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Effect of Artificial Intelligence Management System on the Performance of Corporate Governance in Nigeria

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ABSTRACT

The study examined the effect of the Artificial Intelligence Management System on the Performance of Corporate Governance in Nigeria. The specific objectives are to examine the effect of Machine Learning Algorithms on the Performance and evaluate the effect of Natural Language Processing (NLP) on the Performance of Corporate Governance in Nigeria. A descriptive research design was adopted for the study. A well-structured questionnaire design with a five-point Likert scale was used to collect data for the study. The data was analyzed using a one-sample t-test analysis. The result reveals that Machine Learning Algorithms have a significant positive effect on the Performance of Corporate Governance, with a P-value of 0.000<0.05, and Natural Language Processing (NLP) has a significant positive effect on the Performance of Corporate Governance, with a P-value of 0.000<0.05 in Nigeria. The study concluded that the Artificial Intelligence Management System has a significant positive effect on the Performance of Corporate Governance in Nigeria. The study recommended, among others, that Organizations should prioritize the implementation of Machine Learning Algorithms to improve data analysis and decision-making processes.

Keywords: Artificial, Corporate, Intelligence, Management, Performance.

INTRODUCTION

Artificial Intelligence Management Systems (AIMS) represent a groundbreaking innovation in organizational management, leveraging the power of AI technologies to optimize processes, improve decision-making, and enhance overall efficiency (Wong et al. 2024). These systems integrate advanced tools such as machine learning, natural language processing, and predictive analytics to analyze vast amounts of data, automate routine tasks, and provide actionable insights in real time (Tschang & Almirall, 2021). As businesses operate in increasingly dynamic and competitive environments, AIMS has become essential for organizations seeking to stay ahead in their respective industries. AIMS transcends traditional management systems by enabling intelligent automation, adaptive learning, and precision in execution (Sarker 2022). From resource allocation and workflow optimization to strategic planning and risk management, these systems facilitate seamless coordination across various organizational functions. By minimizing human error, improving accuracy, and ensuring data-driven decision-making, AIMS empowers organizations to achieve operational excellence and maintain a competitive edge (Brynjolfsson and McAfee 2014).

The emergence of Artificial Intelligence (AI) as a transformative technology has significantly impacted various sectors, including corporate governance. In the context of corporate governance, these systems offer innovative solutions to address long-standing challenges such as inefficiency, lack of transparency, and inadequate risk management (Edwards, 2024). Corporate governance, which encompasses the set of rules, practices, and mechanisms by which organizations are directed and controlled, plays a pivotal role in ensuring accountability,

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fostering stakeholder trust, and maintaining organizational integrity (Davenport & Ronanki, 2018). Traditional governance frameworks often rely on manual processes and human judgment, which can be prone to errors, biases, and inefficiencies. AI management systems, on the other hand, bring a data-driven approach that facilitates real-time analysis, predictive modeling, and automated compliance monitoring, thereby enhancing governance outcomes (Priyadharshini and Mathew, 2023).

In Nigeria, where corporate governance is often challenged by inefficiency, lack of transparency, and poor compliance with regulations, AI management systems offer a promising solution to address these persistent concerns. AI systems can streamline governance processes, improve data-driven decision-making, and foster accountability, thereby enabling organizations to meet stakeholder expectations and adhere to global best practices. It involves balancing the interests of stakeholders such as shareholders, management, customers, suppliers, financiers, and the broader community (Priyadharshini and Mathew, 2023). In Nigeria, weak corporate governance practices have historically hindered the full realization of organizational potential, leading to a loss of investor confidence and hindering economic growth (Tschang & Almirall, 2021). However, the advent of AI management systems has the potential to transform this narrative by automating compliance monitoring, predicting risks, and ensuring real-time reporting, thereby significantly enhancing the performance of corporate governance structures.

This study explores the impact of AI management systems on the performance of corporate governance in Nigeria, analyzing their role in promoting transparency, reducing inefficiencies, and fostering sustainable business practices. By examining the opportunities and challenges associated with implementing these systems, the study aims to highlight the strategic importance of AI in driving effective governance in the dynamic Nigerian corporate environment.

1.1. Statement of the Problem

Corporate governance in Nigeria has historically been plagued by inefficiencies, a lack of transparency, and inadequate compliance with regulatory frameworks, which have contributed to weak institutional performance and eroded stakeholder confidence. Traditional governance mechanisms often rely on manual and human-driven processes, which are susceptible to errors, biases, and delays in decision-making. These challenges are further exacerbated by the dynamic and complex nature of Nigeria's corporate environment, characterized by evolving regulations, economic volatility, and increasing demands for accountability and transparency.

