significance of the CGR.

Instability analysis

This study used two measures to assess instability in cashew production: the simple coefficient of variation (CV) and the Cuddy-Della Valle index (CDVI). This approach was taken because standard deviation and CV can sometimes exaggerate risk, instability, and volatility in time series data (Gilbert and Morgan 2010). While CV and standard deviation are commonly used to measure risk and instability in agricultural production, they have limitations, as they can overestimate instability. To provide a more comprehensive

analysis, both CV and CDVI were used. The CDVI, on the other hand, provides a more nuanced measure of instability, allowing for a more accurate assessment of variability in area harvested, yield, and production of cashew nuts. The instability and extent of variability in area harvested yield and production of cashew nuts was examined using Cuddy-Della Valle Index (Cuddy and Valle, 1978). Thus, this study deployed both coefficient of variation and Cuddy-Della Valle index (CDVI). The CV was calculated as:

$$CV = \frac{\text{standard deviation}}{\text{mean}} \times 100 \dots\dots\dots (3)$$

While Cuddy and Valle (1978), CDVI is estimated as follows:

$$CDVI = CV = \sqrt{1 - R^{-2}} \dots\dots\dots (4)$$

Where:

IX= Instability index

CV = Coefficient of variation (in percent)

R^2 = Coefficient of determination from a time trend regression adjusted by the number of degrees of freedom.

Decomposition analysis

The production of a crop is essentially determined by two factors: the harvested area and the average yield. To understand the relative impact of these factors on cashew nuts production, a decomposition analysis model was employed. This model breaks down the changes in production into three

components. These are, the contribution of changes in harvested area, the contribution of changes in average yield and the interaction between harvested area and yield. The decomposition analysis in this study was performed using the following equation as used by Verma et al., (2017) and Sharma et al., (2017).

$$\Delta P = (A^1 - A^0) \times \frac{Y^1 + Y^0}{2} + (Y_1 - Y_0) \times (A_1 + A_0)/2 + ((A_1 - A_0) \times (Y_1 - Y_0))/2$$

.....(5)

Where:

- ΔP = change in production ('000 tonnes)
- A_1 and A_0 = initial and final harvested area ('000 tonnes/hectares)
- Y_1 and Y_0 = initial and final average yield ('000 tonnes)

Results and Discussions.

Growth Trends in Cashew nuts Production in Nigeria

The analysis revealed a positive linear growth trend in cashew nuts production in Nigeria over the first period of the study, then a quadratic trend in the second study periods, while the third period exhibits a negative growth trend. This finding collaborates with the work of Ezekiel et al, (2017) and Awoyinka and Adeoye (2015), whose work reported both linear and quadratic trends. They identified a linear trend during the initial period, followed by a quadratic trend in the later years, showcasing an accelerating

growth rate until a certain point. This pattern suggests that cashew production experienced rapid growth in the early years but slowed down in the later periods. The country experienced fluctuations in production levels, with both upward and downward shifts caused by various factors such as changes in weather patterns, market demand, and government policies. These instabilities have had significant implications on the cashew nuts industry, impacting the income and livelihoods of farmers, as well as the overall economic development of the country. The overall estimated trend growth for the study period (1981-2021) was given by quadratic trend equation viz:

$$y = b_0 + b_1t + b_2t^2 \dots\dots\dots(6)$$

$$\Delta y/\Delta t = b_1 + 2b_2t \dots\dots\dots(7)$$

Therefore, the estimated trend growth equation for the entire period of study was,
 Area = 23892.29 – 1466.9t with R² of 76.1 % and highly significant at 1%
 Yield = 1489.37 – 67.3t with R² of 52 % and highly significant at 1%
 Production = 66115.7 – 2978t with R² of 55.5 % and highly significant at 1%
 The trend in cashew nuts growth in Nigeria

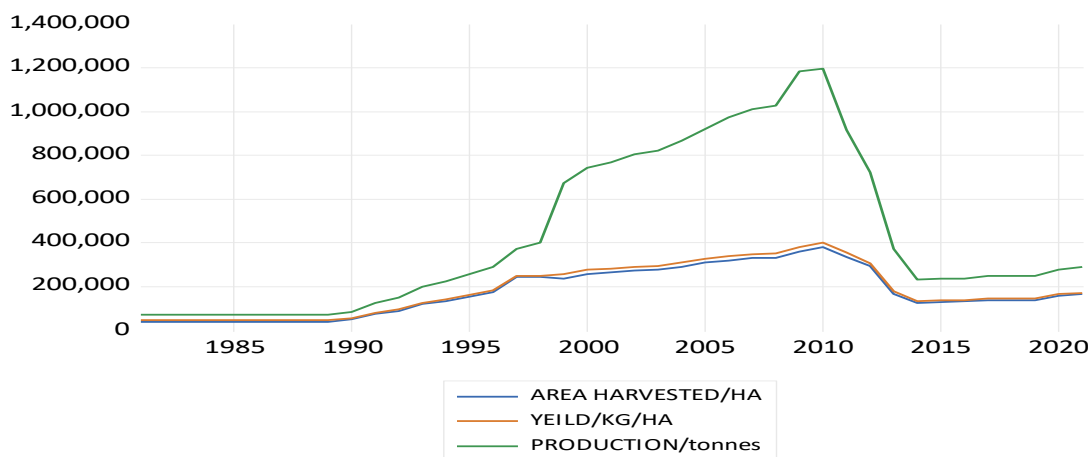


Fig. 1 Trend in cashew nuts production in Nigeria

Growth rate of cashew nuts production in Nigeria.

