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LEGAL PERSPECTIVE ON THE USE OF ARTIFICIAL INTELLIGENCE IN CORPORATE GOVERNANCE IN NIGERIA: POTENTIALS AND CHALLENGES

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Abstract: From a legal standpoint, this paper critically examines the potential and challenges in deploying Artificial (AI) Intelligence in corporate governance in Nigeria. The examination revealed that leveraging AI in corporate governance could enhance corporate efficiency in Nigeria through improved decision-making, risk management, financial reporting, and stakeholder protection and engagement. However, possible bias and data privacy breaches are significant risks that pose ethical challenges when AI is deployed in corporate governance. Particularly, Nigeria is bisected by several socio-economic challenges, such as a lack of a robust AI framework and insufficient technological expertise to develop and optimize AI systems. Furthermore, Nigeria currently lacks comprehensive national AI legislation, thereby resulting in the absence of a legal basis for the effective deployment of AI in corporate governance and board management. Against this backdrop, this paper proposes an AI-based corporate governance framework, which can be adapted into future legislative reforms to streamline decision-making processes and improve board accountability and stakeholders' protection in companies. Overall, it argues that AI legislation and policies are vital to the success of efforts to implement AI-based corporate governance in Nigeria.

Keywords: Corporate Governance; Artificial Intelligence; Company law; Legal Framework; Nigeria.

1. Introduction

Corporate governance is the system by which companies are directed and controlled (Orihara & Eshraghi, 2022). It involves a process whereby a set of rules, guidelines, and controls are prescribed for key organs of companies to ensure overall corporate efficiency and growth (Orihara & Eshraghi, 2022). In line with this, it is postulated that the main objective of corporate governance is to improve the performance and

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accountability of the board of directors towards shareholders and the company as a whole (Caixe, 2021). More recently, the consensus amongst scholars is that Artificial Intelligence (AI) could enhance corporate governance and bolster efficient decision-making in corporations, thereby improving services rendered to customers, stakeholders, and investors (Petrin, 2024; Oriola & Edem, 2024).

AI is a machine or computer system that imitates human cognitive abilities and behaviors (Kok, Boers, Kosters, Putten & Poel, 2009). In recent times, particularly after the COVID-19 pandemic, AI has been deployed extensively by advanced nations as a tool to augment and enhance human decision-making in organizations and to foster the overall accuracy of services rendered. In China, for instance, AI is applied in various industries to enhance user services and improve business efficiency. For example, in 2014, Hong Kong developed the Validating Investment Tool for Advancing Life Science (VITAL), a computer program (algorithm) that supports the board of directors in decision-making in venture companies (Groome, 2014). This is achieved by using machine learning to evaluate financial trajectories in the database of corporations and to predict successful investment plans (Groome, 2014).

In Nigeria, the general application of AI in various sectors and organizations has been stagnant: particularly, AI is scarcely utilized in the corporate environment (Upkong, 2022). However, AI is gradually gaining traction within the financial market; albeit, its application is limited to mostly credit risk management within commercial banks (Ukpong, 2022). The application of AI in corporate governance, particularly in decision-making within the board of corporations has long been neglected despite its supposed benefits in streamlining governance and management. In Nigeria, legislation such as the Technology Acquisition and Promotion Act 2004 (NOTAP Act 2004) exists to facilitate the transfer and acquisition of foreign technologies and to promote locally sourced technological innovation. However, there is currently no prescribed legislation delineating provisions on the utilization and integration of AI in corporate governance processes in Nigeria. The Nigerian Companies and Allied Matters Act 2020 (CAMA 2020), which is the primary statute governing companies in Nigeria is also silent on the use of AI in corporate governance. The implication of this is that companies are not legally mandated to develop strategies that would promote AI utilization in corporate operations and board management.

AI systems pertaining to corporate governance are generally grouped into three categories: Assisted AI, Amplified AI, and Autonomous AI. Assisted AI is intended to support decision-making by completing simple tasks assigned by human beings. On the other hand, amplified AI can make joint- decisions with humans and have similar implications on the decision (Hilb, 2020). Finally, autonomous AI is developed with a more complex and advanced algorithm that enables it to proffer an independent decision and marginalize human decision-making (Hilb, 2020). From a corporate governance perception, it is argued that AI could enhance the board of directors' decision-making processes, most especially in situations of uncertainty (Hilb, 2020). The use of AI in businesses and companies could enhance customer services, boost sales, improve supply chains, and relieve workers from mundane undertakings. Against this background, this article critically examines the potentials and challenges in utilizing AI in based corporate governance in Nigeria.

This paper is structured as follows: the first section is dedicated to expounding on the concept and fundamental principles of corporate governance while delineating the legal basis of corporations. It proceeds by examining different approaches to AI utilization in order to shed light on the exact parameters and concepts of AI technology. The third section considers how AI can be leveraged to enhance corporate efficiency by highlighting the significance of AI in corporate governance processes. The fourth section considers global initiatives and legislative approaches adopted to implement AI in corporate governance, including the Nigerian legal landscape. It argues that Nigeria's lack of robust AI legislation hinders the effective implementation of AI-based corporate governance. Consequently, the sixth section is devoted to proposing and theorizing a workable AI-corporate governance framework for Nigeria that can be adapted into future legislative reforms. It concludes by presenting the potential and challenges in implementing AI-based corporate governance in Nigeria.