Artificial Intelligence Management Systems (AIMS) present a promising solution to these challenges by offering advanced tools that leverage machine learning, data analytics, and automation to enhance governance processes. However, the adoption of AIMS in corporate governance structures in Nigeria remains limited, raising critical questions about their effectiveness, practicality, and potential impact on governance performance. Despite the growing global discourse on the transformative potential of AI in governance, there is a lack of empirical evidence and contextualized studies examining the specific effects of AIM on corporate governance practices in Nigeria.

This gap underscores the need for a comprehensive investigation into how AIMS can address the inefficiencies in governance processes, improve compliance and transparency, and foster better decision-making in Nigerian organizations. Understanding these dynamics is essential for developing strategic recommendations to optimize the integration of AIMS in corporate governance and to enhance organizational performance in a rapidly evolving corporate landscape.

1.2. Objective of the Study

The main objective of this study is to examine the effect of the Artificial Intelligence Management System on the Performance of Corporate Governance in Nigeria. The specific objectives are to;

i. Examine the effect of Machine Learning Algorithms on the Performance of Corporate Governance in Nigeria.

ii. Evaluate the effect of Natural Language Processing (NLP) on the Performance of Corporate Governance in Nigeria.

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1.3. Hypotheses of the Study

i. Machine Learning Algorithms have no significant effect on the Performance of Corporate Governance in Nigeria.

ii. Natural Language Processing (NLP) has no significant effect on the Performance of Corporate Governance in Nigeria.

REVIEW OF RELATED LITERATURE

2.1. Conceptual Review

Artificial Intelligence Management System

Wong et al. (2024) described AI as a domain in computer science dedicated to developing algorithms and systems that can perform tasks typically requiring human intelligence, including voice and image recognition and decision-making. Tschang & Almirall (2021) argue that AI is designed to either augment or replace human abilities in carrying out complex, repetitive tasks. Similarly, Sarker (2022) explains that AI incorporates a range of techniques that enable machines to acquire knowledge from data and alter their behavior according to past experiences. This adaptability enables AI to execute specific tasks more effectively without the need for constant human supervision, which is especially beneficial for industries reliant on extensive automation, where precision and speed are crucial. As a result, AI's capacity to handle highly complex data is continually evolving, fueling the development of more advanced technologies. AI broadly refers to a computer's capacity to perform tasks requiring human intelligence, including logical reasoning, problem-solving, information processing, and language comprehension. An AI management system is a structured framework within organisations that is responsible for the oversight of AI technologies. It encompasses practices for the deployment, operation, and continual improvement of AI applications, ensuring ethical use, transparency, and accountability in AI-related processes and decisions (Edwards, 2024). Artificial Intelligence (AI) has emerged as a transformative force across various sectors, reshaping how organizations operate and make decisions. AI Management Systems (AIMS) facilitate the integration of AI technologies into organizational processes, enhancing efficiency, decision-making, and strategic planning. AIMS have evolved to incorporate sophisticated algorithms capable of learning from vast datasets and improving over time (Davenport & Ronanki, 2018). This evolution is marked by the transition from simple automation tools to complex systems that can simulate human cognitive functions.

AIMS encourages organisations to adopt a continuous improvement mindset, leveraging feedback loops and performance metrics to enhance AI system effectiveness and reliability over time. This approach ensures that AI technologies evolve in response to emerging challenges and opportunities, maintaining their alignment with ethical standards and organizational objectives (Edwards, 2024). AIMS emphasises the need for AI systems to be accountable, meaning that there should be mechanisms in place for tracing decisions back to the organisations and individuals responsible. Moreover, contestability allows stakeholders to challenge AI decisions, ensuring that AI systems remain aligned with ethical standards and societal values (Edwards, 2024). AIMS have found applications across various domains, including supply chain management, human resources, marketing, and customer service.

i. Supply Chain Management

In supply chain management, AIMS enhances forecasting accuracy and inventory management. For instance, AI-driven predictive analytics can analyze historical data and market trends, enabling organizations to optimize their supply chain operations (Wang et al., 2016). By employing machine learning algorithms, companies can predict demand fluctuations and adjust their inventory levels accordingly, reducing costs and improving service levels.

ii. Human Resources

In human resources, AIMS streamlines recruitment processes and employee management. AI tools can automate the screening of resumes, utilizing natural language processing to identify suitable candidates based on predefined criteria (Kaur & Gandolfi, 2023). Furthermore, AIMS can facilitate employee engagement by analyzing feedback and sentiment, allowing organizations to tailor their management strategies to improve workforce satisfaction.