The CAGR of area, production, and yield of cashew nuts in Nigeria is presented in Table 1. The CAGR of area has decreased significantly from 12.8% percent in period II to -5.3% in period III. An overall growth rate of 4.6 percent in area was observed in overall period which was significant at one percent level. The period II witnessed significant higher growth in production of 16.9 percent which was attributed to significant increase in area (12.8%) and yield (3.6 %). While production, yield, and area growth during period III in the country has significantly declined by -11.9%, -7.0% and -5.3%

respectively. It could be noted that despite the numerous interventions and policies on improving cashew nut production established during period III, the growth rates for area, production and yield were negative and statistically significant. This could be due to climatic change variability that recently plagued production of crops during this period, cashew nuts inclusive (cashew nuts production is extremely vulnerable to the adverse effects of changing weather patterns). Moreso, it was noticed that during the overall period (period I), the production of cashew nuts increased significantly at the rate of 6.4 percent. Invariably, this period depicts the growth in the overall periods, which also projects a steady upward growth.

Table 1. Compound growth rate (%) of area harvested, yield and production output of cashew nuts for the three study periods.

Study Period	Harvested Area (ha)	Yield(t/ha)	Production (MT)
Period I (1981-2021)	4.6***	1.7***	6.4***
Period II (1981-2001)	12.8***	3.6***	16.9***
Period III (2002-2021)	-5.3***	-7.0***	-11.9***

*** indicates 1% level of significance.

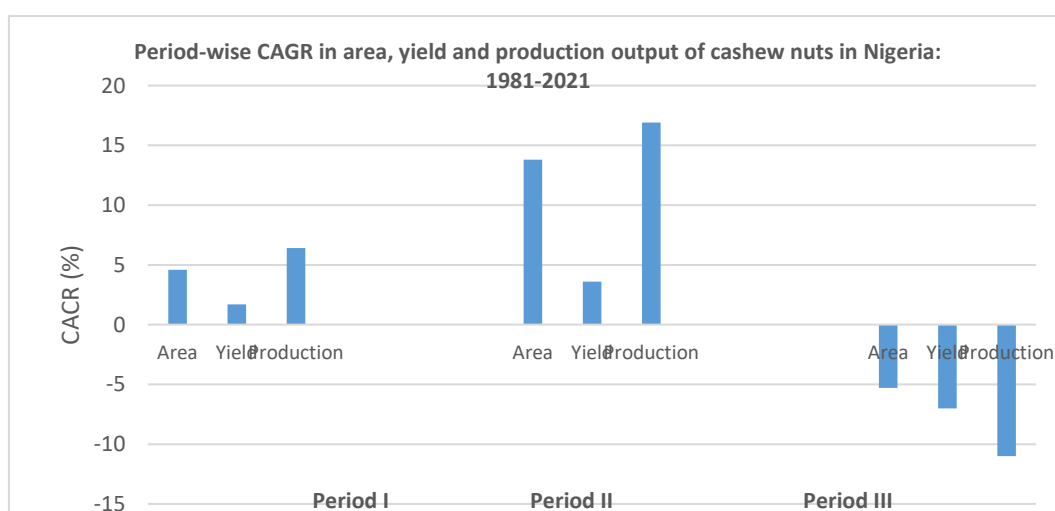


Fig.2. Shows the period wise CAGR in area, yield and production outputs of cashew nuts in Nigeria (1981-2021)

Instability in cashew nuts production

CDVI measures the degree of fluctuation or variation in a dataset or time series. It

indicates the extent to which data points deviate from the average or mean value. A higher CDVI suggests greater variability,

indicating that the growth rate exhibits significant fluctuations or volatility.

Cashew nuts production in Nigeria for the period under study was plagued by instabilities and fluctuations in all the production indices observed. There tend to be a stability in instability for harvested area. It

was noted that harvested area had the ability to maintain an overall level of stability despite the presence of instabilities and fluctuations. Though, unstable for the three periods, harvested area was relatively stable. Adversely, yield and productivity were highly volatile and unstable.

Table 2. Instability index for harvested area, yield, and production outputs of cashew nuts in Nigeria for the three study periods.