1.1 Importance and Objective of Research

AI has a transformative potential to reshape the corporate landscape, and directors play a pivotal role in implementing and harnessing technological advancements while maintaining ethical standards and values. AI technology can improve traditional governance mechanisms, enabling more effective risk management, improved decision-making, and enhanced stakeholder protection and regulatory compliance. The importance of this paper stems from the fact that it seeks to explore the potential of integrating AI in the governance of companies in Nigeria from a legal standpoint while also highlighting the possible challenges in terms of legal and ethical perceptions. While several researchers have indicated the positive implications of AI in corporate governance, practical and legal implementation of approaches in AI governance are yet to be considered within the Nigerian context. This paper fills this vacuum by proposing a workable framework that would facilitate the integration of AI into the Nigerian corporate governance sphere. In this regard, it is argued that leveraging AI in corporate governance can bolster corporate efficiency and secure a competitive edge for Nigeria within the global market.

1.2 Methodology and Scope

This paper adopts a doctrinal/library-based methodology and comparative law approach. The library-based methodology is the most predominant approach in legal research; it involves the collation and in-depth analysis of legal doctrines, existing laws, secondary data, opinions, and judicial decisions in order to gain insight into contemporary legal problems and explore necessary solutions. In this regard, library-based research is utilized to adequately capture and evaluate academic literature, legislation, and secondary sources on the potential and constraints of applying AI in corporate governance in Nigeria. Against this backdrop, this research will be premised on both primary and secondary sources of law in the area of AI and corporate governance, such as case law, textbooks, journal articles, international laws, and online sources.

The comparative law aspect of this research is utilized to juxtapose the Nigerian legal regime on corporate governance and AI with other jurisdictions such as the United Kingdom, the European Union, the United States, and other African countries. The essence of this is to highlight similarities and differences in the approaches to AI-corporate governance as adopted in various countries and to further ascertain the progress made so far in Nigeria in terms of conforming with global standards. Given this, the research investigates how AI can be adapted to enhance corporate governance mechanisms in Nigeria, particularly in the area of board accountability, stakeholder protection, transparency, decision-making processes, and risk management.

2. Concept of Corporation and Corporate Governance: Legal Considerations

The legal ramification of incorporation is that once a company is registered, it acquires a legal personality, which is separate from its members (i.e. shareholders) (*Salomon v Salomon*, 1896 UKHL 1; *Foss v Harbortle,* 1843 2 Hare 461). This entails that the company is viewed as a legal person and akin to a natural person, it can enter into a contract, own properties, sue, and be sued in its name in legal proceedings (Hannigan, 2021). This feature is succinctly encapsulated in section 42 of the Nigerian CAMA 2020, which provides that a company acquires a separate and distinct personality upon incorporation. The Nigerian Supreme Court made it abundantly clear that 'an incorporated company is a separate legal entity, which must fulfill its own obligations under the law' (*Marina Nominees Ltd v. F.B.I.R,* 1986 2 NWLR (PT.20) 48.). Furthermore, the effect of incorporation is that shareholders' liability is limited to what they invest; therefore, creditors are generally barred from claiming against the personal assets of the shareholders where the company is in debt

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or insolvent (Hannigan, 2021). Another striking feature of a corporation is that while it enjoys a distinct legal personality, it nonetheless acts through the board of directors who are appointed by shareholders to manage the company (Hannigan, 2021). Consequently, important decision-making is carried out by individual directors on behalf of the company and its shareholders. In this regard, the corporation is merely a symbol and conglomerate of various stakeholders with distinct and sometimes conflicting interests (Hannigan, 2021).

One of the effects of modern corporate structure is that ownership of companies and control (i.e., management) are separate. In large corporations, shareholders as providers of capital are said to own the company (Hannigan, 2021). Meanwhile, management of the said company rests primarily with the board of directors, who steer the company and make major decisions. (Hannigan, 2021). A common problem emanating from this arrangement as it pertains to corporate governance is the "agency problem," which is essentially a conflict of interest between the shareholders and management of corporations (Berle & Means, 1932). The agency problem was succinctly postulated by Berle and Means in the 1930s in their seminal work, where they explained that the issue with the separation of ownership from control is that it can sometimes entice management to embezzle corporate assets or misappropriate corporate opportunities rather than maximizing the interests of the shareholders (Berle & Means, 1932). Adam Smith had earlier in the eighteenth century captured this problem when he submitted that 'since directors are charged with the responsibility of managing others' money, rather than their own, they are unlikely to watch over the wealth of others with the same prudence as they would if watching their own wealth' (Smith, 1776). In essence, there is a higher propensity that directors could take undue advantage of their position to pursue interests that conflict with the interests of the shareholders.