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iii. Marketing

Marketing strategies have also been transformed through AIM. AI algorithms can analyze consumer behavior, enabling personalized marketing campaigns that enhance customer engagement and conversion rates (Chaffey and Ellis-Chadwick, 2012). Machine learning models can segment markets more effectively, allowing organizations to target specific demographics with tailored content.

iv. Customer Service

In customer service, chatbots and virtual assistants powered by AI have revolutionized client interactions. These systems can handle routine inquiries, providing instant responses and freeing human agents to tackle more complex issues (Ramki et al., 2024). The integration of AI in customer service not only improves efficiency but also enhances customer satisfaction by providing timely assistance. Despite the advantages, organizations face several challenges in implementing AIMS. One prominent issue is the lack of skilled personnel capable of developing and managing AI systems. A study by Brynjolfsson and McAfee (2014) indicates that the skills gap in AI technology poses a significant barrier to practical implementation. Organizations must invest in training and development to equip their workforce with the necessary expertise.

Machine Learning Algorithms

Machine learning is a method of optimizing the performance criterion using experience. It builds the mathematical model by using the theory of statistics, as the main task is to infer from the samples provided. The algorithm uses computational methods to get the information directly from the data. Machine learning algorithms are also sets of instructions (or code) that allow computers to learn from data, identify patterns, make predictions, or perform tasks without explicit programming (Brynjolfsson and McAfee 2014). They enable AI systems to discover insights and improve performance over time. Machine Learning (ML) has become a cornerstone of data-driven decision-making in various sectors, including finance, healthcare, marketing, and autonomous systems. As a subset of artificial intelligence, ML algorithms enable computers to learn from data, identify patterns, and make predictions without explicit programming (Priyadharshini and Mathew, 2023).

Machine learning provides a potential opportunity for making great strides in improving audit speed and quality but also implies significant risks. Machine learning is a component of AI that centers on the machines' ability to receive data and learn from the data using altering algorithms accordingly as they continue to learn more about the information. It emanated from the idea that machines can learn to execute some tasks just like the way humans do. Kokina and Davenport (2017) allude to the use of machine learning and its possibility of altering the audit profession, substantially modifying the ways audits are conducted.

Machine learning algorithms can come in different forms. For example, unsupervised learning, supervised learning, and reinforcement learning. With supervised learning, data sets are categorized so that emerging trends are observed and used for the labeling of new data sets. Supervised machine learning can be used to forecast future results, for example, debts that are likely to go bad or possibilities of liquidation. Concerning unsupervised learning, the data sets processed unlabelled data sets that are screened and categorized concerning similarities and differences (IFAC, 2018). Unsupervised learning can be used to identify previously unanticipated risks, and these can be then investigated further and in-depth. Concerning reinforcement learning, even though the data sets are not labelled, after the performance of an action or multiple actions, the AI system receives feedback. Machine learning processes data into usable information. The use of machine learning could lead to consistency, reduced time for labour-intensive tasks, and depth in analysis for tasks that require detailed assessment. According to Kokina and Davenport (2017), the utilization of machine learning algorithms could reduce the unavoidable "trade-off between speed and quality" where audits are done manually. With the use of machine learning algorithms, substantive tests can be done in a more directed and informed way.

Machine learning algorithms can learn from auditors' conclusions on certain items and use the same line of thinking to conclude items with similar features. Machine learning employs models to do data analysis to comprehend trends and make forecasts. Through machine learning, learning is automated and ongoing. Machine learning leans more

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towards statistical analysis, though, unlike statistical analysis, which utilizes probability theory and distributions, it employs a combination of mathematical equations that forecast an outcome. This makes it more suitable for linear regression, cluster analysis, and classifications (Dickey, Blanke & Seaton, 2019). To highlight the use of machine learning in auditing, Kepes (2016) alludes to the use of Argus, a machine learning tool used by Deloitte accounting firm and Kokina and Davenport (2017) refer to Halo (a machine learning system utilized to assess journal entries, testing all entries, and paying attention to those transactions signaling high risks thus, positively influencing the quality of assessment and increasing the speed of auditors).

Natural Language Processing (NLP)

Natural Language Processing (NLP) represents a multifaceted domain within artificial intelligence (AI) and computational linguistics dedicated to equipping computers with the capability to understand and manipulate human language in various forms, including written text, spoken language, and gestures. By applying sophisticated algorithms and linguistic models, NLP enables machines to perform a wide range of tasks, such as language translation, sentiment analysis, text summarization, question answering, and speech recognition (Khaleel et al., 2024). Natural Language Processing – NLP is a branch of artificial intelligence and a resource to carry out qualitative tasks of unstructured information based on mathematical and statistical algorithms on large amounts of data.

In this regard, Khanbhai et al. (2021) pointed out that NLP is a computer analytical technique used to extract information from an unstructured text into a structured form, for which syntactic processing of a text is done; it also captures the meaning and identifies links based on semantic relationships. Jonnalagadda et al. (2015) indicate that NLP is a technique of automatic extraction of information from different electronically written resources at the level of documents, words, grammar, meaning, and context. Likewise, Pons et al. (2021) stated that the NLP is a key tool for information automation and extraction that can process large amounts of data, and its application is useful for issuing reports from the radiology area of a hospital.