Study Period	Instability index (%)	Harvested Area (ha)	Yield (t/ha)	Production (MT)
Period I (1981-2021)	CV	78.85	74.46	101.58
	CDVI	35.52	52.60	67.76
Period II (1981-2001)	CV	87.46	73.53	115.04
	CDVI	34.65	51.99	77.51
Period III (2002-2021)	CV	62.07	65.81	83.32
	CDVI	35.70	31.70	45.63

Decomposition Analysis of cashew nuts production

Area contributed to increase in cashew nut production with about 95.14%, 87.68% and 98.28% respectively for the three periods. Only land (area) effect has extremely higher effect on production of cashew nuts, while the interaction between area and yield was extremely small (0.348%, 0.26% and 0.215% respectively) for the three periods under the study. This implied that increasing or decreasing area dedicated for cashew nuts production would not significantly influence the overall yield or productivity of the crop. This suggests a need to focus on optimizing other important factors and strategies to improve crop productivity rather than solely

relying on expansion of the cultivated area. Thus, such factors like weather condition, soil quality, good agricultural practices (GAPs) and regeneration of older trees might have stronger influence on the yield compared to changes in the area cultivated. This collaborates with the work of Martin and Kasuga (1995) and Aliyu (2004) who worked on cashew production in Tanzania and Nigeria respectively and noted that all on-farm sites in their studies contained an appreciable proportion of very low-yielding trees. And suggest that in order to improve the productivity of smallholder cashew farms a combination of selective thinning of poor yielding trees and planting available spaces with improved material is required.

Table 3. Percentage contribution of harvested area, yield towards production of cashew nuts over the three study periods.

Effects	Period I (1981-2021)	Period II (1981-2001)	Period III (2002-2021)
Area	95.140	87.677	98.276
Yield	4.512	12.063	1.509
Interactive	0.348	0.260	0.215
Total	100	100	100

Conclusion and Recommendations

The study found that cashew nuts production in Nigeria has experienced significant growth over the past four decades, with a steady upward trend observed. However, there were periods of instability and fluctuations in production levels, influenced by various factors such as climate change, pests and diseases, and policy interventions. Furthermore, through decomposition analysis, the study identified the drivers behind the growth in cashew nuts production in Nigeria. It was found that expansion in harvested area played a critical role in driving the production growth, outweighing the influences of yield. This emphasizes the importance of land management, expansion of cashew orchards, regeneration of older trees and improving cultivation practices to harness the full potential of the industry.

Thus, these findings highlight the need for strategic planning and interventions in the cashew industry to ensure stable and long-term sustainable production. The following recommendations are made.

1. As decomposition analysis showed that expansion in harvested area drove production growth, by prioritize sustainable land management practices, in order to ensure stable and expanded cashew orchards, regeneration of older trees, and improved cultivation practices.
2. Equally the analysis revealed that yield growth contributed less to production growth, therefore, focusing on improving yield through climate-resilient cashew varieties, best practices, and training programs for farmers will enhance cultivation practices and in turn reduce production instability, and increase overall production levels.
3. As policy interventions influenced production trends, government should encourage supportive policies that promote a stable and growing cashew industry, such as subsidies for farmers, research and development funding, and trade agreements that promote export expansion.

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META-SYNTHESIS: THE POLITICAL ECONOMY OF SOCIAL ASSISTANCE IN NIGERIA, HOLISTIC EXPLORATION OF NATIONAL POVERTY REDUCTION WITH GROWTH STRATEGY (NPRGS) SOCIAL INVESTMENT POLICY

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Abstract

This study offers a comprehensive analysis of the political economy of social assistance and poverty reduction policy-making in Nigeria between 2020 and 2024. Against the backdrop of significant socio-economic challenges exacerbated by the Covid-19 pandemic, violent conflicts, and climate change, the study aims to elucidate the factors influencing the formulation and implementation of social assistance policies at the national level. The study provides a contextual overview of Nigeria's socio-economic landscape during the specified period, highlighting the devastating impacts of the Covid-19 pandemic on the economy, including increased poverty and unemployment rates. It further examines the effects of violent conflicts, such as herders' clashes and insurgency, and the ongoing challenges posed by climate change on the country's socio-economic stability. Key to this analysis is an exploration of the national policy landscape, focusing on initiatives like the National Poverty Reduction with Growth Strategy (NPRGS). Specifically, Pillar 4 of the NPRGS, which targets risk reduction, vulnerability mitigation, and wealth creation through vocational training, micro-enterprise development, and agricultural diversification, is examined in depth. A significant portion of the study is dedicated to unpacking the political economy factors shaping social assistance policies in Nigeria by identifying and evaluating the roles of various actors and interest groups, including government agencies, political parties, civil society organizations, international donors, and private sector stakeholders. Their positions, arguments, and influence on policy formulation and implementation are scrutinized to understand the dynamics driving social assistance initiatives. Through a combination of policy review, stakeholder analysis, and impact assessment, this study aims to provide insights that can inform the design and implementation of more effective social assistance policies in Nigeria. Ultimately, the research seeks to contribute to the ongoing efforts to alleviate poverty and build resilience among Nigeria's most vulnerable populations in the face of complex and interconnected socio-economic challenges.

Keywords: Nigeria, Social Assistance, Poverty Reduction, Political Economy, Policy-making

Introduction

Nigeria, Africa's most populous country, faces significant socio-economic challenges that have been exacerbated by a series of recent crises. Between 2020 and 2024, the nation has grappled with the profound impacts of the Covid-19 pandemic, violent conflicts such as

herders' clashes and insurgency, and the ongoing effects of climate change.

