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Artificial Intelligence and Performance of Multinational Companies in Rivers State, Nigeria

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ABSTRACT: *This study reviewed the nexus between Artificial Intelligence and the performance of multinational companies in Rivers State, Nigeria. The problem of the research was based on the inability of multinational firms to adapt artificial intelligence in the Nigeria business environment characterised by deficit in infrastructure, regulatory complexities, and emergence of new digital ecosystem necessarily required to improve their performance. As a consequence, four research hypotheses was formulated and tested. Machine learning automation and robotic process automation were adopted as the dimensions of Artificial Intelligence, while customer satisfaction and profitability were utilised as the measures of performance. The study theoretically reviewed Technology Acceptance Model (TAM) and Resource-Based View (RBV) theory. The population of the study consisted of 60 staff of 10 multinational companies in Rivers State, Nigeria. Utilising simple random sampling technique, 60 staff of multinational companies in in Port Harcourt was selected as the sample for this study. The data analysis techniques utilised comprised of frequencies, percentages, weighted mean statistics and Pearson Product Moment Nexus (PPMC). The study found that machine learning automation and robotic process automation have positive and substantial nexus with customer satisfaction and profitability of multinational companies in Rivers State,Nigeria. From the findings, the study concluded that AI plays a substantial role in improving the performance of multinational companies in Rivers State, Nigeria. The study therefore, recommended that multinational companies should prioritize the development and deployment of AI tools tailored to Nigeria's unique market dynamics, infrastructure constraints, and consumer behavior.*

Keywords: Artificial Intelligence, Performance, Machine Learning Automation, Robotic Process Automation, Customer Satisfaction, Profitability

1.0 INTRODUCTION

The world has transformed into a global village due to advanced technology and its application across various fields of human endeavor (Tanha, Siddique, Sumon, Nurulhoque, Sazin, & Hossain, 2023). From the comfort of our homes, we now have the ability to communicate with family, friends, business associates, and colleagues, all thanks to information and communication technology (ICT). A substantial branch of ICT, known as Artificial Intelligence (AI), has become essential in the corporate world, governance, socio-economic sectors, and even households (Chaudhary, 2022). In today's technologically advanced landscape, functioning effectively and efficiently without AI is nearly impossible. Sehirli and Alesmaeil (2022) suggested that the primary purpose of AI is to assist humans in specific functions and activities, as it has been designed to think and learn in a manner similar to that of humans. Organizations, particularly multinational companies, are continually striving to reduce liabilities and enhance asset portfolios. To achieve systematic compliance management and operations, a swift and effective strategy is necessary (Udodiugwu, Eneremadu, Obiakor, Okeke, & Njoku, 2023). Artificial Intelligence (AI) can be either machines or software, and its use depends on human needs. The multinational companies, like other industries, uses AI in both forms to support daily activities (Ramana, Katta, Rao, Rao & Raja, 2022). Without relying on paper, AI helps companies manage inventories, conduct risk assessments, and balance cash and cheque transactions for better performance (Eneremadu, Chikezie & Udodiugwu, 2023). Multinational corporations have experienced a transformative force in the form of AI, which has allowed them to improve operational efficiency, foster innovation, and sustain a competitive advantage in the global marketplace. Multinational corporations can optimise supply chains, personalise consumer experiences, and make data-driven decisions at scale by utilising Artificial Intelligence technologies, comprising machine learning, natural language processing, and predictive analytics. In congruent with Omemgbeoji and Ofor (2023), multinational firms are well-positioned for long-term success in the digital economy because they have integrated AI into their business operations, which has led to cost reduction and new income streams. AI offers several substantial benefits to organisations, comprising improved operational efficiency and cost savings. Artificial intelligence (AI) driven automation improves data input, inventory management, and customer support, among other repetitive chores, freeing up human resources for higher-value operations. Companies like Amazon and Alibaba leverage AI-powered warehouse automation to cut down on staffing costs, increase efficiency, and speed up order fulfilment (Audu & Aziwe, 2025). In the same vein, Elegunde and Osagie (2020) asserted that AI is capable of revolutionising consumer engagement and personalisation, thereby allowing organisations to provide customised experiences on a large scale. Artificial Intelligence systems provide personalised recommendations by analysing customer behaviour, preferences, and purchasing patterns through advanced data analytics. Another critical advantage of AI is its ability to improve decision-making through predictive analytics. Organizations operate in complex, dynamic environments where timely insights are crucial for strategic planning. Artificial Intelligence algorithms process vast amounts of data from multiple sources—i.e. market trends, social media, and economic indicators to forecast demand, identify risks, and uncover new opportunities (Ifekanandu, Ezirim & Kingsley, 2024).