From the foregoing, the purpose of corporate governance is simply to curtail the agency problem and to ensure that corporations are managed for the collective interests of the shareholders and the company as a whole while averting insider abuse and fraud by management (Gillian, 2006). Insider abuses have been evident in the corporate collapses of prominent companies such as Enron in the United States and Cadbury Nigeria Plc in Nigeria. In these companies, it was observed that the managing directors were involved in the overstatement of their respective corporate accounts and embezzlement of companies' funds (Akinpelu, 2011). Corporate governance stipulates guidelines and rules for the control and direction of the internal affairs of companies and particularly regulates the relationship between the board of directors and shareholders (Timbalari, Neagoa & Cristian, 2024). The early conception of the aim of corporate governance is premised on the idea that the board of directors should discharge their duties solely to advance the interest of the shareholders alone: shareholders' wellbeing is paramount (*Aberden Rly Co. v Blaike Bros,* 1854 1 Macq 461). This view has been generally criticized for being too narrow, as it excludes the interests of other non-shareholder constituencies (Crowther & Jatana, 2005). On this basis, it is argued that this narrow approach encourages directors to focus on taking unreasonable risks for short-term profits and maximization of shareholders' interests, thereby neglecting the long-term growth of the company (William, 2009). A more suitable and modern conception of corporate governance, which resonates with the views of this article, is that corporations are to be managed for the overall interest of stakeholders, including customers, employees, suppliers, and the community as a whole, as the success of corporations depends on the collective efforts of all stakeholders alike (*Herald Co. V Seawell,* 1972 472 F.2d 1081 (10th Cir.). In view of this, it is postulated that corporations also owe a social duty to the wider community and should ensure that their activities do not negatively affect the environment in which they operate (Ugbor, Inyiama, Omodero, & Inyiama, 2021).

Fundamental Principles of Corporate Governance in Nigeria

As deduced above, corporate governance aims to ensure that the board of directors is accountable to shareholders and that corporations are managed in a manner that is transparent and sustainable in the long run for shareholders and stakeholders alike. Premised on this objective, the Financial Reporting Council's Nigerian Code of Corporate Governance 2018 (FRC Code 2018), in congruence with CAMA 2020, has prescribed core corporate governance principles to be followed by companies. These principles have a profound impact on AI governance as they are intended to promote corporate values and ethical practices that would improve the integrity of the corporate environment. These key principles of corporate governance as enshrined in the code include:

1. Board Accountability and Transparency: Accountability is the central pillar of corporate governance and ensures that the board is answerable for its decisions and actions. According to the FRC Code 2018, the board is responsible for overseeing the activities and management of the company and ensuring that the company is run in the interest of all stakeholders. In this regard, it is required that the board should be accountable to shareholders and stakeholders and ensure that timely and clear information about the activities, finances, and risks of the company is afforded to the stakeholders timeously. (See Part A of FRC Code 2018). These principles are hinged on the fiduciary duty of loyalty as prescribed by CAMA 2020 in section 305, which requires directors to

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observe utmost good faith towards the company and act in the best interest of the company as a whole. It is posited that the use of AI will enhance accountability by providing fast, accurate, and unbiased information to shareholders thereby avoiding any conflict of interest between shareholders and directors (Hilb, 2020).

2. Risk Management: In line with principle 17 of the FRC Code 2018, the board is also required to establish risk management strategies that would identify, monitor, manage, and minimize key business risks in order to safeguard shareholders' investments and companies' assets. This is in line with section 377 of the CAMA 2020, which mandates companies to prepare financial statements that include a statement of source and application of funds and a profit and loss account to highlight risks involving the company. AI-powered systems can play a key role in risk management by constantly monitoring and evaluating large amounts of data including financial data, and market trends in order to identify potentially fraudulent activities and risks (Mertens, 2023).
3. Shareholders' Protection and Interest: The corporate governance framework under the FRC Code 2018 also guarantees the protection of shareholders' interests by providing them with platforms at general meetings to exercise their ownership rights and express their views on various areas (see Principle 21, FRC Code 2018). This principle further ensures that shareholders are treated fairly and equitably, with a particular focus on protecting minority shareholders from unfair and oppressive conduct perpetrated by the company and its directors (see Chapter 23 of the CAMA 2020). There is a view that by leveraging AI-powered technology, the agency conflict between directors and shareholders will not necessarily occur because AI deployment would translate to greater shareholder supremacy and protections, as the fiduciary duty of care and loyalty will hardly be breached by AI algorithms (Mertens 2023).
4. Stakeholders engagement: In line with principle 27 of the FRC Code 2018, the board is mandated to establish a stakeholder management and communication policy that ensures that reports and other material information about the company and other communication are made available on companies' websites in clear and easy-to-understand language. By deploying AI systems via chatbots and social media, virtual meetings, and data analytics, the board of directors is considered to have a more robust and direct platform of communication with

stakeholders (Oriola & Edem, 2024). With real-time information and data, stakeholders would be better equipped with the right information to make informed investment decisions timeously.