In response to these multifaceted challenges, the Nigerian government has developed and implemented various social assistance and poverty reduction policies, most notably the National Poverty Reduction with Growth Strategy (NPRGS)

aimed at addressing the root cause of poverty and vulnerability through a combination of redistributive policies and programs designed to enhance incomes, job opportunities, and wealth creation. Pillar 4 of the NPRGS focuses specifically on reducing risk, vulnerability, shocks, and deprivation through initiatives such as vocational skills training, micro-credit schemes, micro-enterprise development, and livelihood diversification in the agriculture, creation of Nigeria Investment and Growth Fund meant to finance commercially viable projects in priority sectors that stimulate growth, innovation, and local value addition, creating employment opportunities (Nnamani et al., 2024; Federal Government of Nigeria, 2022; Nairametrics, 2021).

The formulation and implementation of these policies are influenced by a complex interplay of political and economic factors/actors, interest groups; including government agencies, political parties, civil society organizations, international donors, and private sector stakeholders, play critical roles in shaping these policies. Government agencies such as the Ministry of Humanitarian Affairs, Disaster Management, and Social Development are pivotal in designing and implementing social assistance programs, often collaborating with international organizations like the World Bank and UNICEF to secure funding and technical support (Meier et al., 2024; Ministry of Humanitarian Affairs, 2023).

This study aims to explore the political economy of social assistance and poverty reduction policy-making in Nigeria from 2020 to 2024. By examining the socio-economic conditions, policy landscape, and the roles of different actors and interest groups, this research seeks to provide a comprehensive analysis of the factors influencing social assistance policies. The ultimate goal is to inform the design and implementation of more effective strategies to alleviate poverty and

build resilience among Nigeria's most vulnerable populations.

Background of the Study

These stressors have compounded existing issues of poverty, unemployment, and economic instability, necessitating robust social assistance and poverty reduction policies to mitigate their effects (Usman et al., 2024; Itua, et al., 2024; Virk, et al., 2024). The Covid-19 pandemic had a devastating impact on Nigeria's economy, leading to a contraction in GDP and a sharp increase in unemployment and poverty rates (Usman et al., 2024; Nosike, & Ojobor, 2024). According to the World Bank (2021) and IMF, 2020, the pandemic pushed an estimated 7 million Nigerians into poverty in 2020 alone, highlighting the urgent need for effective social assistance programs. This economic downturn was compounded by disruptions in global supply chains and declines in oil prices, which further strained the country's fiscal resources (Virk, et al., 2024; Blakeney, & Alemu, 2024; World Bank, 2021).

Violent conflicts, particularly those involving herders and insurgent groups, have also significantly impacted Nigeria's socio-economic stability (International Crisis Group, 2021). The herders' clashes, driven by competition over land and water resources, have displaced thousands of people and disrupted agricultural activities, a critical sector for livelihoods in rural areas (International Crisis Group, 2021). Similarly, insurgent activities, particularly in the northeastern part of the country, have led to widespread displacement, loss of life, and destruction of property, further deepening poverty and vulnerability among affected populations (UNHCR, 2022).

Climate change presents another layer of challenge, with increasing frequency and intensity of extreme weather events such as floods and droughts affecting agricultural productivity and food security

(Edeme et al., 2024). The Nigerian government has recognized the need for adaptive strategies to build resilience among its citizens, particularly the poor, who are most vulnerable to these climatic shocks (Nigeria Meteorological Agency, 2023).

An Overview of NPRGS

The National Poverty Reduction with Growth Strategy (NPRGS) is a critical initiative targeting Nigeria's impoverished populations characterized by low income, limited access to essential services, and high vulnerability to economic shocks, stands to benefit significantly from a well-implemented NPRGS. According to Vanguard (2021), civil society organizations (CSOs) emphasize the importance of an inclusive policy framework to ensure the NPRGS effectively addresses the needs of the poor masses. They argue that without direct input and involvement from these communities, policies may not fully reflect the complexities and specific challenges faced by Nigeria's poorest citizens.

The federal government's approach to implementing NPRGS involves several strategic measures aimed at fostering economic growth and reducing poverty. As reported by Nairametrics (2021), the strategy includes increasing investments in critical sectors such as agriculture, manufacturing, and infrastructure. Through these, the government aims to create more job opportunities and enhance the income levels of the poor masses. Additionally, social safety nets and financial inclusion initiatives are being strengthened to provide immediate relief and support to vulnerable populations. These efforts are designed to create a sustainable pathway out of poverty for millions of Nigerians.

From the perspective of the private sector, the success of NPRGS depends heavily on public-private partnerships. The private sector involvement can drive innovation,

efficiency, and investment, which are crucial for the strategy's success. Businesses can play a vital role in job creation, skills development, and providing access to markets, all of which are essential for uplifting the poor masses. The private sector's engagement ensures that economic growth is not only robust but also inclusive, reaching those at the bottom of the economic ladder (Business Day, 2021).

