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ANNEXING ARTIFICIAL INTELLIGENCE TO THE CORPORATE GOVERNANCE OF SMALL AND MEDIUM-SCALE ENTERPRISES (SMEs) IN NIGERIA

Anthonia Ugowe*

ABSTRACT

A company's success is often rooted in its adherence to the principles of corporate governance. The major drivers of this success are usually the company boards, managers, and shareholders. These actors play a crucial role, from making quality decisions to ensuring proper management. However, in the face of the increasing use of data-driven solutions, these human actors are limited in meeting their conventional responsibilities. This has occasioned the need for the infusion of other complementary actors that will support the intelligence of human actors. This article details the significance of Artificial Intelligence (AI) in relation to corporate governance. Upon the examination and analysis of literature, the article makes a case for why companies, especially those within the corridors of Small and Medium-scale Enterprises (SMEs) need to adopt AI in virtually every area of their operations. It argues that, notwithstanding supporting arguments on the benefits of the use of AI, it is accompanied by many problems that make it discouraging to prospective users. However, it is noted that the accompanying problems can be solved through the establishment of AI regulatory frameworks. Significantly, this article acknowledges that the use of AI-powered tools in corporate establishments is not recognised by Nigerian Company laws like the Companies and Allied Matters Act (CAMA) 2020 and other enabling corporate governance codes within the Nigerian Corporate legislative frameworks. It recommends that existing company laws, corporate governance codes, and rules be overhauled to not only accommodate AI use, but also to infuse regulatory clauses where necessary.

Keywords: Artificial intelligence, SME's, Corporate Governance, Boardroom, Nigeria

1.1 INTRODUCTION

There has been a steady increase in the application of tech-based solutions in diverse areas of managerial, commercial, and societal endeavours; one tech-based solution that has gained far-reaching prominence is Artificial intelligence (AI).¹ From automating business procedures to making predictions through insights gained from data analysis, AI is fast becoming a general solutions technology, undertaking varying cognitive responsibilities. AI models are often in different forms and types. It may take the form of robotics or independent machines² and may take up varying duties like machine learning and expert systems.³

In relation to boardroom decision-making, Zhao⁴ referred to AI as the use of computers to assist, support, collaborate, or even duplicate the directors' behaviours so that the company can function competently, successfully, and with foresight in its business environment in the long term. It has been observed that even though human beings have proven to be resourceful in making decisions and general board governance, current corporate realities are widely data-inclined and pervaded by several intricacies that will require the use of external apparatuses like

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¹ Eleanore Hickman and Martin Petrin, 'Trustworthy AI and Corporate Governance: The EU's Ethics Guidelines for Trustworthy Artificial Intelligence from a Company Law Perspective' (2021) 22 European Business Organisation Law Review, 593–625.

² *ibid* - These are widely captured known as machine control systems.

³ Muzzafer Eroğlu and Melte Karatepe-Kaya, 'Impact of Artificial Intelligence on Corporate Board Diversity Policies and Regulations' (2022) 23 European Business Organisation Law Review, 541–572.

⁴ Jingchen Zhao, 'Artificial Intelligence and Corporate Decisions: Fantasy, Reality or Destiny' (2022) 71 (4) Catholic University Law Review, 666–670.

AI to optimise performance. However, concerns have been raised about privacy and data protection issues, which are notable risks associated with deploying AI algorithms. For instance, Armour and Eidenmueller⁵ posited that the deployment of AI tools often gives rise to novel oversight problems, especially in data governance, which may require a completely different regulatory framework that will address questions of corporate liability, accountability, transparency, and questions of intellectual property.

The deployment of AI algorithms also raises the fear of AI hijacking the jobs of professionals within the corporate establishment. This fear has gradually crept into some of the discussions around the downsides of utilising AI.⁶ It must, however, be stated clearly that the idea of AI was not curated to erode human jobs but to complement roles and advance efficiency within a given organisation.⁷

Corporate governance in Small and Medium-scale Enterprises (SMEs) centres on the mechanisms through which a business is governed and controlled.⁸ They are a set of structures, regulations, and rules that aim to achieve the best performance in companies by implementing appropriate, effective methods to achieve corporate objectives. Despite the prominence of corporate governance in Nigeria's business environment, SMEs are still lacking in compliance with basic corporate governance principles.⁹ Evidence shows that SMEs in Nigeria collapse within five years of establishment following issues of poor business practices, lack of technical and managerial experience, access to finance, multiple taxes and levies, and Nigeria's infrastructure deficiencies.¹⁰ Hence, the idea of using AI to transform corporate governance in SMEs has dominated contemporary discussions on the significance of using modern technologies to solve SMEs' institutional problems. Available data show that Nigeria's artificial intelligence market is estimated to hit \$877.70m at the end of 2023. Further statistics show that the AI market size is projected to depict a yearly growth of an annual growth rate of 18.97 percent, arriving at a market volume of \$2,960.00m by 2030.¹¹ In juxtaposing these statistics with obtainable market size in large economies like the United States of America, which is projected at \$87.18bn at the end of 2023, the uptake of AI in Nigeria is relatively low.¹²

It is good to note that Companies across the world are heavily investing in AI-powered systems to drive optimal performance. The New Vantage Partners' annual executive survey 2022 of leading firms showed that the use of AI-powered systems across companies is growing sporadically, with over 97.0 percent of the surveyed companies attesting to their heavy investments in widespread data initiatives and 91.0 percent investing in AI activities.¹³ The results showed that in 2022, 92.1% of the surveyed companies were realising scalable business

⁵ John Armour and Horst Eidenmueller, 'Self-driving corporations?' (2020) 10 Harvard Business Law Review, 88–116.