Several sectors, including healthcare, banking, and transportation, can be transformed by AI. Machine learning, natural language processing, and robotics are some of their subfields. A popular and intriguing area of AI is natural language processing. For several reasons, Natural Language Processing (NLP) is acknowledged as a significant and rapidly developing field of Artificial Intelligence (AI) (Cofina et al.,2024). A popular and intriguing area of AI is natural language processing. Natural Language Processing (NLP) is quickly revolutionizing the way businesses work. Industries are turning to AI and NLP to help them analyze, interpret, and use data more effectively due to the exponential growth of data. Industries can make informed decisions, increase operational effectiveness, and customize the customer experience using AI and NLP technologies.

Even though the use of AI in a variety of sectors has increased recently, there is still a large body of study to be done on the moral implications and socioeconomic effects of broad AI integration (Cofino et al., 2024). NLP has several uses in a variety of industries. The extraction of useful data that can aid decision-making, administrative reporting, and research is crucial. In the healthcare sector, it extracts data from medical records. The study by Chen et al. (2019) applied NLP to extract therapeutically valuable data from Chinese electronic medical records. With the help of these details, including patient symptoms, they assessed the HCC staging. It plays an essential role in the clinical environment to assist doctors in cancer diagnosis and therapies, an application developed by Baihan et al. (2023) that makes real-time treatment strategy recommendations to a therapist throughout a psychotherapy session.

NLP can analyze news articles and social media data to inform investment decisions and identify emerging market trends, It can also automate customer support that replies to users' queries by analyzing them using NLP and assists them in every way it can. The finance domains frequently present textual documents designed to convey various messages regarding management's evaluation of the firm's present and future performance about corporate financial performance, analysts' evaluations of a company's performance, industry norms and laws, and proof of adherence to the necessary regulations and requirements, (Cofina et al, 2024). For lawyers and judges, this can be useful as an assisting tool to identify cases and rapidly extract patterns to certain decisions.

Based on their study, High accuracy can be achieved when predicting court decisions in the Turkish legal system, mainly when using deep learning-based techniques. NLP has the potential to transform the field of law by automating

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many tasks and providing new insights into legal documents and data. As technology advances, we can expect to see even more innovative applications of NLP in Law. In the marketing area, NLP has the potential to transform marketing by providing new ways to understand customer behavior, optimize marketing content, and improve customer engagement. We may anticipate seeing even more cutting-edge NLP marketing applications as technology develops. Overall, NLP has the potential to transform the financial sector by automating many tasks and providing new insights into market trends and customer behavior (Cofina et al., 2024).

Performance of Corporate Governance

Corporate governance offers the framework that determines how the company's goals are established, how to achieve them, and how to track its progress. In addition to facilitating effective monitoring, good corporate governance should give the board and management the right incentives to achieve goals that are in the best interests of the business and its shareholders. Maintaining equilibrium between social and economic objectives, as well as between personal and collective aspirations, is the focus of corporate governance. Notionally, corporate governance practices are expected to: (a) focus board attention on optimizing the company's operating performance and returns to shareholders, (b) ensures that directors made accountable to shareholders and management accountable to directors (c) both corporate directors and management have a long-term strategic vision that, at its core emphasizes sustained shareholder value, (Adewuyi and Olowookere, 2008).

Corporate governance, as defined by Von-Nandelstadh & Rosenberg (2003), refers to corporate decision-making and control, particularly the structure of the board and its working procedures. Ahmed and Hamdan (2015) see the term as the arrangement between the managers of the firm and the owners of the firm, particularly addressing the issue of how managers' report the financial health of the firm to the owners. Corporate governance is recognized as one of the most important implications in building marketplace confidence and attracting positive investors in the organization specifically and the economy generally. Promoting good corporate governance standards is considered to be very important in attracting investment capital, reducing risk, and developing a firm's performance.

The integration of Artificial Intelligence (AI) into corporate governance has emerged as a pivotal trend in modern business practices, fundamentally altering decision-making processes, compliance strategies, and organizational oversight. With AI technology, the business does not need to put the burden of the large tasks on the employees as the AI machines can do large tasks effectively within a short period (Brynjolfsson and Mitchell, 2017). Along with that, it improves productivity and growth of the business, and it gives more accurate results than human beings. The convergence of AI and corporate governance presents unique opportunities and challenges, particularly in diverse global contexts. In developed economies, AI has already been integrated into corporate decision-making, compliance monitoring, and fraud detection, demonstrating its potential to enhance governance frameworks.

However, in developing regions such as Kenya, the adoption of AI in corporate governance faces obstacles like inadequate infrastructure, limited technical expertise, and regulatory gaps (Kiruga, 2024). On a global scale, AI is revolutionizing how corporate boards operate, particularly in risk assessment, regulatory compliance, and strategic forecasting. According to a report by the World Economic Forum (WEC, 2020: WEF, 2020), AI is projected to drive economic growth by 26% by 2030 if adopted responsibly across key sectors, including governance. In North America and Europe, AI is increasingly seen as a critical tool in corporate leadership, enhancing data-driven decision-making while addressing complex governance challenges such as diversity and sustainability (Deloitte, 2021).