Labor unions have also expressed their views on NPRGS, advocating for fair labor practices and equitable economic policies, pushing for policies that ensure decent wages and job security for workers, particularly those in low-income brackets. They argue that the NPRGS should include provisions that protect workers' rights and promote industrial harmony, as these are key to achieving sustainable poverty reduction (Premium Times, 2021). Addressing the concerns of the labor force, the NPRGS can help to create a more stable and equitable economic environment, benefiting the poor masses who rely heavily on these protections. The NPRGS represents a comprehensive approach to addressing poverty in Nigeria, with a focus on inclusive growth and equitable policy frameworks. The involvement of CSOs, the federal government, private sector, and labor unions highlights the multifaceted nature of the strategy, ensuring that it is grounded in the realities of those it aims to help. By fostering collaboration and focusing on the specific needs of the poor masses, the NPRGS has the potential to significantly improve the living conditions and economic prospects of millions of Nigerians (Business Day, 2021).

Civil society organizations (CSOs) and non-governmental organizations (NGOs) also play a vital role in advocating for effective social assistance policies and holding the government accountable. These groups, such as ActionAid Nigeria and the Civil Society Legislative

Advocacy Centre (CISLAC), provide essential services, conduct policy research, and mobilize public opinion to support or oppose specific initiatives (ActionAid Nigeria, 2023; CISLAC, 2023). Furthermore, international donors and development agencies offer financial and technical assistance, helping to bridge funding gaps and ensure the sustainability

of social assistance programs. The involvement of private sector stakeholders, including businesses and financial institutions, is increasingly recognized as crucial for fostering economic opportunities and supporting micro-enterprise development, thereby complementing governmental efforts to reduce poverty and vulnerability

Holistic Exploration

Table 1: The Forecasted Challenges and Proposed Solution of the Four Pillars ofNPRGS

Pillar	Description	Implications for Interest Groups and Actors	Forecasted Challenges	Proposed Solutions from Actor Groups
Macroeconomic Stabilization Policies	Improve the economy's ability to absorb shocks and avoid disruptive adjustments.	Government Agencies: Enhanced ability to manage economic crises. Businesses: Stability attracts investment. Opposition Parties: May critique effectiveness.	Businesses: Uncertainty in policy implementation. Opposition Parties: Lack of trust in government efficiency.	Government Agencies: Clear communication of policies, ensuring transparency and consistency. International Donors: Technical assistance for policy implementation.
Industrialization for Economic Growth and Transformation	Diversify the economy from commodity-dependent to a knowledge-intensive, job-creating economy.	Private Sector: Opportunities for growth and diversification. Labour Unions: Potential for job creation. Civil Society: Monitor equitable growth.	Labour Unions: Risk of exploitative labor practices. Civil Society: Inequality in industrial benefits.	Government Agencies: Enforce labor laws, ensure fair wages. NGOs: Advocacy for inclusive growth policies.
Structural Policies and Institutional Reforms	Promote efficiency, transparency, and accountability in fiscal management and bridge infrastructure gaps.	Government Agencies: Increased efficiency and reduced corruption. Private Sector: Better business environment. NGOs: Advocacy for transparency.	Private Sector: Bureaucratic red tape. NGOs: Insufficient transparency in reforms.	Government Agencies: Streamline processes, reduce bureaucracy. NGOs: Monitor and report on transparency issues.

Redistributive Policies and Programmes	Reduce risk, vulnerability, and deprivation through income enhancement, job creation, and livelihood diversification.	<p>Local Communities: Direct benefits through job creation and skills training. Farmers: Support for agricultural diversification. Academic Institutions: Research and evaluation of program effectiveness.</p>	<p>Local Communities: Delayed benefits, inadequate implementation. Farmers: Insufficient support and resources.</p>	<p>Government Agencies: Improve implementation timelines, allocate adequate resources. Academic Institutions: Provide data and feedback for policy improvement.</p>
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Source: (Premium Times 2021; Nairametrics 2021; Federal Government of Nigeria, 2022; Ministry of Humanitarian Affairs, 2023).

Table 2: Review of the NPRGS as the Social Investment Policy.

Actor/Interest Group	Position/Argument	Rationale	Citation
Government Agencies (e.g., Ministry of Humanitarian Affairs, Disaster Management, and Social Development)	Support for NPRGS and social investment policies.	NPRGS provides a comprehensive framework for addressing poverty and vulnerability, with a focus on risk reduction, vulnerability mitigation, and wealth creation.	(Federal Government of Nigeria, 2022)
Civil Society Organizations (e.g., ActionAid Nigeria, CISLAC)	Conditional support for NPRGS, emphasizing transparency, accountability, and community participation.	Acknowledges the importance of social assistance programs but advocates for greater transparency, accountability, and community participation in policy design and implementation.	(ActionAid Nigeria, 2023; CISLAC, 2023)
Political Parties and Interest Groups	Skepticism or opposition to NPRGS, advocating for broader economic reforms.	Expresses concerns about the feasibility and sustainability of social investment policies, calling for broader economic reforms to stimulate growth and create sustainable livelihood opportunities.	(Okonjo-Iweala, 2021)
International Donors (e.g., World Bank, UNICEF)	Support for NPRGS and provision of technical and financial assistance.	Recognizes the importance of social investment in poverty reduction and offers technical and financial support to enhance the effectiveness of social assistance programs.	(World Bank, 2021)
Private Sector Stakeholders (e.g., businesses, financial institutions)	Mixed views, emphasizing the need for public-private partnerships and entrepreneurship.	Acknowledges the role of social investment in poverty reduction but emphasizes the importance of public-private partnerships and entrepreneurship in sustainable economic development.	(Ongoing research, industry reports)

Source: (Premium Times 2021; Nairametrics 2021; Federal Government of Nigeria, 2022; Ministry of Humanitarian Affairs, 2023).