⁶ Kaya Baran, 'The Role of Artificial Intelligence in Corporate Governance' (2022) <<https://ssrn.com/abstract=4143846> or <http://dx.doi.org/10.2139/ssrn.4143846>> accessed 20 June 2025.

⁷ Ayobami Elegunde and Reuben Osagie, 'Artificial intelligence adoption and employee performance in the Nigerian banking industry' (2020) 4 (8) International Journal of Management and Administration 189–205.

⁸ Peterson Ozili, 'Corporate governance research in Nigeria: a review' (2020) 1 (1) SN Business & Economics, 17.

⁹ Anthonia Ugowe, 'Corporate Governance as a Transformation Tool in Sustaining Nigeria's Small and Medium-Sized Enterprises (SMEs)' (Ph.D. Thesis, University of Dundee, 2020).

¹⁰ *ibid.*

¹¹ Statista, 'Artificial Intelligence- Nigeria' (2023) <<https://www.statista.com/outlook/tmo/artificial-intelligence/nigeria#market-size>> accessed 20 June 2025.

¹² *ibid.*

¹³ Businesswire, 'Business New Vantage Partners Releases 2020 Big Data and AI Executive Survey' (2022) <<https://www.businesswire.com/news/home/20220103005036/en/NewVantage-Partners-Releases-2022-Data-And-AI-Executive-Survey>> accessed 21 June 2025.

benefits, with 48.4% in 2017 and 70.3% in 2020.¹⁴ It is projected that AI will contribute a total of \$15.7 trillion to global economic growth by 2030, judging from the current pace. However, the survey reported that they had not achieved success in the bid to establish a data-driven leadership. It was reported that the subject of data-driven leadership is still very much an elusive concept. A total of 47.7% of the survey respondents replied that they were competing on data and analytics; only 39.7% reported that they were managing data as an enterprise business asset; barely over a quarter – 26.5% -- reported that they have created a data-driven organisation, and just 19.3% indicated that they have established a data culture.¹⁵

Xiuli et al¹⁶ observed that AI has become increasingly prominent in company management, with significant dominance in the area of operations.¹⁷ Nevertheless, AI's application to company management, centrally in the area of corporate governance is relatively novel, this is because early discussions in the application of AI to companies were fundamentally in the area of production processes, making AI a technically focused subject, conversely, current realities show that AI is also inclined to governance and management.¹⁸

Notwithstanding these discussions and the growing popularity of AI tools, it would appear that Nigerian SMEs are yet to key into the AI regime, even worrisome is the dearth of enabling legal frameworks to guide companies in the adoption of AI tools in their daily operations. In a study carried out by Arachie, Dibua, and Idigo,¹⁹ 27546 businesses within the SMEs category that was registered under the Cooperate Affairs Commission (CAC) were assessed, the results showed that a large chunk of SMEs in Nigeria still operates manually. As such, they are bereft of the many potential benefits of AI deployment and so, continue to be small in size.

The discussions in this article are severed into six sections. Section 1.1 features the introduction, giving a sense of the subject of AI and corporate governance, it highlights credible statistics on the uptake of AI and Data-driven concepts in organisations worldwide. Thus, highlighting the article's desire to relate AI to SMEs in Nigeria. Section 1.2 details a broader overview of AI and its importance in promoting best practices of corporate governance, it notes some of the companies that have already infused AI into their corporate governance regime, and it presents the perspectives of some researchers on how AI is redefining not only corporate governance but general corporate performance. This section does so with a view of relating AI to the corporate governance of SMEs. Section 1.3 discusses the roles played by AI in the boardroom of some companies. It presents some scholarly and expert views on this discussion. Section 1.4 makes a case for the legal status of AI and the issue of liability as it relates to the contributory and participatory roles of AI in corporate governance. Section 1.5 highlights some of the prevalent challenges in the adoption of AI by companies. It notes that even though the application of AI comes with numerous benefits when applied to corporate governance, the challenges outlined should be given conscious consideration before the application of AI in companies, especially SMEs. Section 1.6 contains the recommendations and the conclusion of the article.

¹⁴ *ibid.*

¹⁵ *ibid.*

¹⁶ Xiuli Cui, Bo Xu and Amma Razzaq, 'Can Application of Artificial Intelligence in Enterprises Promote the Corporate Governance?' (2022) 10 *Frontiers in Environmental Sciences*, 944467.

¹⁷ *ibid.*

¹⁸ Ehsan Elahi, Cul Weijun, Sunil Jha, and Huiming Zhang, 'Estimation of Realistic Renewable and Non-renewable Energy Use Targets for Livestock Production Systems Utilising an Artificial Neural Network Method: A Step towards Livestock Sustainability' (2019) *Energy* 183, 191-204; Ejembi Andrew, Ijeoma Amahalu, Nestor Ndubuisi and Juliet Chinyere, 'Corporate Governance and Fraud Management of Quoted Commercial Banks in Nigeria' (2022). *International Journal of Management Studies and Social Science Research*, 4 (1), 182-190.

¹⁹ Augustine Arachie, Emmanuel Dibua, and Peter Idigo, 'Artificial Intelligence as a catalyst for the Sustainability of Small and Medium Scale Businesses (SMEs) in Nigeria' (2023) *Annals of Management and Organization Research* 5 (1), 1-11.