Statement of the Problem

Opportunities and problems arise for international corporations doing business in Nigeria when they integrate AI into their operations. There has been little research on how AI affects multinational corporations in Nigeria, despite evidence that it boosts productivity, decision-making, and competitive advantage in industrialised nations. The effectiveness of the adoption and scaling of Artificial Intelligence to enhance performance metrics i.e. profitability, operational efficiency, and market share is a topic of concern in Nigeria's distinctive business environment, which is defined by infrastructural deficits, regulatory complexities, and a nascent digital ecosystem. The discrepancy in the level of preparedness for AI between Nigerian local firms and multinational corporations is a substantial issue. While multinational companies often have access to advanced technologies and global expertise, they face unique barriers i.e. unreliable power supply, limited internet penetration, and a shortage of skilled Artificial Intelligence professionals. Additionally, the high cost of AI implementation and maintenance may deter multinational companies from fully leveraging these technologies, particularly in sectors like manufacturing and agriculture where profit margins are already thin. These challenges underscore the necessity for a detailed comprehension of how AI can be customised to align with Nigeria's unique circumstances, thereby providing measurable performance advantages for multinational corporations. This study aims to investigate the nexus between AI and the performance of multinational companies in Nigeria.

Purpose of the Study

The main purpose of this study was to examine the nexus between Artificial Intelligence and performance of multinational companies in Rivers State, Nigeria. Other specific objectives of the study are to:

1. Examine the nexus between machine learning automation and customer satisfaction of multinational companies in Rivers State, Nigeria.
2. Evaluate the nexus between machine learning automation and profitability of multinational companies in Rivers State, Nigeria.
3. Ascertain the nexus between robotic process automation and customer satisfaction of multinational companies in Rivers State, Nigeria.
4. Determine the nexus between robotic process automation and profitability of multinational companies in Rivers State, Nigeria.

Hypotheses Testing

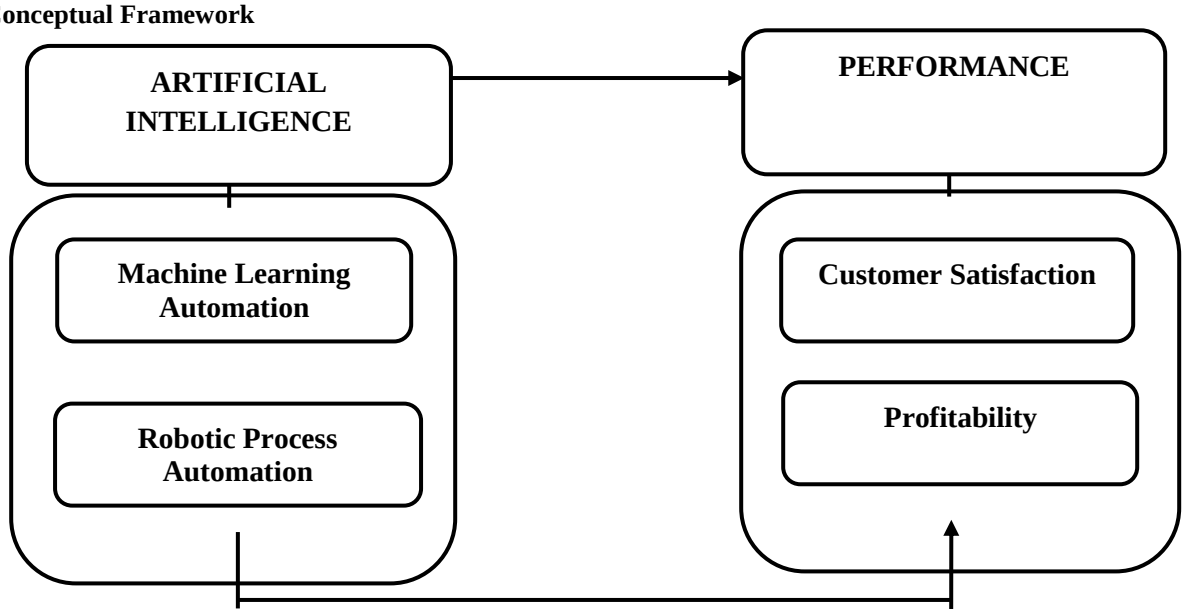
H_{01}: There is no substantial nexus between machine learning automation and customer satisfaction of multinational companies in Rivers, Nigeria.

H_{02}: There is no substantial nexus between machine learning automation and profitability of multinational companies in Rivers State, Nigeria.

H_{03}: There is no substantial nexus between robotic process automation and customer satisfaction of multinational companies in Rivers State, Nigeria.

H_{04}: There is no substantial nexus between robotic process automation and profitability of multinational companies in Rivers State, Nigeria.

Conceptual Framework



Source: Researcher's Conceptualization (2025) with the Dimensions of Artificial Intelligence Adapted from Omemgbeoji and Ofor (2023) and the Measures of Performance Adapted from Durga (2017)

Figure 1: Conceptual Framework of Artificial Intelligent and Performance

2.0 REVIEW OF RELATED LITERATURE

Conceptual Review

Artificial Intelligence

Different academics from various disciplines have provided their own unique takes on what AI is and how it works. Artificial intelligence (AI) was first postulated by McCarthy at the 1956 Dartmouth Conference, which initiated the first wave of serious AI research (McCarthy, Minsky, Rochester & Shannon, 2006). The ability of computers or other artificial entities to perform tasks such as problem-solving, communication, engagement, and reasoning in a manner similar to biological humans was characterised by Zúñiga, Goyanes, and Durotoye (2023) in the area of media and communication studies as Artificial Intelligence. The study and development of computer systems that can imitate human intellect and perform out particular activities is known as artificial intellect (AI), in congruent with Sundar (2020). AI is a subfield of computer science and information technology. The field of computer science known as "artificial intelligence" (AI) aims to build machines that can mimic human intellect in order to complete complex jobs. The list goes on and on, comprising things like making decisions, solving problems, comprehending language, seeing patterns, and learning from past mistakes (Badghish & Soomro, 2024).