3. Understanding AI Concepts and Approaches

Since AI is a vital concept of this paper, a lucid description of its meaning and nature is apposite to expedite the development of theories and arguments in the subsequent sections. This would include adequately appreciating the role of AI in corporate governance, and the nature of AI technologies in terms of data processing, analysis, and execution of commands. AI generally is used to enhance user services, increase feasibility and efficiency, maximize profits, bolster cybersecurity, and enhance existing products while recommending ways to new products (Shen, 2020). The nature of AI is dependent on its configuration in terms of the tasks it is programmed to execute and the manner in which the task can be executed. Generally, AI, as machines, are equipped with learning abilities that enable them to learn and reach conclusions based on a set of data and learning algorithms (Hilb, 2020). This is called machine learning (ML). Earlier stages of ML still required humans to manually extract results and data from analyses carried out by machines or computers. However, more recently, ML now relies on a deep learning (DL) approach, which involves multi-layered artificial neural network – software that relatively imitates the way the neurons in the brain function (Ford, 2018; Hilb, 2020). DL approach is further classified into three categories namely: supervised (SL), reinforcement (RL), and unsupervised learning (UL). Hilb described SL as a process whereby well-organized and marked data is utilized to teach the algorithms to enhance AI-driven software such as image translation and recognition (Hilb 2020). This method is considered the most popular, yet less sophisticated form of AI; humans are still predominantly the decision makers as the data inputted on the computer is intended to assist humans in simple data processing such as image processing (Amour & Eidenmueller, 2019).
On the other hand, RL applies methods such as 'trial and error' in simulated computer games such as board games. The downside of the RL is that it requires large amounts of trial rounds and repetitive simulations to attain a reliable outcome (Hilb, 2020). This is surely a time-consuming and costly process. A more favorable yet complex approach is the UL, which relies on algorithms that are assigned to AI systems to learn directly from unstructured data found within their environment (Ford, 2018). A common weakness shared by all these approaches is that none has been able to successfully attain a connection between machines and the human mind, whereby both can work seamlessly together to execute certain tasks. As a result, Marsh has predicted that the next stage of AI would be the emergence of

'neuromorphic chips' that would enable the linking of minds to machines (Marsh, 2019). This article is solely concerned with how deep learning-equipped AI can be utilized to assist corporations in corporate governance processes and decision-making by the board of directors.

4. AI as an Effective Corporate Governance Tool: Significance and Limitations

In the 1960s, AI was merely seen as a tool for executing commands and not for making decisions (Drucker, 1967). More recently, many business leaders have subscribed to the idea of including AI in the management of their businesses which involves joint decision-making by business managers and machines, and at times machines making independent decisions. As Hilb and Mantas rightly remarked, AI is now widely considered as a general solution for commercial, managerial, and even societal problems (Mantas, 2019; Hilb, 2020). The importance of AI stems from the fact that AI-integrated computers can identify patterns, and predict trends and solutions, thereby allowing the board of directors of companies to make informed decisions and distribute resources more efficiently (Mohanty, 2023). In terms of environmental and social Governance (ESG) Mohanty, enumerated various ways in which AI integration in corporate governance can enhance the long-term sustainability of corporations: AI can predict energy demands and recommend the right energy mix, thereby cutting down reliance on fossil fuels and reducing carbon emissions; AI can evaluate data on environmental changes, and assist the corporation in making informed decisions about the effect of their activities on the environment; lastly, AI can also observe environmental regulatory changes and analyze the potential risks and liabilities relating to non-compliance (Mohanty, 2023). Overall, by relying on AI for sustainability, corporations would not only minimize the negative environmental impact of their activities but would also improve their social responsibility and reputation, thereby attracting socially responsible investors. Furthermore, using AI in decision-making can assist the board of directors in offering simulated scenario analysis, risk evaluation, and development of strategies that could enhance the quality of decisions.

AIs are not without limitations. One of the commonly cited shortcomings with AI governance in corporations is that it can propagate partialities concerning the data they rely on, thereby engendering discriminatory outcomes (Mohanty, 2023). Inaccurate, and biased data may negatively impact the process of investment revenue, which is essentially important for corporations with noticeable investments. Furthermore, there is also the issue of misalignment of objectives, which is closely related to the agency problem which as highlighted above is a central problem in corporate governance. The consensus among AI scholars is that super-intelligent AI might possess principles and objectives that are not compatible with the well-being of human beings (Tallarita, 2023). AI can be programmed to fulfill socially desirable objectives but the algorithm in the program may not always be able to exclude the AI from acting in ways that are incompatible with human values (Tallarita, 2023). This is similar to corporations where investors or shareholders may enumerate rules to possible situations to enable managers to act in their best interests but may not be able to contemplate all the possible circumstances for all the possible rules. Although incentives such as the awarding of stock options are utilized to align the interest of managers with that of investors, this does not eliminate the agency problem; it only mitigates it (Tallarita, 2023). The author believes and as is widely accepted by many scholars that to tackle issues of AI bias and inaccurate data, AI systems and algorithms should be extensively tested and adapted over time to improve their accuracy before deployment (Hilb, 2020; Tallarita, 2023; Mohanty, 2023).

5. Legislative Approaches to AI in Corporate Governance: Global Initiatives

At present, corporate law is not yet adapted to the concept of autonomous AI corporate governance, as corporations are hinged on human decision-making (Mertens 2023). The concept of corporation and separate personality as delineated above, suggests that corporations are run by management, which is made up of human directors and not 'robot directors' (Mertens 2023). On this premise, most countries' company laws presume that only natural and/or legal persons may be appointed as directors, which essentially excludes AI. For example, section 155(1) of the UK Companies Act 2006 and section 269 of the Nigerian CAMA 2020 require that companies must have at least one director, one of which must be a natural person. This allows for a mixture of both legal and natural persons which invariably excludes AI from being on the board. Likewise, in section 6(2) of the German Gesellschaft Mit Beschränkter Haftung (GmbHG) only natural persons are allowed on the board. The implication is that AI intelligence is excluded from participating on the board of directors of companies in Germany.