1.2. AN OVERVIEW OF AI AND CORPORATE GOVERNANCE: SMEs IN VIEW

The question that has been repeatedly asked, given the many cognitive responsibilities undertaken by modern cutting-edge technologies like AI is can machines think? The general understanding as to who can think or who cannot has often been viewed through the lens of biological enablement.²⁰ However, recent development has proven otherwise as the use of data and algorithms are performing incredibly well in virtually every area of human endeavour.²¹ The implication of this is that AI has been perceived as attempting to replace humans.²² Away from these views, Poole & Mackworth's understanding of AI as "computational agents that act intelligently" appears workable.²³ According to the authors, AI tools are capable of transforming business operations and procedures. To put it in perspective, Davenport and Ronanki²⁴ opine that AI supports business needs by automating business processes, gaining insight through data analysis, and engaging with customers and employees. Indeed, there is an array of AI tools impacting almost every area of corporate functions, including monitoring, and information management, investor profiling, product management, and so on.²⁵ As such, there are companies already utilising AI tools in their daily business engagements even at board levels.

In 2014, Deep Knowledge Ventures, a Hong Kong company, appointed an analysis software (Algorithm) called VITAL (Validating Investment Tool for Advancing Life Sciences) as a member of its company board of directors.²⁶ Even though the company did not countenance the portfolio attributed to VITAL as official, the company reported that VITAL had one director's vote, being a board member, and investment decisions were made subject to VITAL's approval, the company believes VITAL helped it make logical decisions, especially with bankruptcy. Similarly, a Finnish Tech Company, Tieto adopted an appointed AI application known as Alicia T as a member of its board to oversee its Data-driven business unit. The AI agent, as it was called, participated in board meetings and was recognised with a voting right.²⁷ Recently, the government of Albania made its first AI-in-person ministerial appointment called Diella, a machine-inclined tool purportedly used for public procurements.²⁸ Notwithstanding its numerous benefits, it is worth noting that AI is not an end in itself, it is substantially driven by Machine Learning Applications that are meant to complement human roles. Notwithstanding the potential that lies in the application of AI tools, the notion that it could rise to be a full-fledged Chief Executive Officer (CEO) has been heavily debated, it is argued that supposedly advanced AI systems are still very much restricted by the body of data they have been commissioned to undertake, as such, they are largely incapacitated to carry out a task, requiring creative thinking. It is opined that the abilities of the CEO transcend decision-making and coordination; the abilities extend to maintaining good communication, showing emotional intelligence, and

²⁰ Thomas Griffiths, 'Understanding human intelligence through human limitations' (2020). Trends in Cognitive Sciences 24 (11), 873-883.

²¹ *ibid.*

²² Hossein Hassani, Emmanuel Silva, Stephane Unger, Maedeh Tajmazinani, Stephen Feelyl, 'Artificial intelligence (AI) or intelligence augmentation (IA): what is the future?' (2020) AI, 1 (2), 143-155.

²³ David Poole and Alan Mackworth, 'Artificial Intelligence: Foundations of Computational Agents' (2010) Cambridge, UK: Cambridge University Press, 3.

²⁴ Thomas Davenport and Rajeev Ronanki, 'Artificial intelligence for the real world. Harvard Business Review' (2018) <<https://hbr.org/2018/01/artificial-intelligence-for-the-real-world>> accessed 3 May 2025.

²⁵ Armour and Eidenmueller (n 5).

²⁶ Gecié Law, 'Embracing the AI Revolution: Can AI Govern Companies?' (2023) <<https://geciclaw.com/ai-technology-reshapes-corporate-governance-structures/>> accessed 9 May 2025.

²⁷ Martin Petrin, 'Corporate Management in the Age of AI' (2019) Columbia Business Law Review, 965; Ambuj Sonal and Tanay Jha, 'The Fiduciary Duty Dilemma: Exploring the Legality of AI-Assisted Decision Making by Directors' (2023) <<https://chambers.com/articles/the-fiduciary-duty-dilemma-exploring-the-legality-of-ai-assisted-decision-making-by-directors>> accessed 18 June 2025.

²⁸ Alice Taylor, 'Albania appoints world's first AI-made minister' (2025) <<https://www.politico.eu/article/albania-appoints-worlds-first-virtual-minister-edi-rama-diella/>> accessed 30 September 2025.

building solid relationships across the board.²⁹ Hence, the current AI regime is lacking - perhaps, for now, in the abilities of an Artificial General Intelligence (AGI), which is capable of applying broad knowledge to varying contexts, current AI systems are classified under the Artificial Narrow Intelligence (ANI), which are often trained to uptake specific tasks.³⁰ The mechanisms of corporate governance cater to a company's internal management and other constituent relationships, aimed at meeting the objectives of the company.³¹ Corporate governance is widely dominated by the agency problem. The agency problem arises from a conflicting relationship between shareholders and managers.³² According to Armour et al.,³³ the agency problem may be viewed through the lens of three broad categories, namely: agency between the shareholders and directors; agency between shareholders, basically occurring between controlling and minority shareholders; and agency between the company and other parties such as creditors, employees, and customers. To tackle these problems, there are certain legal procedures entrenched in existing corporate laws, rules, codes, and principles.³⁴ For example, CAMA makes a clear provision regarding the duties of directors, including that they must act in the best interest of the company.³⁵ That some of these legal frameworks exist does not signal an end to agency problems; they only help to reduce them.