Dimensions of Artificial Intelligence

This research utilises two AI dimensions: robotic process automation and machine learning automation. Below, we will go over these dimensions:

a. Machine Learning Automation

Among the many applications of AI-driven technologies, machine learning automation stands out. Automated machine learning enables cognitive tasks to improve with experience by using algorithms to learn from data and make judgements or predictions, such as e-commerce tailored recommendations or banking fraud detection. With the utilisation of self-improving algorithms, machine learning automation may automate decision-making by learning patterns from data. This reduces the need for human involvement in a variety of activities, comprising real-time anomaly detection and predictive analytics (Alpaydin, 2020). In congruent with Goodfellow, Bengio, and Courville (2022), machine learning automation is a branch of AI that allows systems to optimise their performance on particular tasks by repeatedly exposing themselves to data. This enables automation in intricate domains i.e. computer vision and natural language processing. Machine learning automation is defined by Provost and Fawcett (2023) as the process of automating data-driven activities, comprising dynamic pricing or fraud scoring, by integrating machine learning models into operational processes and constantly improving their accuracy.

b. Robotic Process Automation (RPA)

In robotic process automation, software "bots" as per rules execute organised, repeated processes (such data input or invoice processing) without the ability to learn, with the goal of improving efficiency and reducing errors in regular workflows. For repetitive, high-volume manual tasks with little room for error, robotic process automation is the way to go. In their definition of robotic process automation, Willcocks, Lacity, and Craig (2021) state that bots are software programs that mimic human interactions with digital systems. This allows them to automate rule-based, repetitive business processes, i.e. high-volume transactional tasks in finance, HR, and customer service. Lightweight automation technology that performs specified workflows across applications without needing extensive system integration, robotic process automation focusses on the user interface layer to reproduce human procedures with higher speed and accuracy (Bichler and Heinzl, 2022). Robotic process automation was defined by Ivančić, Suša and Bosilj (2023) as a technology that allows organisations to automate routine tasks and achieve quick efficiency gains. It bridges the gap between advanced AI and legacy systems, allowing organisations to prepare for intelligent automation while automating routine tasks.

Performance

It is the intention of any organisation to reach a set of predetermined goals. Utilising resources i.e. people, machinery, materials, and money may help accomplish these goals. If you want to advance in your career and be successful in the job market, you need to perform well. High performers, with a few notable exceptions, tend to advance more quickly in their careers and have more chances overall than poor performers. This highlights the importance of workers seeing performance as very substantial (Sabine & Michael, 2001; Van Scotter, Motowidlo & Cross, 2000). Durga defined performance in 2017 as doing something or reaching an objective. He elaborates by saying that performance on the job refers to how well a person meets the needs of their position and completes their tasks to produce desired outcomes. An organization's performance can be defined as its efficacy and efficiency as measured through the processes that it employs on a regular basis, i.e. setting goals, tracking progress, and making adjustments as needed (Ratna, Khanna, Jogishwar, Khattar & Agarwal, 2014).

Measures of Performance

The study's success metrics are as per two key indicators: customer happiness and profitability. These measures are discussed below:

a. Customer Satisfaction

Satisfaction is the sum of all the subjective perceptions, evaluations, and emotional reactions that a client has when utilising a service or product. Understanding the many forms of contentment is important. The degree to which a person's subjective experience with a product meets or exceeds their expectations is known as customer satisfaction (Kotler, 2016). When a consumer is happy with a service or product, we call it customer satisfaction. It is an element of doing an evaluation of a service or product before utilising it. Additionally, it is the end product of an evaluation process that compares and contrasts expectations before purchase with views of performance during and after consumption. Customers are happy when the advantages they get from a company's products and services match their expectations. The consumer feels unhappy if the quality of the product or service falls short of their expectations. To ensure customer happiness, businesses must provide products and services that really suit the needs of their target market. After all, who wants to spend money on things that do not contribute to their day-to-day survival? (Kavusi, 2018).

b. Profitability

For a firm or business to stay in operation, the idea of profit is crucial. entire revenue less entire costs equals profits, in congruent with economic theory. Profit, or the excess of revenue after subtracting expenditures and costs, is the result of sales and is equal to the net amount of fixed and variable costs. Since it offers a general clue of the capacity of enterprises to upsurge their revenue level, profitability is the most substantial and dependable indication of cooperative development (Ahmed, Naveed & Usman, 2011). To be successful, a business must be able to turn a profit with its existing assets. Most businesses want to maximise earnings as much as possible (Niresh & Velnampy, 2014). If a business, organisation, or corporation can turn a profit from every single one of its operations, then we may say that it is profitable (Muya & Gathogo, 2016). The return on investment (ROI) for the entrepreneur is typically the profit. Actually, the primary goal of every entrepreneur is to make a profit. One way to measure a company's success is by looking at its profit (Ogbadu, 2009).