In countries like South Africa and Nigeria, AI is being adopted for predictive analytics, regulatory compliance, and ethical decision-making. However, Africa faces unique challenges, including insufficient technological infrastructure, a skills gap, and weak regulatory frameworks, all of which limit AI's full integration into corporate governance (D.I, 2021). Globally, regionally, and locally, AI's role in corporate governance presents both opportunities and challenges. While the potential for enhanced efficiency and strategic foresight is clear, critical concerns surrounding ethics, regulatory compliance, and corporate accountability must be addressed.

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2.2. Theoretical Reviews

Theory of Socio-Economic Development

The theory of socio-economic development was propounded by Joseph Alois Schumpeter (1883 -1950). A renowned economist who ranked amongst the greatest intellectuals of the 20th century. This theory elaborates that in the cyclical development of the economy, long waves, which result in increase in production volumes, higher productivity, improved product quality, lower prices and increase in income is driven by advancement in the technological revolution as part of the socio-economic evolution which consists of an incessant process of creative destruction that modernizes the modus operandi of the society as a whole, including its economic, social, cultural, and political organization, (Schumpeter, 1934).

This cyclic development was described by the theorist as "creative destruction", during which there is a continuous updating of the productive apparatus and the transition to a higher stage of development. The major focus of this theory is its main provisions and its relationship with new and emerging markets, focusing on both technological and economic evolution. Thus, artificial intelligence, which is a trending technology aimed at automating and improving the technological advancement of the business to deliver more economic value to the shareholders quickly, comes to mind. The socio-economic evolution theory takes a multi-dimensional approach to contemporary society, explaining the principles of operation and the laws of evolution of the economy at all levels. Thus creating a "synthesized" theoretical system, taking the best from existing modern and past economic thoughts (Mekuri-Ndimele, 2022).

Technology Acceptance Theory:

The technology acceptance theory was proposed by Davis in 1989 (Davis, 1989) and was adapted from the theory of reasoned action. The technology acceptance theory is concerned with the general acceptance of information technology by society, the business community, workplaces, and researchers. It suggests that the world is witnessing new technological innovations, and the use of computers and the level of acceptance and application of technology in every human activity are impressive and a welcome tool for solving problems and getting things done speedily.

Zhang et al. (2020) noted that technological innovations are widely accepted as a new way of life and have gradually affected every part of human beings, as the way of doing things globally now revolves around new technologies. New technologies, the Internet of Things, electronics, and the use of mobile communication have all replaced traditional methods. Dagiliene and Kloviene (2019) noted that the acceptance of information technology has brought new ways of thinking, communicating, and doing business, and this has brought lots of economic gains to society. The theory suggests that development to optimize the flow of information to trigger knowledge to cope with growing business transactions, and the level of acceptance of information systems has made a huge contribution to private and corporate organizations in enhancing strategic planning and meeting business objectives.

2.3. Empirical Reviews

Lawson-Body et al. (2022) conducted a study to examine customer relationship management (CRM) empowered by NLP that offers a new way of building trust with customers effectively in selected US firms. The study aims to propose NLP techniques to minimize human factor errors in natural language processing and build multilevel relationship trust. The study employed a sentiment analysis-based literature review in this research. The results revealed that customers process natural language better than the information displayed, hence, NLP creates a new opportunity to interact with social media customers to trigger their trust, and once the customers trust the companies, they should become loyal customers. Unarguably, customer loyalty has a beneficial impact on the return on investment of many organizations.

Mekuri-Ndimele (2022) conducted a study to investigate the effect of machine learning on the business growth of manufacturing companies in Rivers State, Nigeria. The study aims to analyze the relationship between machine learning and business growth with a focus on market share, diversification, and business expansion of the manufacturing firms in Rivers State, Nigeria. The explanatory survey research design was adopted for the study. The results revealed that machine learning had a positive significant effect on market share, diversification, and business

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expansion of the manufacturing firms that adopted machine learning, hence, it concluded that machine learning has a positive significant effect on the business growth of manufacturing companies in Rivers State.

Adelakun et al. (2024) conducted a study analyzing the integration of machine learning algorithms into audit processes of selected industries in Nigeria. The study explored the integration of machine learning (ML) algorithms into audit processes, focusing on the potential benefits and challenges this technology brings to the field of finance and accounting. The study employs both qualitative and quantitative methods, including surveys and case studies. The results revealed that ML algorithms can significantly enhance the efficiency of audits, and by automating repetitive tasks, auditors can focus on more complex areas requiring human judgment.