Some established principles that oil the wheels of corporate governance in the world include the principles of fairness, transparency, accountability, stakeholder engagement, and good leadership. However, there are concerns that companies are not meeting these principles. While the significance of these principles is undisputed, there are certain environmental, social, and political challenges inhibiting companies in Nigeria from undertaking them.³⁶ These challenges range from a hostile business environment to the menace of corruption.³⁷ Nevertheless, it is believed that these challenges could be easily navigated and resolved through the adoption of complementary systems.³⁸ Popular opinion has it that AI, through its disruptive technologies, is capable of surmounting some of the challenges encountered by managers and shareholders

²⁹ Matthew Martin and Marina Ehrlich, 'AI in corporate governance: a new dawn for the board of directors?' (2023) <<https://www.lexology.com/library/detail.aspx?g=233b49cd-5cd7-42bb-8874-7a5122c65eee>> accessed 2 May 2025.

³⁰ Ben Nancholas, 'What are the different types of artificial intelligence?' (2023) <<https://online.wlv.ac.uk/what-are-the-different-types-of-artificial-intelligence/>> accessed 25 May 2025.

³¹ Anthonia Ugowe, 'Corporate Governance as a Transformation Tool in Sustaining Nigeria's Small and Medium-Sized Enterprises (SMEs)' (Ph.D. Thesis, University of Dundee, 2020).

³² Kassum Sadiq, Etudaiye Muthkar, Fatima OYEBOLA and Abdurraheem Abdulrasheed, 'Agency problem in corporate governance in the Nigerian banking system' (2011) <https://www.researchgate.net/profile/Oyebola_Etudaiye-Muhtar/publication/215585788_Agency_Problem_in_Corporate_Governance_in_the_Nigerian_Banking_Industry_A_Review/links/094b0a1dc37f4e5e7553ffec/Agency-Problem-in-Corporate-Governance-in-the-Nigerian-Banking-Industry-A-Review.pdf> accessed 28 May 2025; Jibrin Musa and Karimu Ibrahim, 'Agency theory and corporate governance: A comparative study of Board diversity and financial performance in Nigeria' (2022) *Journal of Positive School Psychology*, 10364-10372.

³³ John Armour, Henry Hansmann, and Reinier Kraakman, 'Agency Problems and Legal Strategies, in *The Anatomy of Corporate Law: A Comparative and Functional Approach* 29-30 (Reinier Kraakman et al. eds., 3d ed. 2017).

³⁴ The Companies and Allied Matters Act (CAMA) 2020 and the Nigerian Code of Corporate Governance 2018 are the foremost corporate legal frameworks in Nigeria.

³⁵ Companies and Allied Matters Act 2020, s 305.

³⁶ Ugowe (n 30) - this thesis examined some of the political and social challenges attributed to inhibiting the smooth implementation of corporate governance principles in Nigerian companies, including the Small and Medium Scale Enterprises (SMEs).

³⁷ *ibid.*

³⁸ Bernard Marr, 'Artificial intelligence in practice: how 50 successful companies used AI and machine learning to solve problems' (2019). John Wiley & Sons. This book gives substantial detail on how AI has been able to solve varying degrees of real-world business problems.

within the corporate space.³⁹ With the utilisation of AI tools, companies can further sustain the interests of shareholders and customers. Zhao⁴⁰ suggests that AI is capable of putting an end to agency problems, especially conflicts between directors and shareholders by reducing supervision costs.

In considering some of the benefits of AI to SMEs, the Organisation for Economic Co-operation and Development (OECD)⁴¹ noted AI can change the narrative of SMEs in two fundamental ways: by easing the conditions under which companies do business, or by enabling them to change their business models and practices, which could ultimately allow them to increase productivity and outreach, and scale-up. AI systems have been reputed to enable SMEs to access finance.⁴² For example, financial institutions like banks often use statistical approaches for credit scoring, as such, the creditworthiness of SMEs seeking loans could easily be assessed with the deployment of AI Systems. In the same vein, Neural network techniques enable the analysis of vast amounts of credit report data,⁴³ also lowering default risk and the cost of lending and making it more profitable for credit institutions to serve some segments of the SME population that were left aside (e.g. small informal businesses or those carrying out businesses in rural communities). In addition, AI can further facilitate SMEs' access to credit, especially SMEs with no records and credit history, as alternative data sources like social media activities, online shopping information, shipping data, and insurance claims allow industry players in FinTech to better assess SMEs' creditworthiness.⁴⁴

The pool of published academic research on the focus of this article is relatively few.⁴⁵ Notable works in this area only consider how AI is transforming companies (broadly speaking) and not necessarily the corporate governance of SMEs.⁴⁶ In investigating the relationship between AI and corporate control of companies in the United Arab Emirates (UAE) emerging market, Solaimani et al.⁴⁷ used purposive sampling in selecting top-tier corporate professionals. The study revealed that AI had a huge impact on companies in the emerging market, particularly in the area of firm productivity and auditing processes. On the firm's productivity, the outcome of the empirical study showed that 80 percent of the study participants agreed with the idea that AI enhances a firm's productivity and performance, they noted that the adoption of AI streamlines the tasks of managers, auditors, and accountants through the process of automation.⁴⁸ The outcome of the study further portrayed that 70 percent of the participants were in agreement that the automation process would stir a change in human capital, acknowledging that system

³⁹ *ibid.*

⁴⁰ Zhao (n 4).

⁴¹ Organisation for Economic Co-operation and Development (OECD), 'Digital transformation of SMEs' (2019) <<https://www.oecd-ilibrary.org/sites/01a4ae9d-en/index.html?itemId=/content/component/01a4ae9d-en#:~:text=AI%20can%20substantially%20affect%20SME,the%20costs%20of%20experimentation%20and>> accessed 18 May 2025.

⁴² Babajide Ayopo, Lawal Adedoyin, Isibor Areghan, 'Financial technology, financial inclusion and MSMEs financing in the south-west of Nigeria' (2020) 26 (3) *Academy of Entrepreneurship Journal*, 1-17.