Theoretical Framework

Technology Acceptance Model (TAM) and Resource-Based View (RBV) are the theoretical foundations of this research. What follows is a discussion of these theories:

Technology Acceptance Model (TAM)

In 1986, as a component of his PhD dissertation at MIT, Fred Davis created the Technology Acceptance Model (TAM). How can people eventually embrace and make utilisation of new technology? That was Davis's goal. By isolating the elements that impact a person's choice to use a technological tool, his methodology aims to forecast the adoption of IT in organisational contexts. The purpose of this model is to predict how users will react to and make utilisation of IT in a business context. Perceptions, rather than actual use, are the focus of Technology Acceptance Theory. In congruent with the model, the people who will be utilising it and the circumstances around their decision-making are the most important considerations (Davis, 1989). Perceived utility (PU) and perceived ease of use (PEOU) are the two main components of Technology Acceptance Theory, in congruent with Legris, Ingham, and Collerette (2003). A technology's perceived utility is the amount to which its user thinks it will improve their performance, while a technology's perceived ease of use is the degree to which its user thinks it will need little to no effort on their behalf. The user's perceptions, in congruent with Davis, shape their attitudes towards the technology, which in turn affects their intentions to utilise it, and lastly, their frequency of usage (Bagozzi, 2007).

Relevance of the Technology Acceptance Model to the Study

By zeroing in on two critical factors—perceived utility (PU) and perceived ease of use (PEOU)—the Technology Acceptance Model (TAM) offers a solid framework for comprehending the effects of AI on the performance of multinational corporations. The theory of technology acceptance states that multinational corporations can expect an uptick in organisational performance when their workers and decision-makers view AI as both practical (improving decision-making, cost-efficiency, or productivity) and accessible (with user-friendly interfaces and minimal training requirements). When AI-driven solutions, i.e. chatbots or predictive analytics, can clearly simplify processes (PU) while requiring little technical knowledge (PEOU), multinational firms are quick to embrace them. This is because these tools lead to quantifiable improvements in efficiency, innovation, and competitive advantage.

Resource-Based View Theory

Penrose first proposed the Resource-Based View theory in 1959, and Wernerfelt expanded on it in 1984. View As per Resources (RBV) Internal resources and competencies are the key factors that determine an organization's competitive advantage and performance, in congruent with theory, a framework for strategic management. The idea reorients the emphasis of industry frameworks like Porter's Five Forces towards an organization's internal strengths and distinctive assets, rather than the external dynamics of the industry. Businesses, in congruent with this idea, may maintain a competitive edge over the long term by capitalising on VRIN assets, which stand for valuable, rare, inimitable, and non-substitutable. In congruent with the principle, a company may have an edge over its rivals by making good utilisation of its own resources, comprising its personnel. In congruent with Wobodo, Asawo, and Asawo (2018), the fundamental drivers of an organization's performance result are the resources that are either already accessible to it or that it has acquired. Furthermore, it states that VRIN resources—resources that are precious, rare, inimitable, and non-substitutable—are necessary for a firm to maintain a competitive edge over its rivals. Management of organisations that want to be operationally viable in the face of competition must optimise its infrastructure, in congruent with this theory's assumptions. This is especially true in today's digital economy. For the company's operational performance, this is vital since it gives them a distinct edge over their competitors.

Relevance of Resource-Based View (RBV) Theory to the Study

By classifying AI as a VRIN resource—one that is valuable, rare, inimitable, and non-substitutable—the Resource-Based View (RBV) explains how AI impacts the performance of multinational organisations. When AI systems are precious, scarce, inimitable, and non-substitutable, in congruent with the Resource-Based View, they increase the performance of multinational organisations. These characteristics indicate that the AI system is improving decision-making, efficiency, or customer experiences, and that it is not universally adopted across competitors. Additionally, the system should not have any equivalent alternatives. To optimise supply chains and personalise marketing, international firms like Alibaba and Amazon use AI-powered recommendation engines and logistics as precious, scarce, inimitable, and non-substitutable resources. This helps them create persistent performance advantages.

Empirical Review

A study conducted by Ndubuisi-Okolo, Onyinye, and Iheanyi (2025) looked at how SMEs in South-East Nigeria were affected by AI in terms of sustainability and their operational efficiency. We opted for a descriptive study strategy. A total of 2,546,012 SME that were either registered or certified by the Cooperate Affairs Commission (CAC) made up the study's population. After plugging the numbers into Krejcie and Morgan's 1970 algorithm for determining sample size, we got 379. The primary tool for gathering information was a structured questionnaire. We verified and evaluated the instrument's dependability. It was determined to have a dependable dependability co-efficient of 0.86. We utilised basic regression analysis as an inferential statistic to analyse the data. Machine learning substantially improved operational competence for SMEs in South-East Nigeria, in congruent with the upshots.

Audu and Aziwe (2025) investigated how artificial intelligence affected the productivity of north-central Nigerian manufacturing companies, with the utilisation of the Reward System to moderate the effect. Researchers strove to find ways in which manufacturing company managers have utilised AI to boost efficiency and save costs, but they almost failed because they ignored the human aspect that AI technology relies on to do its job. Therefore, the research comprised a moderator-reward system to account for this missing piece. This research provided empirical evidence that the addition of the moderator substantially enhanced the performance of the target manufacturing firms. To do this, we run tests both before and after comprising the moderator, utilising AI technology.