Some jurisdictions have however established legislations and judicial platforms that somewhat encourage limited integration or use of AI in corporations. Delaware case law for instance has earlier endorsed the integration of AI in corporations by promoting a potential duty of AI delegation as a reasonable utilization of formal monitoring systems in corporate governance, which has been interpreted by the courts to emerge from the duty of loyalty (see *Marchand v. Barnhill* 2018 Del. Ch. Lexis 316; *Re Caremark International Inc. Derivative Litigation*, 1996 Del. Ch. 698 A.2d, 959). Furthermore, Delaware law also appears receptive to the idea of a director's reliance on the opinions obtained from AI systems (Bruner, 2021). In this regard, Code 8, § 141(e) of the Delaware General Corporation Law (DGLC) does protect directors against liability for reasonably and genuinely relying on expert opinions of third parties, and it is conceivable that this may also include opinions and reports obtained from AI systems (Bruner, 2021).

Within the European Union (EU), AI-based corporate governance has gained greater momentum as EY-Study ordered by the European Commission claimed that 13% of the respondents (i.e. EU companies) have deployed AI-based governance with an additional 26% planning to adopt shortly (EY, European Commission, 2021). This momentum is further buttressed by the recently enacted EU Artificial Intelligence Act 2024 (EUAI ACT 2024), which has a significant impact on corporate governance. The Act is intended to take effect in 2026 and requires companies that plan to deploy AI to reevaluate their governance structure and implement AI systems that ensure transparency, accountability, and sound risk management (Retief, 2024). To this effect, companies utilizing AI systems will need to ensure transparency and accountability in decision-making processes; senior managers will need to incorporate AI risk management tools into their governance structures and ensure that potential risks associated with AI systems, such as bias, are identified and mitigated. (Retief, 2024). Thus, in terms of liability, companies could face legal liability under the EUAI Act 2024 for AI-related matters. This makes it necessary for corporate managers to implement mechanisms for addressing legal challenges arising from AI applications including liability arising from dispute resolution processes and insurance (Retief, 2024).

Due to AI's current lack of a legal personality or individuality, the application of AI algorithms in corporate governance, particularly in the context of decision-making on the board of directors, raises interesting legal issues pertaining to corporate liability. In this regard, it is argued that it would be difficult to hold AI systems accountable financially and physically due to AI's lack of financial possession and personality (Petrin, 2024). Thus, if AI autonomous managers in corporations are developed, it is feared that claims could not be brought against them personally as their personal identity could not be established (Petrin, 2024). This is particularly true within the Nigerian context because by virtue of section 269 of the Nigerian CAMA 2020, a director of a company must be a natural person. By implication, AI systems cannot be granted legal personality in Nigeria and, as such, be held liable for breaches of fiduciary duty, which is crucial to corporate governance accountability. However, it is postulated that AI entities could operate in the form of existing legal entities or Artificial Entities (AE), such as companies, thereby making it easy to extend liability to the company as a whole (LoPucki, 2018). There is also the possibility that liability can be attributed to the source of AI design or control (Armour & Eidenmüller, 2020). For this reason, it is postulated that liability would be borne by those responsible for programming or, implementing and controlling the AI system, such as directors of the corporation; this requires that AI systems would not operate autonomously without the input of humans (Petrin, 2024).

6. Landscape of AI Application in Nigeria: An Overview

Generally, the pace of development of AI in Nigeria has been slow due to the lack of national AI policies. Nonetheless, some efforts have been made by the Nigerian government to promote the use of AI generally by establishing institutions intended to bolster the adoption and integration of AI strategies in order to improve lives and foster economic growth. For instance, in pioneering AI advancement, the National Council for Artificial Intelligence and Robotics (NCAIR) was established as an innovative institution saddled with the responsibility of carrying out research and understanding the application of emerging technologies like AI, deep learning, and augmented realities, robotics and internet of things (National Office For Artificial Intelligence and Robotic). Although Nigeria lacks a formalized national AI law, the NCAIR plays a major role in AI development by promoting cutting-edge research into AI adoption and application and assessing the implications of various facets of AI utilization in the country (Uba, 2023).

In 2004, the government also enacted the Technology Acquisition and Promotion Act 2004 (NOTAP Act 2004), which establishes the National Office for Technology Acquisition and Promotion Commission (NOTAPC) as the body responsible for administering newly acquired and developed technologies in the country. According to sections 5 and 6 of the NOTAP Act 2004, the primary functions of the commission are to facilitate the transfer and acquisition of foreign technology and the promotion of locally sourced technological innovation. In light of this, the federal government on the 3rd of April of 2024 further disclosed plans to enlist 120 researchers, and experts in AI to develop and implement a coherent AI framework in the country (Okamgba, 2024). The Nigerian Minister of Communication, Bosun Tijani remarked that this is in line with the government's objective to revolutionize the economy and improve public services through AI applications and adoptions (Okamgba, 2024). It is posited therefore that when governance deteriorates in Nigeria, it impacts negatively on businesses and investors' motivations and confidence, thereby eroding market and corporate structures (Aberu, 2023).