⁴³ Wenjun Shen, 'Analysis of the application of artificial intelligence technology in the protection of corporate governance rights and interests' (2022) *Frontiers in Psychology*, 13; OECD, 'Financing SMEs and Entrepreneurs 2020: An OECD Scoreboard, OECD Publishing' (2020) <<https://dx.doi.org/10.1787/061fe03d-en>> accessed 18 March 2025.

⁴⁴ Ayopo et al (n 41) 6-7.

⁴⁵ *ibid.*

⁴⁶ Hickman and Petrin (n 1).

⁴⁷ Reem Solaimani, Fatima Rashed, Shahad Mohammed, and Walaa ElKelish, 'The impact of artificial intelligence on corporate control' (2020) 17(3) *Corporate Ownership and Control*, 171-178.

⁴⁸ *Ibid* 174; Paul Lin and Tom Hazelbaker, 'Meeting the challenge of artificial intelligence' (2019) <<https://www.cpajournal.com/2019/07/03/meeting-the-challenge-of-artificial-intelligence/>> accessed 20 June 2025.

analytics reduces the work burden of employees in the company and allows the re-channelling of efforts into some other areas that may be impossible for AI to intervene.⁴⁹

Regarding auditing processes, the study by Solaimani et al. noted that all the study participants had a consensual opinion on the fact that AI enhances the effectiveness and efficiency of auditing processes of companies in the UAE.⁵⁰ However, the perspectives of the study participants vary on the impacts of AI on accounting systems, the study results showed that only 50 percent of the study participants supported the notion that AI has advanced companies' accounting systems, they noted that AI is a one-stop platform capable of synthesising all accounting information required in preparing a transparent financial statement.⁵¹ However, the other participants disagree with the above assertion with the central argument being that AI is grossly inadequate for developing accounting systems. It was recommended that human contributions must be infused into AI systems for sustainable efficiency.⁵²

Despite the dissenting observation on the impacts of AI on accounting systems, this article has shown a positive outcome in using AI in the control and management of SMEs.

1.3. AI AND BOARDROOM ROLES

Companies are often confronted with the challenge of complexity and uncertainty in decision-making.⁵³ The director's duty to act in the best interest of the company involves making quality decisions that will preserve the assets of the company, promote the purposes for which the business was formed, and keep the business of the company going.⁵⁴ However, the decisions of directors have often been questioned on the grounds of accuracy and truthfulness, given the sometimes biased nature of humans.⁵⁵ Unlike humans, AI is largely devoid of emotions and can barely be derailed by sentiments, making it substantially plausible for transparent decision-making in boardrooms.⁵⁶ Zhao, in his examination of AI and corporate decisions, suggests that rather than automation of a company's leadership (which may be practically impossible if it is to be adopted in its actual nature), proposed that AI be used to enhance board intelligence, fairness, and efficiency.⁵⁷

By subscribing to AI, boards are less likely to be burdened by decision-making processes that require crystallising big data, as AI can deploy computational analytics to achieve practical results in that regard.⁵⁸ According to Zhao, the roles AI plays in boardrooms can be broadly described and classified into three: assisted AI, advisory or augmented AI, and autonomous AI. Assisted AI, means that AI-powered systems could serve in assistant capacities with roles

⁴⁹ Solaimani et al. (n 46).

⁵⁰ Eno Ukpong, Imeefon Udoh and Iniabasi Essien, 'AI: Opportunities, issues and applications in banking, accounting and auditing in Nigeria' (2019) 10(1) *Asian Journal of Economics, Business and Accounting*, 14. Hussein Issa, Ting Sun and Miklos Vasarhelyi, 'Research ideas for AI in auditing: The formalization of audit workforce supplementation' (2016) 13(2) *Journal of Emerging Technologies in Accounting*, 1-20.

⁵¹ Solaimani et al. (n 46) 175.

⁵² Solaimani et al. (n 46) 176.

⁵³ Davide Settembre-Blundo, Rocío González-Sánchez, Sonia Medina-Salgado and Fernando E. García-Muñoz, 'Flexibility and Resilience in Corporate Decision Making: A New Sustainability-Based Risk Management System in Uncertain Times' (2021) 22 *Global Journal of Flexible Systems Management*, 107-132.

⁵⁴ *Companies and Allied Matters* 2020, s 279.

⁵⁵ William Hofmann, Bertram Gawronski, Tobias Gschwendner, Huy Le, and Manfred Schmitt, 'A meta-analysis on the correlation between the implicit association test and explicit self-report measures' (2005) 31 (10) *Personality & Social Psychology Bulletin*, 1369-1385.

⁵⁶ *ibid.*

⁵⁷ Zhao (n 4) 666.

⁵⁸ Nada Elgendy and Ahmed Elragal, 'Big Data Analytics in Support of the Decision Making Process' (2018) *Procedia Computer Science*, 1071, 1084.

centred around administrative tasks, albeit devoid of any decision-making rights, in other words, humans are still widely in control of the decision-making machinery but are often supported by AI software.⁵⁹ The concept of advisory AI points to the fact that AI can complement human efforts on complex matters and in the decision-making process by fabricating scenarios and building simulations.⁶⁰ The augmented AI features high-end AI-powered solutions that may sometimes exceed human intelligence like report automation. If this role of AI is effectively applied, it has the potential to help company directors get ideas using probability and data-inclined statistical inference approaches, observe relationships among the business stakeholders to promote the efficiency of their decision-making processes and act upon sets of big data.⁶¹ Summarily, it helps to consolidate human expertise, by making humans continually innovative.⁶² Finally, the autonomous AI signals AI's capabilities to undertake independent actions, it is the point where AI can make deductions based on available data and sheer patterns and trends within the corporate environment. These are often seen in self-regulated control mechanisms or in robots.