Akinboyo (2025) looked at how commercial banks in Nigeria fared after utilising AI systems. In order to explore the link between the measures of company performance—operational efficiency and customer service—and the factors i.e. the amount of AI implementation, frequency of adoption, kind of technology, and integration strategy, research utilised a quantitative method. In Ibadan, Nigeria, 200 stakeholders from four big banks filled out a standardised questionnaire. Improved operational efficiency leads to improved customer service, in congruent with the upshots, which in turn leads to greater AI adoption. Conversely, there may be issues with the expensive initial investment cost of capital, a lack of competence in managing it, data insecurity about AI, and acceptance difficulties with resisting the normal system. That is why it is crucial for banks in Nigeria to strategically invest in infrastructure and also in their personnel via training and a strong focus on data security. Only then can we ensure a smooth introduction and operation of AI, reaping all of its advantages.

Obiya (2024) investigated how AI is propelling the development of new businesses in Nigeria. The researchers utilised a mixed-method strategy, integrating quantitative survey data with qualitative case studies. Fifty firms working in fields as diverse as agritech, finance, and healthtech contributed data that was analysed. Conversations with research participants provided the numerical data. Although previously published works served as secondary sources of information. In congruent with the upshots, firms who use AI see a 25% increase in revenue growth, better operational efficiency, and more consumer engagement than startups that do not use AI. However, infrastructural and budgetary restrictions have kept AI adoption confined in a few areas, with finance being at the forefront of AI integration. In spite of these obstacles, AI clearly has the ability to boost startup activity in Nigeria's economy.

To find out how AI investments affected the efficiency of Nigerian deposit money banks (DMBs), Adejola (2024) looked into the matter. Utilising information gathered from fourteen publicly traded DMBs spanning eleven years (2012–2022), the research appraised how investments in artificial intelligence (AI), as measured by software expenditures and software book value, affected return on equity (ROE). In congruent with the upshots, software book value substantially lowers ROE, whereas software expenditures have no influence at all. But when added together, AI investments have a major impact on DMB performance. The research highlighted the significance of AI in improving the productivity and earnings of Nigerian banks.

The essential AI skills for public sector office managers to execute their responsibilities effectively were appraised by Ojo (2024). Everyone in the Oke Mosan area of Ogun State who serves as a secretary for the ministries of education, agriculture, finance, commerce, and communal growth came upon this letter. The research enrolled fifty office managers chosen using a systematic selection process. In order to evaluate our hypothesis, we utilised the t-test. Machine learning, critical thinking, communication, solving problems, analytical judgement, software development, innovation, computers, data analysis, specialist expertise, and data analysis are some of the artificial intelligence (AI) abilities that researchers feel are necessary for managers of public sector offices. The link between company managers' AI abilities and their work performance was positive and statistically substantial.

The purpose of the study by Udodiugwu, Eneremadu, Onunkwo, Onyia, and Obananya (2024) was to investigate how certain Nigerian commercial banks fared after utilising AI strategies. The research utilised a five-point Likert-scale questionnaire to gauge the opinions of 128 Awka-based bank workers from Access, Fidelity, Guarantee Trust, and First Bank of Nigeria. The Cronbach Alpha dependability score was 0.753. We utilised linear regression in SPSS 23 to analyse the data. While robust cyber security measures boost financial performance, the research discovered that integrating AI into customer service increases banks' non-financial elements. The study has shown that banks may greatly benefit from incorporating AI technologies into their operations to improve overall performance. It has also shown how important it is for bank clients to use these AI technologies to have better interactions and service.

The effect of AI on the operational efficiency of south-east Nigerian companies producing table water was the subject of research by Ali, Izedonmen, Ohurogu, and Raphael (2024). Utilising a combination of judgement sampling and basic random sampling techniques, the study surveyed 200 participants utilising a questionnaire. The outcome shown that AI has a detrimental effect on the quality of industrial enterprises. Additionally, 65.3% of partakers do not think AI methods work for Nigerian manufacturing companies, in congruent with the upshots. The utilisation of artificial intelligence (AI) in the production of drinking water has far-reaching consequences for the southeast region of Nigeria, in congruent with a chi-square test.

Among Nigerian manufacturing organisations, Omemgbeoji and Ofor (2023) looked at how AI in accounting affected corporate performance. This research made utilisation of a descriptive survey methodology. Employees of Nigerian industrial firms were the focus of the research. Partakers filled out a standardised questionnaire that served as the study's primary data source. To help summarise the study topics and provide a general idea of the partakers' viewpoints, we employed descriptive analytic techniques, i.e. frequency distribution. To put the theories to the test, we utilised Spearman Ranked Order nexus. In congruent with the upshots, there exist a favourable connexion between Robotic Process Automation and the firm efficiency of Nigerian manufacturing enterprises, and Machine Learning Automation has the same impact.