Muhammad (2025) conducted a study on the impact of Artificial Intelligence (AI) and Natural Language Processing (NLP) on media production and literature in Nigeria. The study aims to investigate the extent to which these technologies are adopted, their benefits, challenges, implications, and potentialities in the Nigerian context. A mixed-methods approach was used, which includes combining quantitative data from structured questionnaires and qualitative insights from semi-structured interviews with media professionals, authors, and AI/NLP experts. The results, on the one hand, revealed moderate adoption of AI and NLP, primarily for tasks such as automated content creation, editing and translation while these technologies improve efficiency and accessibility, on the other hand, significant challenges such as infrastructure limitations, high costs, lack of expertise, and ethical concerns is reducing their widespread adoption.

METHODOLOGY

The research design for this study was mostly descriptive to assess the problem statement that was the subject of the investigation. Descriptive research is any type of study that outlines the features of a specific event. It uses a methodical approach to situational explanation. It is anticipated that this kind of research will support decision-making. They are necessary conditions for generalizations and conclusions. The research investigates the effect of the Artificial Intelligence Management System on the Performance of Corporate Governance in Nigeria. The target population for the study consisted mostly of personnel/staff who are experts in the Performance of Corporate Governance in Nigeria. The sample size for the study consisted of 243 personnel/staff, as shown by the Taro Yamane formula. The sample allocation for the different firms was estimated using the Kumar allocation formula.

The pertinent questions found in the study and the concept gleaned from the literature review served as the foundation for the questionnaire's development. The questionnaire comprised eighteen questions in total. Its purpose was to gather data on the Artificial Intelligence Management System and the performance of corporate organizations. It was intended only for employees at different levels who, due to their roles and responsibilities, are qualified to respond to the questions. When we refer to a research tool's validity, we mean the extent to which it accomplishes its goals or measures what it is supposed to measure. Expert validity was used by the researcher to make sure that the questionnaire item questions were pertinent to the research questions.

This individual is a recognized expert in the subject and a practicing professional. Copies of the questionnaire were distributed to respondents from the sampled units using the test-retest process, which established consistency and confirmed the validity of the instrument. Then they were collected and distributed once more. The result was determined using Cronbach's alpha test coefficient, and its reliability was confirmed by the related reliability coefficient of 0.809, which is higher than the required threshold of 0.7. A structured questionnaire was utilized to gather data because of the scope of the investigation. The investigator gave the respondents hard copies of the questionnaire in person. There were twelve measurement items in the questionnaire. A total of 243 surveys were sent out to the corporate organizations; 208 of those were returned, yielding an 85.6% response rate. Simple percentages, the mean and standard deviation of the measurement items, and a one-sample t-test analysis were the statistical approaches employed for the data analysis to address the study's premise.

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RESULT AND DISCUSSION

This section covers the data collection, presentation, and analysis for this study. In line with the various study objectives, the study's findings are presented and debated. This part also contains the results of the objectives and hypothesis test. Tables were used to present and analyze the gathered data, along with other widely used statistical techniques, including sample t-test and basic percentages. To improve comprehension, tables also offer succinct explanations.

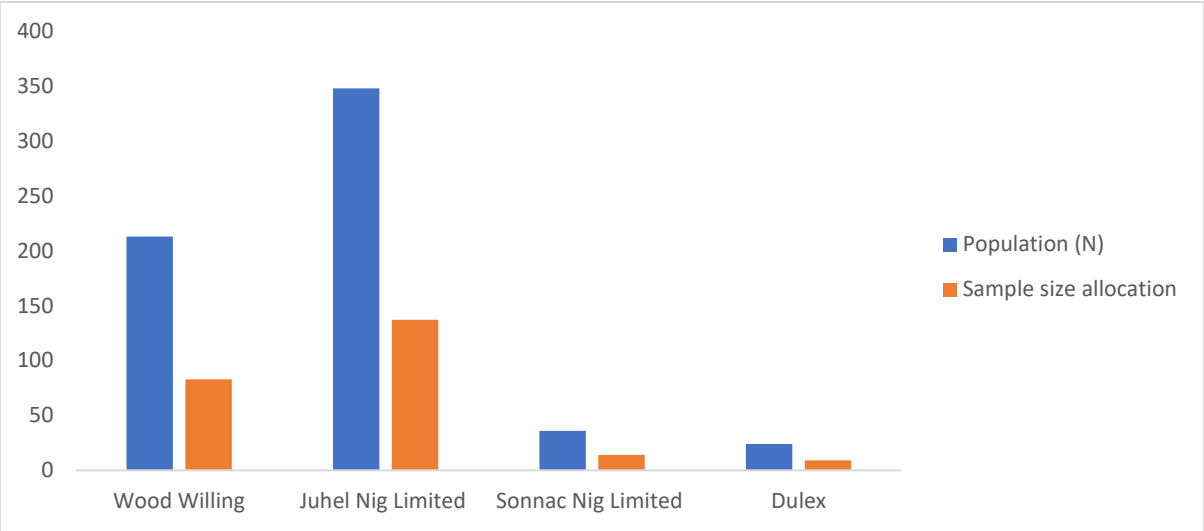

Figure 1: A bar chart represents the distribution of the firm's population and sample size

4.1. Research Questions

i. **Research Question One:** What is the effect of Machine Learning Algorithms on the Performance of Corporate Governance in Nigeria?