Various actors and interest groups in Nigeria have been actively engaged in discussions surrounding the effectiveness of national government policies, particularly those related to social investment and poverty reduction strategies. One such policy that has garnered significant attention is the National Poverty Reduction with Growth Strategy (NPRGS), aimed at providing social assistance to Nigerians experiencing poverty exacerbated by the lasting shocks of Covid-19, violent conflicts from herders' clashes/insurgents, and in response to climate change.

Government agencies, including the Ministry of Humanitarian Affairs, Disaster Management, and Social Development, have been staunch proponents of the NPRGS. They argue that the strategy provides a comprehensive framework for addressing the multifaceted challenges faced by vulnerable populations in Nigeria. By focusing on risk reduction, vulnerability mitigation, and wealth creation through various interventions such as vocational training, micro-enterprise development, and agricultural diversification, the NPRGS aims to uplift individuals and communities out of poverty (Federal Government of Nigeria, 2022).

Civil society organizations (CSOs) and non-governmental organizations (NGOs) have also voiced their support for the NPRGS, albeit with some reservations. They acknowledge the importance of social assistance programs in alleviating poverty and addressing the impacts of Covid-19, conflicts, and climate change. However, they emphasize the need for greater transparency, accountability, and community participation in the design and implementation of these programs. CSOs and NGOs argue that effective social investment policies should prioritize the needs and voices of the most marginalized and vulnerable groups, ensuring that they

are not left behind (ActionAid Nigeria, 2023; CISLAC, 2023).

On the other hand, some political parties and interest groups have expressed skepticism or outright opposition to the NPRGS and similar social investment policies. They raise concerns about the feasibility and sustainability of these programs, particularly in light of Nigeria's economic challenges and limited fiscal resources. Critics argue that while social assistance initiatives are important, they should be accompanied by broader economic reforms to stimulate growth and create sustainable livelihood opportunities for all Nigerians. They caution against over-reliance on government handouts, advocating instead for policies that promote entrepreneurship, investment, and job creation (Okonjo-Iweala, 2021).

The positions and arguments of various actors and interest groups regarding national government policies, especially the NPRGS, reflect a diversity of perspectives and priorities. While there is general consensus on the importance of social assistance in addressing poverty and vulnerability exacerbated by Covid-19, conflicts, and climate change, debates persist regarding the most effective strategies and implementation mechanisms. Moving forward, fostering constructive dialogue and collaboration among stakeholders will be crucial in shaping inclusive and sustainable social investment policies in Nigeria.

Table 3: View of the Stakeholders on Social Investment Policies from 2020-2024.

Year	Social Investment Policy	Actors Supporting the Policy	Interest Groups Supporting the Policy	Actors Opposing the Policy	Interest Groups Opposing the Policy	Challenges	Proposed Solutions	Remarks
2020	National Social Investment Program (NSIP)	Government, NGOs, International Organizations	Social welfare advocates, poverty alleviation organizations	None significantly opposed	N/A	Limited funding, logistical hurdles	Increase budget allocation, streamline processes	Initial rollout shows promising results
2021	Expansion of NSIP	Government, Civil Society, Development Partners	Education and health advocates, grassroots organizations	None significantly opposed	N/A	Scaling challenges, resource constraints	Enhanced coordination, public-private partnerships	Continued expansion yields positive outcomes
2021	Integrated Agricultural Support Program	Government, Agricultural Associations, Development Partners	Farmers' cooperatives, rural development organizations	Environmentalists, certain landowners	Conservation groups, certain industries	Land tenure issues, environmental concerns	Sustainable practices, stakeholder consultations	Balancing agricultural development with sustainability
2021	Health Insurance Subsidy Program	Government, Healthcare Providers, NGOs	Health equity advocates, low-income families	Private insurers, fiscal conservatives	Insurance companies, certain political factions	Funding constraints, resistance from private sector	Public-private partnerships, legislative support	Universal healthcare remains a priority
2022	NPRGS Implementation Begins	Government, Economic Advisors, International Agencies	Poverty reduction experts, economic development bodies	Political opposition, vested interests	Certain business groups, elites	Policy complexity, resistance to change	Public awareness campaigns, stakeholder engagement	NPRGS gains traction despite pushback
2022	Rural Women Empowerment Program	Government, Women's Groups, NGOs	Women's empowerment advocates, rural development organizations	Traditional norms, lack of resources	Certain conservative groups	Gender bias, access to finance	Awareness campaigns, capacity-building programs	Empowering rural women is key for development
2023	Enhanced Funding for NSIP	Government, Donors, Advocacy Groups	Poverty alleviation networks, social welfare advocates	None significantly opposed	N/A	Fiscal constraints, administrative bottlenecks	Streamlined processes, technological innovations	Budget increase signals commitment
2024	Introduction of New Social Safety Nets	Government, NGOs, Development Partners	Social justice organizations, poverty alleviation networks	None significantly opposed	N/A	Implementation complexities, resistance to change	Pilot projects, community engagement	New safety nets offer hope for vulnerable
2024	National Youth Investment	Government, Youth Organizations	Youth empowerment	Minimal opposition	N/A	Funding limitations, skepticism	Targeted outreach, mentorship	NYIF crucial for addressing