Ifekanandu, Ezirim, and Kingsley (2024) looked at the marketing success and utilisation of AI by publicly traded Nigerian manufacturing companies. The research comprised 426 managers from 71 listed Nigerian manufacturing companies. Managers from the companies' branches, operations, production, marketing, and sales departments make up the group. The study's sample size was 206 managers. We utilised statistical methods to examine the data and put our theories to the test with the help of the Spearman Rank Order Nexus Co-efficient (rho). The upshots showed that there exist a strong nexus between the utilisation of AI in marketing and the increase in sales for listed Nigerian manufacturing companies. Market share growth of listed manufacturing businesses in Nigeria is strongly and substantially correlated with the deployment of AI technology in marketing activities, in congruent with the research.

3.0 METHODOLOGY

Research Design This study utilised a cross sectional and descriptive research design. In the cross sectional design, data was generated through the administration of copies of questionnaire given to different categories of respondents, while the descriptive design entailed gathering information from diverse groups or individuals, mainly through personal interviews or questionnaire, to yield a thorough understanding of the demographic features.

Population for the study the study's population consisted of 60 respondents from 10 multinational corporations operating in Rivers State, Nigeria.

Sampling Technique the study involved the use of simple random sampling technique which ensured that every member of the sampling population was selected.
Sample size a sample size of sixty-five (60) employees from 10 multinational companies in Port Harcourt, was selected using a simple random sampling method.
Data collection method a structured questionnaire served as the instrument for the collection of primary data which contained statements and closed-ended questions.
Scale of measurement the items in the questionnaire was organised and evaluated using a modified four-point Likert scale for: Strongly Agree (SA) = 4, Agree (A) = 3, Disagree (D) = 2, Strongly Disagree (SD) = 1.
Validity and Reliability of research instrument the instrument was validated by subjecting it to content and face validity, while reliability was through confirmatory test of internal consistency using Crombach Alpha with values ranging from 0.00 and 1.0
Data analysis methods the data analysis techniques utilised comprised of frequencies, percentages, weighted mean statistics and Pearson Product Moment Nexus (PPMC).

4.0 DATA ANALYSIS AND DISCUSSION OF FINDINGS

Analysis of Demographic Data

This section comprises a detailed examination of the data. Statistical tools like tables, frequencies, and basic percentages are frequently employed to examine the demographic data of those who participated. This will comprise the following factors: age, gender, marital status, educational background, and years of experience:

Table 1: Demographic Data of the Partakers

Observation	Frequency (60)	Percentage (%)
Age		
20-29 years	9	10.0
30-39 years	25	41.7
40-49 years	20	33.3
50 years and Above	6	10.0
Total	**60**	**100.0**
Gender		
Male	39	65.0
Female	21	35.0
Total	**60**	**100.0**
Marital Status		
Single	20	33.3
Married	35	58.3
Divorced	2	3.3
Widowed/Widower	3	5.0
Total	**60**	**100.0**
Educational Qualification		
OND/HND	12	20.0
Bachelor's Degree	39	63.3
Masters' Degree	7	11.7
Doctorate Degree	3	5.0
Total	**60**	**100.0**
Working Experience		
1 - 6 years	6	10.0
7 - 12 years	24	40.0
13 - 18 years	16	26.7
19 years and above	14	23.3
Total	**60**	**100.0**

Source: Field Survey by Researcher, 2025.

Table 1 presents the age distribution of the partakers, revealing that the predominant group is aged between 30 and 39, while the remaining partakers are categorised within the 40-49 age range. The data presented in Table 1 reveals that the majority of partakers are male. Table 1 demonstrates that the spouses of the partakers represented the largest portion of the sample. The data presented in Table 1 reveals that the predominant educational attainment among partakers is a Bachelor's degree. The data presented in Table 1 reveals that the predominant range of partakers' years of experience falls between seven and twelve years.

Univariate Analysis

The analysis is as per the 5-point Likert Scale as follow:

Table 2: Machine Learning Automation Analysis of Questionnaire Items

No	Questionnaire Items	SA (%)	A (%)	U (%)	D (%)	SD (%)	Mean	Decision
1.	Our organization implements machine learning-based automation in its operational processes (e.g., production, logistics, customer service).	20 (33.3%)	28 (46.7%)	2 (3.3%)	5 (8.3%)	5 (8.3%)	4.01	**Accepted**
2.	Machine learning automation is important to the future competitiveness of our organization.	25 (41.7%)	20 (33.3%)	2 (3.3%)	5 (8.3%)	8 (13.3%)	3.71	**Accepted**
3.	Machine learning automation affects the overall productivity of our organization.	20 (33.3%)	24 (40.0%)	5 (8.3%)	7 (11.7%)	4 (6.7%)	3.88	**Accepted**

Source: Field Survey by Researcher, 2025.