The classifications of AI by Zhao are identical to the ideas espoused by Belsultana on the same subject. In trying to investigate the role played by AI in shaping boardroom decision-making, Belsultana presented four AI interactive forms, namely: supportive AI, subordinate AI, augmentation AI, and autonomous AI. The subordinate and the supportive AI roles are in line with the propositions of the assisted AI role enunciated by Zhao in the above paragraph. However, the subordinate AI requires lower cognitive capabilities while the supportive AI requires considerably higher cognitive capabilities.⁶³

Again, Hilb,⁶⁴ taking cues from the reasonings of Nalder⁶⁵ and Armour and Eidenmueller⁶⁶ also classifies the possible roles of AI in corporate governance into 5, especially as it relates to the board's governance system and decision-making process. Like Zhao above, Hilb classified these roles into assisted intelligence, augmented intelligence, autonomous intelligence, and autopoietic intelligence. Hilb explains that assisted AI promotes board efficiency in corporate governance, he noted that the application of assisted intelligence does not in any way alter the fundamental underpinnings of the board's modus operandi; rather, it provides the board with more refined tools that will aid the quality of the board.⁶⁷ Accordingly, the power of the human decision-maker remains intact; what assisted intelligence does is create room for co-direction, wherein AI-powered tools are used to provide valuable insights for members of the board when making decisions. On augmented intelligence, Hilb explained that it promotes boards' effectiveness, as the primary contributory role of AI is in its predictive models, which aid the

⁵⁹ Zhao (n 4) 672; Katleen Walch, 'Is There a Difference Between Assisted Intelligence Vs. Augmented Intelligence?' (2020) <<https://www.forbes.com/sites/cognitiveworld/2020/01/12/is-there-a-difference-between-assisted-intelligence-vs-augmented-intelligence/?sh=3fe40c0b26ab>> accessed 18 May 2025.

⁶⁰ Zhao (n 4) 666.

⁶¹ Zhao (n 4) 684; Jona Nalder, 'Future-U A3 Model: how to understand the impact of tech on work, society, and education. Future-U.' (2017) <<https://www.nmc.org/blog/are-we-there-yet-artificial-intelligence-in-education>> accessed 18 January 2025.

⁶² Hickman and Petrin (n 1).

⁶³ Yasmine Bensultana, 'Decision Making in Boardrooms: Towards a new understanding of corporate Governance in the age of Artificial Intelligence' (2021) <https://nicg-unisg.squarespace.com/s/NICG_2021-1_Bensultana_final.pdf> accessed 9 June 2025.

⁶⁴ Micheal Hilb, 'Toward artificial governance? The role of artificial intelligence in shaping the future of corporate governance' (2020) 24 Journal of Management Governance, 851–870, 861.

⁶⁵ Nalder (n 38).

⁶⁶ Armour and Eidenmueller (n 5).

⁶⁷ Hilb (n 63) 861.

board in fabricating scenarios and building simulations, capable of helping strategic decision-making.⁶⁸

On amplified intelligence, the suggestion is the co-governance of both the board and machines.⁶⁹ However, it is observed that this reasoning may contradict some of the principles of conventional corporate governance structures like personal liability, the question then remains: when humans and machines co-govern, upon whom does liability fall, and what is the degree of liability on both parties? How will the same be measured? These questions require further in-depth research, not only within the academic space but also in companies already making practical efforts in the use of AI tools. The idea of autonomous intelligence is to make companies self-governed.⁷⁰ As such, board members are either partly or wholly replaced by AI tools (the use of vital is instructive).⁷¹ Nonetheless, humans are still saddled with the responsibility of determining the model of corporate governance to be adopted.

Lastly, autopoietic intelligence rests on the idea that companies can be made to self-evolve. Where it operates, all corporate processes are significantly automated, and the company, while engaging with other companies, is able to drive its development. Here, human decision-makers are often not required as the process of automation undertakes most of the decision-making processes.⁷²

1.4. AI AS A PERSONALITY AND THE ISSUE OF LIABILITY

While companies are making increasing investments in AI initiatives, there are concerns as to who takes responsibility for any harm done by the use of AI. Thus, who is responsible for possible omissions by AI? Companies are more likely to struggle with the consequences of harm perpetuated by AI as it may be impractical to hold an artificial entity (in this context) responsible for any misdoing.⁷³ The current discussions on the adoption of AI largely vary from what is obtainable in different countries' corporate laws, especially as it relates to the appointment of AI-powered tools as a member of a company's board. Countries are yet to fully develop legislation that will back such a move as appointing an AI board director.⁷⁴ For instance, the step taken by the Hong Kong Company, Deep Knowledge Ventures by appointing an AI application, VITAL, as a member of its board of directors, though laudable, there may be speculations as to such action considering the position of the Hong Kong corporate law to have at least one natural person as board of directors in a company.⁷⁵ This provision of having natural persons as directors extends to other jurisdictions like the United Kingdom⁷⁶ and the United States of America.⁷⁷ However, this peculiarity of having a natural person as a director is not written in Nigeria's Companies and Allied Matters Act, 2020, even though the law recognises

⁶⁸ *ibid.*

⁶⁹ Hilb (n 63) 861-862.

⁷⁰ Hilb (n 63) 864.