To safeguard against data breaches in AI deployment, the Nigerian Data Protection Act 2023 (NDP Act 2023) was also enacted to ensure that sectors in use of AI for processing of data do so in a manner that does not compromise personal data or cause data breaches while ensuring confidentiality (NDP ACT 2023, section 24). The effect of this on companies utilizing AI is that they must ensure that the consent of the owners of personal data ("data subjects") is obtained; establish data protection

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and privacy policies, and regularly audit data protection practices through a data protection compliance organization (Timi-Koleolu & Atanda, 2023). The aim of this in AI utilization is to ensure that data manipulation and breaches are prevented while offering a safe legal framework for the exchange of electronic data.

Lack of AI Legislation on Corporate Governance in Nigeria

From the foregoing, it is clear that Nigeria like most other jurisdictions lacks comprehensive national AI legislation, which is specifically tailored to foster the use and deployment of AI in corporate governance. In effect, companies are not legally motivated or mandated to develop strategies or policies to promote AI utilization in corporate board management. The abovementioned NCAIR and NOTAP Act 2004 are indeed laudable developments, although inadequate to usher in a national AI framework or guideline to bolster AI application in Nigerian companies. From a corporate governance standpoint, the lack of an AI-based framework has somewhat stifled the application of AI technologies in corporations as there is a general notion that AI is rarely applied in Nigerian corporations or utilized by the board (Obianyo & Ater, 2022). It becomes imperative and as one of the objectives of this paper to propose and theorize a framework that would facilitate the utilization of AI in corporate governance in Nigeria, as a catalyst for corporate efficiency. The subsequent section is dedicated to dealing with this task.

7. Recommended Framework for the Use of AI in Corporate Governance in Nigeria

It is posited that a comprehensive AI-based corporate governance framework must address various key aspects such as board composition, shareholders' and stakeholders' protection, accountability, and transparency (Correia & Agua, 2023). The proposed framework in Nigeria must therefore accommodate statutory provisions and guidelines on how to incorporate AI into these different areas in a manner that would address transparency issues and in particular, address the problems of potential bias in AI systems. Firstly, this would require the introduction of specific legal mechanisms to tackle issues such as data privacy, fairness, and protection from discrimination due to AI bias. To achieve this, there is the need to encourage local content, and AI research development and production of AI systems. Currently, there is a dearth of knowledge and skills in AI optimization and research in Nigeria (Obianyo & Ater, 2022). Therefore, an ideal framework would ensure the availability of platforms that would promote rigorous AI development, optimization, testing, and application. This would also minimize the risks of AI bias and discrimination. Particularly, in terms of corporate governance, it is suggested by the author that a suitable framework should first incorporate laws and policies that would promote board accountability, stakeholder protection, transparency, and long-term corporate sustainability while ensuring that it is flexible to different forms of companies.

In terms of board structure, the recommended framework suggests the utilization of AI algorithms to improve decision-making and monitoring. In this regard, machine learning algorithms can be used to evaluate huge volumes of data relating to board decision-making, thereby improving the efficiency and accuracy of decision-making processes in the company (Yoo, Boland, Lyytinen & Majchrzak, 2018). Additionally, there should be provisions enabling AI to design and implement performance-oriented compensation structures for the board of directors. This will require the application of machine learning algorithms to predict the effect of various compensation schemes on board performance, thereby facilitating more efficient and informed remuneration decisions (Goodfellow, Bengio & Courville, 2016).

In relation to shareholders' interests and value, it is proposed that an ideal framework should allow AI to be used as a tool to evaluate shareholders' feedback and voting style, which will invariably provide a useful perception of shareholder preferences and opinions (Correia & Agua, 2023). The importance of this is to enhance shareholders' engagement and participation while informing the board on how to satisfy the interests of the former. For instance, utilizing AI algorithms to analyze voting patterns could enable the board of directors to predict the outcome of the shareholders' voting process and its intended implications on the financial state and future of the company.

Given that accountability is an integral aspect of corporate governance, it is proposed that deploying AI could also enhance board accountability by incorporating advanced software to monitor and keep track of the decision-making processes and results in the boardroom. With the help of policy backing, this would require companies to have up-to-date AI strategies or software in response to evolutions in business and regulatory climes. In this regard, advanced AI algorithms could also detect and notify shareholders of any misconduct or unethical behavior, which would ultimately enhance transparency, corporate reporting, and disclosure.