Table 4.1.1: Mean and standard deviation of the effect of Machine Learning Algorithms on the Performance of Corporate Governance organizations.

S/N	Measurement Items	SA	A	UD	D	SD	Mean ± Std
1	Machine Learning Algorithms have led to cost savings for our firm	108 [50.5%]	84 [39.3%]	3 [1.4%]	5 [2.3%]	8 [3.8%]	4.34±.923
2	Machine Learning Algorithms have positively impacted our firm's productivity	112 [53.8%]	76 [36.5%]	2 [1.0%]	7 [3.4%]	11 [5.3%]	4.30±1.035
3	There have been recent Machine Learning Algorithms projects (e.g., roads, ports, airports) in your region.	95 [45.7%]	88 [42.3%]	10 [4.8%]	6 [2.9%]	9 [4.3%]	4.22±.985
4	Have there been any recent improvements in Machine Learning Algorithms (e.g., power plants, grid upgrades) in your region?	82 [39.4%]	75 [36.1%]	7 [3.4%]	12 [5.8%]	32 [15.4%]	3.78±1.416

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S/N	Measurement Items	SA	A	UD	D	SD	Mean ± Std
5	I believe that Machine Learning Algorithms have improved our firm's competitiveness in the market.	101 [48.6%]	68 [32.7%]	9 [4.3%]	14 [6.7%]	16 [7.7%]	4.08±1.221
6	I would say that most of my firm's overall performance in the past year was largely due to Machine Learning Algorithms.	91 [43.8%]	72 [34.6%]	6 [2.9%]	17 [8.2%]	22 [10.6%]	3.93±1.322
	Aggregate						**4.11±1.150**

The above table 4.1.1 reveals an analysis of the measures of the variable instrument for the effect of Machine Learning Algorithms on corporate organizations' performance. The descriptions in the table show the mean and standard deviation generated for all the statements on the questionnaire. The results indicate that all of the respondents agreed with the instruments. This is based on the aggregate mean score and standard deviation, which is above the minimum acceptance mean of 3.0 obtained from the usage of five Likert scales.

ii. **Research Question Two:** To what extent does Natural Language Processing (NLP) affect the performance of Corporate Governance in Nigeria?

Table 4.2.1: Mean and standard deviation of workforce skill and performance of manufacturing firms

S/N	Measurement Items	SA	A	UD	D	SD	Mean ± Std
7	I am satisfied with the skill level of the workforce in Corporate Governance.	107 [51.4%]	75 [36.1%]	4 [1.9%]	9 [4.3%]	13 [6.3%]	4.22±1.107
8	The Corporate Governance effectively addresses challenges and adapts to changes in the industry.	92 [44.2%]	84 [40.4%]	6 [2.9%]	10 [4.8%]	16 [7.7%]	4.08±1.164
9	Overall, I am satisfied with the leadership and support provided within the organization.	76 [36.5%]	58 [27.9%]	9 [4.3%]	25 [12.0%]	40 [19.2%]	3.50±1.545
10	The skills acquired by employees align well with the needs of the Corporate Governance processes.	63 [30.3%]	54 [26.0%]	13 [6.3%]	30 [14.4%]	48 [23.1%]	3.26±1.576
11	The Corporate Governance firm encourages continuous learning and development among its workforce.	7 [3.4%]	5 [2.4%]	3 [1.4%]	78 [38.0%]	115 [54.8%]	1.62±.904
12	There is effective communication among different departments within Corporate Governance.	5 [2.4%]	6 [2.9%]	1 [0.5%]	92 [44.2%]	105 [50.0%]	1.63±.840
	Aggregate mean						**3.05±1.189**

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The result from the field survey in Table 4.2.1 revealed an analysis of the measures of the variable instrument to what extent workforce skill affects the performance of manufacturing firms in Enugu State, Nigeria. The descriptions in the Table show the mean and standard deviation generated for all the statements on the questionnaire. It indicates that the majority of the respondents agreed with the instruments, except for measurement items 11 and 12, where the respondents disagreed with the instruments being formulated. This is based on the aggregate mean score and standard deviation of [3.05±1.189], which is above the minimum acceptance mean of 3.0 obtained from the usage of five Likert scales.

4.3 Hypothesis Testing

4.3.1 Hypothesis One

H_{11}: Machine Learning Algorithms have not significant positive effect on the Performance of Corporate Governance in Nigeria.