⁷¹ Nicky Burrige, 'AI takes its place in the boardroom' (2017) <<https://asia.nikkei.com/Business/AI-takes-place-in-the-boardroom>> accessed 20 May 2025.

⁷² Hilb (n 63) 864-865.

⁷³ Sami Haddadin and Dennis Knobbe, 'Robotics and Artificial Intelligence: The Present and Future Visions' in Algorithms and Law 1, 33 (Martin Ebers & Susana Navas eds., 2020); Mohammad Bashayreh, Fadi Sibai, & Amer Tabbara, 'Artificial Intelligence and Legal Liability: Towards an International Approach of Proportionate Liability Based on Risk Sharing' (2021) 30 Information & Communications Technology Law, 169, 170.

⁷⁴ Eroğlu and Karatepe-Kaya (n 3) 542.

⁷⁵ Companies Ordinance 2014, s 457. This section applies to a private company other than a private company that is a member of a group of companies of which a listed company is a member.

⁷⁶ Companies Act 2006, s 155(1).

⁷⁷ Delaware Code Title 8. Corporations § 141.

companies as artificial persons following the *locus classicus* case of *Salomon vs Salomon*,⁷⁸ it does not provide for artificial persons being officers of a company. Thus, AI lacks juristic status at least, for now, in Nigeria.

In infusing AI into the internal working systems of companies, it is argued that certain legal considerations must guide the board of directors, creating boundaries as to what tasks AI tools may undertake. Current arguments are in support of the need to formally grant AI legal status, thus making it liable for any omission caused by it.⁷⁹ Despite the fact that shifting liability to an artificial person will cause a paradigm shift in the conventional business system, it is argued that liability is worth advocating for since it will limit the legal and financial commitments of its curators and users in the company.⁸⁰ The existing demands to grant AI a legal status are symmetrical to the legal corporate personality of companies.⁸¹ The principle of legal corporate personality presupposes that a company, duly incorporated, is a separate legal entity, distinct from its shareholders and directors who ordinarily superintend over it.⁸² Like companies, it is opined that the use of AI should be registered to enable it to bear an independent legal status.⁸³

1.5. CONCERNS RELATING TO THE DEPLOYMENT OF AI TOOLS IN CORPORATE GOVERNANCE

Notwithstanding arguments on the numerous benefits of AI to the corporate governance structure of companies, there are considerable challenges, often shrouded in legal, ethical, and operational concerns, that may discourage intending users from undertaking its application. The following are some of the challenges:

1.5.1. Accountability: Accountability is at the core of corporate governance principles. Where there is an omission, the one who committed the omission should be made susceptible to justify the action or provide an answer as to what ensued and why it did.⁸⁴ The question of who takes responsibility for any omission made by AI applications is one of the prominent concerns in the application of AI to companies' corporate governance. It is argued that AI cannot be held responsible for any misdoing.⁸⁵ For instance, where an algorithm's prediction was followed to invest and such an investment fails, who bears the moral responsibility? It has been observed that the workings of algorithmic processing are a function of many elements, i.e. decisions made by AI are a product of human and non-human interventions. Hence, it is sometimes difficult to identify who will give an account for misdoing. Regardless, some critics have argued that AI

⁷⁸ Companies and Allied Matters Act 2020, s 42; The concept of an artificial person exists under Nigerian Law, but this only applies in view of the doctrine of corporate legal personality- *Salomon v Salomon & Co. Ltd.* [1897] AC 22.

⁷⁹ Zhifeng Wen and Deyi Tong, 'Analysis of the Legal Subject Status of Artificial Intelligence' (2023). 14(1) *Beijing Law Review*, 75-79.

⁸⁰ Wallach Wendell and Allen Colin (2008). *Moral Machines: Teaching Robots Right from Wrong*. New York, US: Oxford University Press; Herbert Zech, 'Liability for AI: public policy considerations' (2021) 22 *ERA Forum*, 147-158. Miriam Buiten, Alexandre de Streel, and Martin Peitz, 'The law and economics of AI liability' (2023) 48 *Computer Law and Security Review*, 2-7.

⁸¹ Companies and Allied Matters Act 2020, s 42.

⁸² Ume Prefa and MN Umenweke, 'An evaluation of corporate personhood as the basis for the criminal liability of corporations in Nigeria' (2023) 5 (2) *International Journal of Comparative Law and Legal Philosophy*, 25, 26.

⁸³ Such opinions to call for registration of AI-powered machines, especially robotics have been debated by the European Union- European Union, 'Texts adopted - Civil Law Rules on Robotics' (2017) <https://www.europarl.europa.eu/doceo/document/TA-8-2017-0051_EN.html> accessed 3 June 2025.

⁸⁴ David Shoemaker, 'Attributability, Answerability, and Accountability: Toward a Wider Theory of Moral Responsibility' (2011) 121(3) *Ethics*, 602-32.