	Fund (NYIF)	ns, Development Partners	advocates, job creation initiatives			among youth	p programs	youth unemployment
2024	Education Support Grants	Government, Education NGOs, International Agencies	Education advocates, disadvantaged communities	Education reform skeptics	Certain educational institutions	Implementation gaps, bureaucratic hurdles	Capacity-building, monitoring and evaluation	Ensuring equitable access to education

Source: (Researcher findings, 2024)

Table 4: Actors and Interest Groups Arguments on National Government’s Policies on Social/Humanitarian Assistance

Actor/Interest Group	Classification	Position/Argument	For/Against Policies	How the Argument Affects Policy
Ministry of Humanitarian Affairs, Disaster Management, and Social Development	Government Agency	Supports NPRGS; emphasizes comprehensive risk reduction and vulnerability mitigation.	For	Strengthens policy focus on risk reduction, leading to broader implementation of social assistance programs.
ActionAid Nigeria	Civil Society Organization	Supports NPRGS conditionally; calls for transparency, accountability, and community participation.	For	Prompts inclusion of transparency and accountability measures in policy implementation.
Civil Society Legislative Advocacy Centre (CISLAC)	Civil Society Organization	Supports NPRGS conditionally; emphasizes need for community involvement and rigorous oversight.	For	Encourages policy adjustments to include rigorous oversight and community engagement mechanisms.
All Progressives Congress (APC)	Political Party	Supports NPRGS but calls for greater economic reforms alongside social assistance.	For with conditions	Leads to integrated approaches combining social assistance with broader economic reform initiatives.
People's Democratic Party (PDP)	Political Party	Skeptical of NPRGS; argues for more sustainable economic growth strategies.	Against	Encourages debate on sustainability and prompts consideration of long-term economic growth in policy design.
World Bank	International Donor	Supports NPRGS; provides technical and financial assistance for effective implementation.	For	Enhances policy by securing additional funding and technical expertise, ensuring better execution of programs.
UNICEF	International Donor	Supports NPRGS; focuses on child-focused social assistance and health interventions.	For	Leads to more child-focused social assistance policies, integrating health and education support.
Nigerian Economic Summit Group (NESG)	Private Sector Stakeholder	Mixed views; supports public-private partnerships and entrepreneurship to complement NPRGS.	Mixed	Influences policy to incorporate public-private partnerships, fostering entrepreneurship within social programs.

Nigerian Labour Congress (NLC)	Labour Union	Supports NPRGS but demands fair labor practices and worker protections within programs.	For with conditions	Ensures that policies include provisions for fair labor practices and worker protections.
Academic and Research Institutions (e.g., Nigerian Institute of Social and Economic Research)	Research Institution	Advocates for evidence-based policymaking and continuous evaluation of NPRGS.	For	Promotes the integration of evidence-based approaches and continuous policy evaluation and adjustments.
Nigerian Farmers' Association	Interest Group	Supports NPRGS; highlights need for agricultural support and climate resilience.	For	Strengthens focus on agricultural support and climate resilience in social assistance programs.
Social Democratic Party (SDP)	Political Party	Opposes NPRGS; believes it does not adequately address structural economic issues and relies too heavily on handouts.	Against	Leads to criticism and calls for policy overhaul to focus more on structural economic reforms and self-sufficiency.
Nigerian Association of Chambers of Commerce, Industry, Mines and Agriculture (NACCIMA)	Private Sector Stakeholder	Skeptical of NPRGS; argues that it stifles private sector growth with excessive government intervention.	Against	Pushes for reduced government intervention and more market-driven approaches within social assistance policies.
Human Rights Watch (HRW)	International NGO	Conditionally supports NPRGS; emphasizes the need to address human rights issues within social programs.	For with conditions	Advocates for the inclusion of human rights considerations in the design and implementation of social assistance programs.
Institute of Chartered Accountants of Nigeria (ICAN)	Professional Organization	Criticizes NPRGS; questions the financial sustainability and calls for transparent fiscal management.	Against	Prompts calls for improved financial management, transparency, and sustainable funding mechanisms for social programs.
Federation of Informal Workers' Organizations of Nigeria (FIWON)	Labour Union	Supports NPRGS; calls for inclusion of informal workers in social protection schemes.	For	Advocates for policies that include informal workers, leading to broader coverage of social assistance programs

Source: (Researcher findings, 2024)

The National Poverty Reduction with Growth Strategy (NPRGS) has elicited diverse responses from various actors and interest groups in Nigeria, reflecting their distinct positions and arguments. The Federal Government and affiliated bodies are strong proponents of the NPRGS, emphasizing its potential to stabilize the economy, promote industrialization, enhance social protection, macroeconomic stabilization and redistributive policies thereby addressing the multifaceted impacts of COVID-19, violent conflicts, and climate change on poverty (Nairametrics, 2021).