Table 2 illustrates the univariate analysis of Automation in Machine Learning as a Dimension of AI. The table's findings indicated that a higher percentage of partakers concurred or strongly agreed with each of the questionnaire items regarding machine learning automation. In addition, the table's upshots indicated that the mean score value of each questionnaire item on machine learning automation exceeded the weighted mean value of 3.0. This demonstrates that all of the questionnaire items regarding machine learning automation are positive

Table 3: Robotic Process Automation Analysis of Questionnaire Items

No.	Questionnaire Items	SA (%)	A (%)	U (%)	D (%)	SD (%)	Mean	Decision
4.	Our company adopts Robotic Process Automation (RPA) to handle repetitive business tasks (e.g., data entry, invoice processing, payroll).	22 (36.7%)	25 (41.7%)	2 (3.3%)	4 (6.7%)	7 (11.7%)	3.74	**Accepted**
5.	Process Automation (RPA) has impact on the operational efficiency of our company.	23 (38.3)	24 (40.0)	4 (6.7%)	4 (6.7%)	5 (8.3%)	3.91	**Accepted**
6.	Our organization perceive Robotic Process Automation important in future business process transformation.	23 (38.3%)	23 (38.3%)	4 (6.7%)	7 (11.7%)	3 (5.0%)	4.10	**Accepted**

Source: Field Survey by Researcher, 2025.

Table 3 illustrates the univariate analysis of robotic process automation as a dimension of AI. The table's findings indicated that a higher percentage of partakers concurred or strongly agreed with each of the questionnaire items regarding robotic process automation. In addition, the table's upshots indicated that the mean score value of each questionnaire item on robotic process automation exceeded the weighted mean value of 3.0. This demonstrates that all of the questionnaire items regarding robotic process automation are accurate.

Table 4: Customer Satisfaction Analysis of Questionnaire Items

No.	Questionnaire Items	SA (%)	A (%)	U (%)	D (%)	SD (%)	Mean	Decision

7.	Customers are satisfied with the services our organization render.	21 (35.0%)	28 (46.7%)	2 (3.3%)	6 (10.0%)	3 (5.0%)	3.89	**Accepted**
8.	Our organization consistently meets the expectations of our customers.	27 (45.0%)	21 (35.0%)	4 (6.7%)	8 (13.3%)	4 (6.7%)	3.98	**Accepted**
9.	Our customers mostly recommend our company to others as per their experience	23 (38.3%)	26 (43.3%)	3 (5.0%)	4 (6.7%)	4 (6.7%)	4.00	**Accepted**

Source: Field Survey by Researcher, 2025.

Customer satisfaction as a performance indicator is shown in Table 4 for the univariate study. Each item in the survey about customer satisfaction had a larger proportion of partakers who agreed or strongly agreed, as shown in the table. In addition, all of the customer satisfaction survey items had mean score values higher than the weighted mean value of 3.0, as shown in the table. This indicates that all of the questionnaire items that pertain to customer satisfaction were accepted to be correct.

Table 5: Profitability Analysis of Questionnaire Items

No.	Questionnaire Items	SA (%)	A (%)	U (%)	D (%)	SD (%)	Mean	Decision
10.	Our company makes profit from all the business activities embarked on.	20 (33.3%)	30 (50.0%)	3 (5.0%)	4 (6.7%)	3 (5.0%)	4.00	**Accepted**
11.	Our company is always left with a lot of money after paying all the expenses of an endeavour.	28 (46.7%)	22 (36.7%)	3 (5.0%)	3 (5.0%)	3 (5.0%)	4.24	**Accepted**
12.	Our company's profitability of a venture after accounting for all costs and taxes is appreciable.	17 (16.7%)	31 (51.7%)	3 (5.0%)	5 (8.3%)	4 (6.7%)	3.63	**Accepted**

Source: Field Survey by Researcher, 2025.

Profitability as a performance measure is shown in Table 5, which shows the upshots of the univariate study. Upshots from the table showed that, when asked about profitability, more people agreed or strongly agreed with each statement. Furthermore, the table's findings indicated that the mean score value of each questionnaire item on profitability exceeded the weighted mean value of 3.0. This demonstrates that all of the questionnaire items that pertain to profitability were correct

Bivariate Analysis (Hypotheses Testing)

The hypotheses formulated in this study are tested utilising Pearson Product Moment correlation coefficient (PPMCC).

Decision Rule: Reject the null hypotheses at 5% level of significance if the *probability value* is below *alpha value* of 0.05. Conversely, the null hypotheses should be retained at a 5% level of significance if the probability value exceeds the alpha value of 0.05.

Hypothesis 1

H_{01}: There is no substantial nexus between machine learning automation and customer satisfaction of multinational companies in Rivers State, Nigeria.

Table 6: PPMCC of Machine Learning Automation and Customer Satisfaction

		Machine Learning Automation	Customer Satisfaction
Machine Learning Automation	Pearson Nexus	1.000	0.803**
	Sig.(2-tailed)	.	0.000
	N	60	60
Customer Satisfaction	Pearson Nexus	0.803**	1.000

	Sig.(2-tailed)	0.000	.
	N	60	60

**. Statistically substantial nexus exists at the 0.01 level (2-tailed).

Source: Field Survey by Researcher, 2025.

Decision on Hypothesis 1: The PPMC coefficient is 0.803, and the probability value is 0.000, as indicated in Table 6. This finding suggests that multinational companies in Rivers State, Nigeria have a positive nexus with customer satisfaction and machine learning automation. Furthermore, considering that the probability value (0.000) is below the alpha value (0.05), the null hypothesis (H01) is rejected and we conclude that there exist a substantial nexus between customer satisfaction and machine learning automation of multinational companies in Rivers State, Nigeria.

Hypothesis 2

H_{02}: There is no substantial nexus between machine learning automation and profitability of multinational companies in Nigeria.