H_{12}: Machine Learning Algorithms have a significant positive effect on the Performance of Corporate Governance in Nigeria.

Table 4.4.1a: One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Hypothesis one	6	4.1083	.22058	.09005

Table 4.4.1b: One-Sample Test

	Test Value = 3.0					
	T	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Hypothesis one	12.308	5	.000	1.10833	.8768	1.3398

Interpretation and Decision

Table 4.3.1b is the one-sample t-test result, with a t-test value of 12.308 and a probability value of 0.000, suggesting a significant impact of Machine Learning Algorithms on the performance of Corporate Governance. The high t-test value indicates a substantial difference between the observed mean performance of Corporate Governance and the hypothesized mean performance in the absence of Machine Learning Algorithms. Additionally, the extremely low probability value suggests that the likelihood of observing such a large difference in performance purely due to chance is virtually zero.

Decision:

At a 5% level of significance, there is a significant effect of Machine Learning Algorithms a significant effect on the performance of Corporate Governance in Nigeria.

4.3.2 Hypothesis Two

H_{31}: Natural Language Processing (NLP) *has no significant effect on the performance of Corporate Governance in Nigeria*

H_{32}: Natural Language Processing (NLP) has no significant effect on the performance of Corporate Governance in Nigeria.

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Table 4.3.2a: One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Hypothesis three	6	4.2500	.28517	.11642

Table 4.3.2b: One-Sample Test

	Test Value = 3.0					
	T	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Hypothesis three	10.737	5	.000	1.25000	.9507	1.5493

Interpretation and Decision

The analysis in Table 4.3.1b shows that the probability associated with the calculated significance level value was 0.000, which is less than 0.05. This implies that it was significant. In other words, the null hypothesis should be rejected.

Decision:

At a 5% level of significance, there is a significant effect of Natural Language Processing (NLP) on the performance of Corporate Governance in Nigeria.

4.4 Discussion of Findings

In the context of assessing the influence of Machine Learning Algorithms on Corporate Governance, this result implies that there is a statistically significant relationship between the two variables. It suggests that Machine learning algorithms can significantly enhance corporate performance, operational efficiency, improve customer relations, and drive innovation, ultimately leading to better financial performance and competitive advantage. This finding has significant implications for policymakers, investors, and business leaders, indicating that investments in Machine Learning Algorithms could yield tangible benefits for Corporate Governance, potentially boosting economic growth and development. Further analysis and exploration may be warranted to understand the mechanisms through which Machine Learning Algorithms influence corporate governance performance and inform strategic decision-making and policy formulation.

Similarly, in the context of assessing the impact of Natural Language Processing (NLP) on Corporate Governance's performance, this result implies that there is a statistically significant association between the two variables. It suggests that Natural Language Processing (NLP) can significantly enhance corporate performance through improved customer service, enhanced communication, data analysis, market research, risk management, employee engagement, and training. This finding underscores the importance of investing in training and education programs to enhance the skills of the workers within corporate governance. Policymakers, industry leaders, and human resource managers may use this insight to prioritize initiatives aimed at improving Natural Language Processing (NLP), which could lead to competitive advantages and sustained success for corporate governance.

CONCLUSION

In conclusion, the integration of Artificial Intelligence Management Systems has markedly enhanced the performance of corporate governance in Nigeria. The application of Machine Learning Algorithms has proven to be particularly impactful, providing organizations with the ability to analyze vast amounts of data quickly and derive actionable insights. This capability has led to more informed decision-making, improved risk management, and greater transparency within corporate structures.

Similarly, Natural Language Processing (NLP) has played a crucial role by facilitating better communication and understanding among stakeholders. Through the analysis of textual data, NLP aids in identifying trends, sentiments,

and potential issues, thereby allowing for proactive governance measures. The combined effects of these technologies not only streamline governance processes but also foster a culture of accountability and ethical practices.

Overall, the positive influence of AI, through both Machine Learning and NLP, underscores the importance of adopting advanced technological solutions in corporate governance frameworks. As organizations in Nigeria continue to embrace these innovations, they can expect to see enhanced operational efficiencies, stronger compliance, and a more robust governance landscape. The study concluded that the Artificial Intelligence Management System has a significant positive effect on the Performance of Corporate Governance in Nigeria.

RECOMMENDATIONS

To harness the benefits of Artificial Intelligence Management Systems effectively and enhance corporate governance in Nigeria, the following recommendations are proposed:

i. Organizations should prioritize the implementation of Machine Learning Algorithms to improve data analysis and decision-making processes. Investing in training and tools that facilitate predictive analytics can enhance risk assessment and strategic planning.

ii. Companies should utilize NLP tools to analyze communication patterns and stakeholder feedback. By doing so, they can better understand sentiments and trends, which will aid in addressing concerns proactively and improving stakeholder engagement.

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