Another pivotal aspect of this proposed framework is ensuring the participation of corporate actors in the implementation of AI policies. It is understood that a proper AI corporate governance framework requires the input of companies' actors, such as management, in order to ensure better implementation and integration (Cihon, Schuett & Baum, 2022). For instance, management is said to be an important actor in implementing corporate governance strategies. Management is responsible for introducing policies, incorporating processes, and creating systems that have significant implications for AI development. In this regard, one of the ways in which

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management can promote AI in Nigeria is to introduce corporate policies, guidelines, and strategic objectives geared towards promoting AI application and development. More recently, companies such as Google, IBM, Microsoft, and OpenAI have introduced AI ethics guidelines that stipulate how the corporation should apply and develop AI and similar technologies (Jobin, Lenca & Vayena, 2019). Furthermore, in line with OpenAI's policies to advance AI utilization, the GPT-2 language model was released in 2019 in phases over concerns of possible harmful application. The introduction of GPT-2 is a clear demonstration of how management can transform AI policies into reality by taking positive steps in assembling teams of AI experts in the development of AI languages. Therefore, the challenge in implementing a working AI Corporate Governance framework in Nigeria would be to translate AI policies into AI practice. A further challenge is the constant and timely review of AI applications, which is integral in ensuring safety and security in AI uses. For instance, when the first version of GPT-2 was considered potentially harmful, OpenAI immediately assembled a team of experts to review and evaluate the social impacts of previous versions before releasing more refined versions of GPT-2 (Cihon, Schett & Baum, 2022).

It is postulated that without AI-based legislation in Nigeria, corporations would lack the legal basis to implement AI strategies and objectives that would bolster their corporate governance structures (Timi-Koleolu & Atanda, 2023). Therefore, from a legal standpoint, it is recommended that Nigeria needs to enact AI-related legislation or regulations that would stipulate provisions enabling a seamless implementation of AI-based governance across the country. In this regard, the legislation/ regulation should be specifically tailored to corporate governance principles and should be industry-specific so as to avoid a 'one-size-fits-all' approach of regulation, which involves enacting a single piece of regulation to cater to different sectors or circumstances in a polity (Nedelchev, 2013). 'One-size-fits-all' approach is generally criticized to be inflexible and usually leads to difficulties in implementation and enforcement (Nedelchev, 2013).

8. Potential and Challenges in Utilizing AI in Corporate Governance in Nigeria

8.1. Potential: Improved Corporate Efficiency, Risk Management and Decision-Making.

According to Emejor, one of the key benefits of AI application within the Nigerian public sector is that AI advanced algorithms and its fast data analysis capabilities have the potential to streamline decision-making processes and analyze vast amounts of data expeditiously and accurately (Emejor, 2023). This translates to overall efficiency while saving ample time for corporate investors and managers. To buttress this point, Ukpong enumerated some of the prospects of AI application within Nigerian financial companies in terms of credit risk management as follows: by utilizing AI in credit risk management, banks can predict the likelihood of lenders defaulting by relying on both traditional and alternative data sources (Ukpong, 2022). Generally, the idea of credit risk entails the possibility of a lender defaulting on the repayment of a loan extended by banks or financial companies. Thus, by using AI algorithms to query borrowers' finances and credit history, the banks are provided with appropriate insight to decide whether to extend the loan or to avoid extending the loan altogether. Concerning credit decision-making, AI provides a faster and more specific analysis at a reduced cost, using larger numbers of factors, thereby leading to a data-backed and better-informed decision. As opposed to a human, it is noted that AI decision on credit risk is less likely to be partial because machine learning algorithms rely on broad and quick evaluation of credit statuses and history of potential lenders and single out the most eligible lender, using accurate and reliable data (Ukpong, 2022).

In the context of corporate governance, AI would develop a better and faster understanding of the nature of a company's business, predict potentially lucrative and high-risk investments using sophisticated algorithms, and thereby identify areas for the company to concentrate on in terms of future investments (Bruner, 2021). Furthermore, with AI algorithms, companies can also understand customers and their behaviors, and therefore enable the board to customize services and products for targeted consumers. As posited in previous sections of this paper, the integration of AI in corporate governance has several benefits with regard to operational efficacy, improved decision-making, and risk management by analyzing data at an exponential rate with precision and accuracy. AI systems are free from human bias when implemented correctly; the issue of conflict of interests between managers and shareholder is greatly minimized. The most essential consideration as recommended above is the enactment of comprehensive legislation in Nigeria, that would adequately tackle the use and deployment of AI in corporate governance.

Bruner succinctly captured some fundamental benefits of AI in corporate governance when he stated that in utilizing AI machine and deep learning capabilities, enormous data sets can be extracted swiftly in service of practical corporate tasks, in the form of strategy settings and risk management, and even compliance within a short period that human directors cannot meet (Bruner, 2021). Since this large information is processed faster and purportedly in an objective manner, there is the speculation that where autonomous AI machines can execute decisions by themselves, they can supersede human decision-makers: there is the view that AI technology might invariably replace human management entirely thereby resulting in machine led corporations (LoPucki, 2018).

8.2. Challenges: Possibility of Bias, Ethical Issues and Technological Inadequacies

Technological inadequacy and usage vacuum are generally considered some of the challenges to the successful integration of AI in most industries in Nigeria, including the corporate sector. Obianyo and Ater observed in their research into the legal framework of AI in Nigerian governance that although Nigeria is the most populous country in Africa, the application of AI in various sectors is not widespread (Obianyo & Ater, 2022). They further explained that this is due to issues such as lack of sufficient knowledge about AI, infrastructure deterioration, weak regulatory framework, and policies to promote the utilization of AI (Obianyo & Ater, 2022).