Table 7: PPMC of Machine Learning Automation and Profitability

		Machine Learning Automation	Profitability
Machine Learning Automation	Pearson Nexus	1.000	0.817**
	Sig.(2-tailed)	.	0.000
	N	60	60
Profitability	Pearson Nexus	0.817**	1.000
	Sig.(2-tailed)	0.000	.
	N	60	60

**. Statistically substantial nexus exists at the 0.01 level (2-tailed).

Source: Field Survey by Researcher, 2025.

Decision on Hypothesis 2: The PPMC co-efficient is 0.817, and the probability value is 0.000, as indicated in Table 7. This finding suggests that multinational companies in Rivers State,Nigeria have a positive nexus with profitability when it comes to machine learning automation. Furthermore, with a probability-value (0.000) lower than the alpha value (0.05), the null hypothesis two (H02) is rejected and thus we conclude that machine learning automation substantially correlates with the profitability of multinational companies in Rivers State, Nigerian..

Hypothesis 3

H_{03}: There is no substantial nexus between robotic process automation and customer satisfaction of multinational companies in Nigeria.

Table 8: PPMC of Robotic Process Automation and Customer Satisfaction

		Robotic Process Automation	Customer Satisfaction
Robotic Process Automation	Pearson Nexus	1.000	0.761**
	Sig.(2-tailed)	.	0.000
	N	60	60
Customer Satisfaction	Pearson Nexus	0.761**	1.000
	Sig.(2-tailed)	0.000	.
	N	60	60

**. Statistically substantial nexus exists at the 0.01 level (2-tailed).

Source: Field Survey by Researcher, 2025.

Decision on Hypothesis 3: The PPMC co-efficient is 0.761, and the probability value is 0.000, as indicated in Table 8. This finding suggests that multinational companies in Rivers State, Nigeria have a positive nexus with customer satisfaction when it comes to robotic process automation. Also, we can reject null hypothesis three (H03) and conclude that there is a strong nexus between customer satisfaction and robotic process automation in multinational companies in Rivers State, Nigeria since the probability-value (0.000) is below the alpha value (0.05).

Hypothesis 4

H_{04}: There is no substantial nexus between robotic process automation and profitability of multinational companies in Rivers State, Nigeria.

Table 9: PPMCC of Robotic Process Automation and Profitability

		Robotic Process Automation	Profitability
Robotic Process Automation	Pearson Nexus	1.000	0.735**
	Sig.(2-tailed)	.	0.000
	N	60	60
Profitability	Pearson Nexus	0.735**	1.000
	Sig.(2-tailed)	0.000	.
	N	60	60

**. Statistically substantial nexus exists at the 0.01 level (2-tailed).

Source: Field Survey by Researcher, 2025.

Decision on Hypothesis 4: The PPMC co-efficient is 0.735, and the probability value is 0.000, as indicated in Table 9. This finding suggests that multinational companies in Nigeria have a positive nexus with their profitability thanks to robotic process automation. There is also a rejection of null hypothesis four (H04) since the probability-value (0.000) is below the alpha value (0.05). Robotic process automation is substantially associated with the profitability of multinational organisations in Rivers State, Nigeria, as a result.

Discussion of Findings

This study examined the nexus between the effectiveness of multinational corporations in Rivers State, Nigeria and the role of AI. Multinational firms operating in Rivers State, Nigeria found a large and favourable nexus between customer satisfaction and the deployment of machine learning automation. Furthermore, there exist a substantial and favourable nexus between the profitability of multinational corporations in Rivers State, Nigeria and the implementation of machine learning automation. Additionally, multinational corporations in Rivers State, Nigeria demonstrate a substantial and favourable nexus between customer satisfaction and robotic process automation. The profitability of multinational companies in Rivers State, Nigeria shows a substantial favourable nexus with robotic process automation. Omemgbeoji and Ofor's (2023) study backs up this conclusion by showing that manufacturing companies in Nigeria may improve their efficiency by using RPA and Machine Learning Automation.

5.0 CONCLUSION AND RECOMMENDATIONS

Conclusion

This study appraised the nexus between the performance of multinational companies in Rivers State, Nigeria and Artificial Intelligence. Consistent with the study's findings, RPA and ML automation have a positive and substantial effect on the performance of multinational corporations in Rivers State, Nigeria, as well as customer satisfaction and profitability. Based on the results, the research found that AI considerably boosts the efficiency of multinational companies operating in Rivers State, Nigeria.

Recommendations

This investigation's conclusions necessitated the following recommendations:

i. The management of multinational companies in Rivers State should use machine learning automation, a subset of artificial intelligence driven technology that reduces human intervention in tasks to enable them make decisions that will result to a feeling of customer satisfaction of their products or services.

ii. The management of multinational companies should establish self-improving algorithms to automate decision making that will enable them have the capacity to make profits from their business operations.

iii. The management of multinational companies should integrate rule- based software that will focus on efficiency and error reduction in routine work flows in order to achieve customer’s perceived performance of a product in relation to their expectations.

4, The management of multinational companies should embrace the use of robotic process automation software to automate rule-based or repetitive business process for high volume transaction tasks involving finance and human resource which will act as a great indicator of the ability of the firms to raise their level of income.

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