Civil society organizations (CSOs) and non-governmental organizations (NGOs) offer mixed reactions. While some CSOs support the NPRGS for its potential to reduce poverty and vulnerability, others critique it for insufficient inclusivity and transparency. These groups argue that without meaningful community engagement and clear mechanisms for accountability, the NPRGS may fail to reach the most vulnerable populations effectively. They call for more robust participatory frameworks to ensure that the benefits of social assistance programs are equitably distributed (Vanguard, 2021).

The private sector generally supports the NPRGS, particularly the emphasis on industrialization and economic diversification. Business leaders see these initiatives as opportunities for growth and investment, which can drive job creation and innovation. However, they express concerns about regulatory and infrastructural challenges that could hinder the effective implementation of the strategy. They advocate for improved infrastructure and a more business-friendly regulatory environment to maximize the NPRGS's potential (Business Day, 2021).

Labour unions and workers' associations have a nuanced stance on the NPRGS. They welcome the job creation and vocational training components but caution against policies that might undermine labor rights or lead to precarious employment conditions. Unions stress the need for strong labor

protections and fair wages to ensure that economic growth translates into real improvements in workers' living standards. They argue for a balanced approach that safeguards workers' interests while pursuing economic development (Premium Times, 2021).

Opposition parties and some political analysts criticize the NPRGS, viewing it as a politically motivated initiative with limited practical impact. They argue that the strategy may not adequately address the structural causes of poverty and may be used more as a tool for political gain rather than genuine social transformation. These critics call for alternative approaches that focus on systemic reforms and greater decentralization of poverty reduction efforts to local governments, which they believe could be more responsive to community needs (Punch, 2021).

Conclusion

In conclusion, this meta-synthesis elucidates the intricate interplay of socio-economic and political factors that have shaped the formulation and implementation of social assistance policies in Nigeria from 2020 to 2024. The study underscores the profound impact of the Covid-19 pandemic, violent conflicts, and climate change on Nigeria's socio-economic stability, which necessitated robust policy interventions such as the National Poverty Reduction with Growth Strategy (NPRGS). Focusing on Pillar 4 of the NPRGS, the research highlights the importance of vocational training, micro-enterprise development, and agricultural diversification in mitigating risk and vulnerability while fostering wealth creation. By analyzing the roles and influences of various actors and interest groups, including government agencies, political parties, civil society, international donors, and the private sector, the study provides a comprehensive understanding of the political economy dynamics at play. The findings offer valuable insights for designing and implementing more effective social assistance policies, aiming to alleviate poverty and enhance resilience

among Nigeria's vulnerable populations amidst ongoing socio-economic challenges.

Recommendations

Based on the findings of this study on the political economy of social assistance and poverty reduction policy-making in Nigeria, several policy recommendations can be made to enhance the effectiveness of the National Poverty Reduction with Growth Strategy (NPRGS):

- a. Firstly, there should be a focus on strengthening community engagement and participation in the policy-making process. Ensuring that local communities are actively involved in the design and implementation of social assistance programs will help to ensure that these initiatives are tailored to meet their specific needs and circumstances, thereby increasing their effectiveness and acceptance.
- b. Secondly, transparency and accountability mechanisms need to be enhanced within the NPRGS framework. This includes regular monitoring and evaluation of the programs, with clear channels for reporting progress and challenges. Establishing independent oversight bodies that include representatives from civil society organizations and the private sector can help to ensure that resources are utilized efficiently and that the programs achieve their intended outcomes.
- c. Thirdly, there is a need to address infrastructural and regulatory challenges that may hinder the implementation of the NPRGS. The government should prioritize investments in infrastructure development, such as roads, electricity, and internet connectivity, particularly in rural areas. Additionally, simplifying regulatory processes and reducing bureaucratic hurdles will create a more conducive environment for private sector participation and investment, which are critical for the success of industrialization and economic diversification efforts.
- d. Fourthly, labor protections must be strengthened to ensure that job creation efforts under the NPRGS do not lead to exploitative practices. This involves enforcing existing labor laws, ensuring fair wages, and providing adequate social protection for workers. The government should work closely with labor unions to develop policies that protect workers' rights while promoting economic growth and job creation.
- e. Lastly, there should be a focus on decentralizing poverty reduction efforts to empower local governments. Decentralization will allow for more context-specific approaches to poverty alleviation, as local governments are often better positioned to understand and respond to the unique challenges faced by their communities. Providing local governments with the necessary resources and capacity-building support will enhance their ability to implement effective poverty reduction programs.

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