In comparison with other nations, Nigeria ranks 103 globally, which is below other African countries such as South Africa, Kenya, Egypt, Rwanda, and Mauritius in terms of AI application and usage (Oxford Insights, 2023). As highlighted above, in order to bolster AI usage, Nigeria has taken strategic initiatives in introducing NCAIR; a research facility that is aimed at promoting research and development on emerging technologies and their practical application in areas of national interest (Nigeria's National Information Technology Development Agency). Nonetheless, it is maintained that the application of AI in Nigeria is generally still in its embryonic stages and is mostly limited to credit risk management in financial institutions, fraud detection, speech and command recognition, and interpretation (Ukpong, 2022). Moreover, the application of AI in this area is said to be sparse in Nigeria (Obianyo & Ater, 2022; Timi-Koleolu & Atanda, 2023).

Despite the importance of AI, most directors of corporations are said to be oblivious to the impact and ways of application of AI in corporate governance and management in Nigeria (Obianyo & Ater, 2022). This has made it difficult to achieve a widespread application of AI in companies' essential corporate governance structure, particularly in areas of accountability, sustainability, and social governance (Obianyo & Ater, 2022). In this regard, it is recommended that executive and non-executive board members undergo technological training that would provide them with insights into the ramifications of AI for their companies and the ensuing risks that originate from the application of AI. This means that the board of directors must also introduce AI-related policies, and guidelines intended to facilitate the development, and usage of AI in line with core corporate values.

The use of AI in decision-making and corporate governance processes raises another issue relating to ethics and transparency. For example, Crawford observed that AI algorithms applied in decision-making could create partial and unfair results due to biased training data supplied to the AI systems (Crawford, 2016). Fairness issues emanate from the potential biases in AI programs, which could either favor or unfairly impact a certain group of stakeholders within the company (Crawford, 2016). Rosso observed that bias is an essential element in the human decision-making process, and this also applies to machines that mimic human behavior by depending on algorithms that may be biased (Rosso, 2018).

It is clear from this that the outcome of AI could be influenced by human-biased outlooks and errors, which could lead to inaccurate results. Furthermore, AI decisions could be vague, thereby making it difficult for board members to appreciate and explain the decision to the shareholders, and as such, undermining accountability and trust in AI systems (Castelvecchi, 2016). Issues of accountability originate from the difficulties in holding AI systems directly responsible for decisions made, particularly where the decisions have significant societal consequences (Castelvecchi, 2016). Therefore, the challenge for the board of directors and legislators is to ensure that these prejudices are recognized and efforts are taken to address them. While there is great potential in autonomous decision-making by AI, there is still a need for human oversight and input, as certain aspects of corporate affairs, such as deal-making, thrive on human interactions.

Conclusions

This article has demonstrated that the application of AI would have a positive impact on corporate governance in Nigeria in terms of streamlining decision-making processes and enhancing corporate accountability, risk management, and financial reporting. However, this potential is hindered by the lack of a formalized national AI policy or legislation in Nigeria. Consequently, there is no legal basis for companies in Nigeria to rely on to implement and effectively manage AI deployment in corporate governance. The introduction of institutions, such as NCAIR, seems inadequate to usher in a comprehensive AI-based corporate governance framework in Nigeria. In this regard, the above recommendations advocate for national AI legislation to assist companies in navigating the complexities associated with the application of AI within the corporate sphere. A suitable AI-based corporate governance framework needs to incorporate mechanisms that would promote board accountability, transparency, and stakeholders' protection, which is in line with contemporary corporate governance concepts.

Nigeria is confronted by several challenges, which include technological inadequacies, underdeveloped AI institutions, and a lack of sufficient AI-based knowledge and expertise. This paper has also highlighted some ethical and practical limitations of relying on AI for general corporate governance, which include *inter-alia* legal challenges originating from the overly complex nature of algorithmic decisions not being open to traditional explanation; AI's lack of separate personality

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in law for the purpose of apportioning liability where harm is caused by algorithmic decision; while supposedly objective, AI technologies may sometimes replicate discriminatory biases arising from deep-rooted bias data and algorithm. These concerns and issues will prompt caution and perhaps express deprecations on reliance on AI in decision-making, which could lead to heavy regulation on AI use. While total reliance on algorithm decision-making in corporate governance seems a distant prospect, there is the need for comprehensive and regular AI training and optimization of AI technology by AI- experts. This is particularly important in ensuring that issues of biased AI algorithms are swiftly addressed through system optimization and revisions. The hurdle to surmount not only involves the development of effective AI laws but also the development of sound AI institutions and specialists.

The EU AI Act 2024 is an example of an international initiative geared towards establishing mechanisms to foster the application of AI in corporate governance. Nonetheless, implementing and enforcing these mechanisms at the corporate level requires further examination, which is beyond the scope of this research. The above-proposed framework for regulating the use of AI in Nigeria shows strength. However, addressing the peculiar challenges in the use of AI in corporate governance also requires the establishment of a comprehensive and adaptable legal framework that would properly address the use and deployment of AI in Nigeria. With this, policymakers can highlight regulatory lapses and further develop strategies to improve the legal framework of AI-corporate governance in a manner that would promote responsible and ethical practices.

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