⁸⁵ Luciano Floridi, and J.W. Sanders, 'On the Morality of Artificial Agents' (2004) 14(3) *Minds and Machines*, 349-79.

could still be made accountable by strategic sanctioning, like altering its application or even deleting it.⁸⁶

1.5.2. Bias: Since AI depends largely on the data presented to it by its users or creators, its outcomes are likely to be influenced to fit into the interests of its creators and users. Generally, AI-powered tools are a reflection of the data they have been commissioned to undertake; where such data is biased or pervaded by any discrepancies, it can falter its decisions, making it sometimes unreliable and unfair. The overconcentration of companies on the decisions of AI hamper board diversity as other views may be relegated.⁸⁷

1.5.3. Privacy and information security risks: The use of AI in corporate governance may cause potential threats to data privacy. As earlier pointed out, AI relies on a large amount of data to perform its functions; this data sometimes contains sensitive information that could be susceptible to leaks to unauthorised individuals and organisations. Thus, AI-powered tools have been subjected to different issues like hacks and other forms of cyber-attacks which may cause sensitive data to be compromised. These attacks are detrimental to a company's corporate governance and would usually affect the interests of the company's shareholders.⁸⁸

1.5.4. Values: According to Hilb,⁸⁹ values are a crucial concern when deploying AI to be used in corporate governance. It follows that a moral basis normally underpins decisions, but may be practically inapplicable to AI in this context. In applying AI to corporate governance, it is suggested that outcomes should be based on established principles, the question that has been repeatedly asked is how can these established principles be infused into the realm of AI. Hilb noted that these concerns are tightly knitted to philosophical arguments. Accordingly, "AI assumes an instrumental rather than a value-based view of morality. Since values are central to any successful company, such an instrumental view of morality can lead to unintended consequences and conflicts that should be avoided at all costs".⁹⁰ Hence, AI tools do not exactly hinge their decisions on what is morally acceptable or unacceptable, it rather focus on achieving a set goal.

1.5.5. Job Displacement: the process of automation has been perceived as risky to human employment because the roles hitherto taken up by humans may become automatable. The increasing automation of company tasks and conventional processes outmodes certain jobs. According to a PWC report, about 30 percent of human jobs are projected to be automatable by the year 2030.⁹¹ Within the context of corporate governance, human abilities in decision-making and general management may be undermined.

⁸⁶ Lechterman Theodore. The concept of accountability in AI ethics and governance. In J. Bullock, Y.C. Chan, I. Himmelreich, V. Hudson, A. Korinek, M. Young, and B. Zhang (Eds.), (2021) The Oxford handbook of AI governance. Oxford University Press; FouadDaidai and Larbi Tamnine, 'Artificial Intelligence and Corporate Governance' Adjunct Proceedings of the 18th International Conference on Persuasive Technology, Eindhoven, The Netherlands April 19-21, 2023) <<https://ceur-ws.org/Vol-3474/paper6.pdf>> accessed 20 June 2025.

⁸⁷ Matthew Martin and Marina Ehrlich, 'AI in corporate governance: a new dawn for the board of directors' (2023) <<https://www.lexology.com/library/detail.aspx?g=233b49cd-5cd7-42bb-8874-7a5122c65eee>> accessed 19 June 2025.

⁸⁸ *ibid.*

⁸⁹ Hilb (n 64) 860.

⁹⁰ *ibid* 860.

⁹¹ PWC UK, 'Up to 30% of existing UK jobs could be impacted by automation by early 2030s, but this should be offset by job gains elsewhere in economy' (2017) <https://pwc.blogs.com/press_room/2017/03/up-to-30-existing-uk-jobs-could-be-impacted-by-automation-by-early-2030s-but-this-should-be-offse.html> accessed 2 June 2025.

The adoption of AI infrastructures requires a cumbersome and expensive process, like every Information Technology (IT) strategy, it is feared that such a process is risky in the event that such an investment fails (especially where it involves small-cap businesses like SMEs).⁹² Again, AI infrastructures require varying expertise of interprofessional teams, which may be unaffordable to SMEs. Hence, AI is a hydra-headed technology driven by high capital investment; for SMEs, it may be impracticable to adopt AI infrastructures, in view of the foregoing challenges. Additionally, SMEs are constrained by not being listed on the Nigerian Stock Exchange, thereby limiting the prospects of raising funds from the public in case of a failed investment in AI infrastructures.⁹³

1.6. CONCLUSION AND RECOMMENDATIONS

The impact of AI on every facet of human endeavour cannot be overemphasised. This study attempts to examine the links between AI and corporate governance, particularly its prospects and challenges for SMEs in Nigeria. From its introduction, it sets out convincing data, making a case for the significance of AI in helping company boards achieve their aims, it acknowledges that some companies across the globe are already utilising AI in full-scale corporate governance, following appointments of AI-powered applications as board members in some companies like the Hong-Kong Company and Tieto, as mentioned above. This study considered some of the opinions, commentaries, and various dispositions of scholars and experts in the field of AI and corporate governance alike. It would appear that the thoughts of all of the above contributors align to mean that AI offers an immense contribution to the field of corporate governance. From easing the responsibility of making data-focused decisions to streamlining the duties of company actors, AI offers an almost all-encompassing solution to varying degrees of challenges within the corporate sphere. This study noted the subject of agency problems and how they are a dominant obstacle within the precincts of corporate governance and corporate law. It suggests ways through which these problems could be solved, essentially following the path of AI. It noted that AI plays a defining role in boardrooms and classifies these roles into 3, in line with the propositions of Zhao and Belsultana.⁹⁴

This article noted that granting AI the right to operate autonomously is at the crux of current discussions regarding AI and its application to corporate governance. No evaluation was found during this study on the direct outcome of AI applications to companies' results. Accordingly, it is reasoned that for AI to be effective in its operation within the purview of corporate governance for SMEs in Nigeria, considerable legal status should be ceded to it. This legal status will of course be strictly regulated as a lack of regulation of AI in this context may mean exposure to an unprecedented level of risks. It likened this autonomy to the corporate legal personality granted to companies (being artificial persons). It is submitted that making AI autonomous would reduce the onus of responsibility placed on the shoulders of curators and creators alike. However, where autonomy is realised, it is suggested that certain regulatory frameworks need to be put in place to ensure that the deployment of AI is used for the greater good of the company and its members. Notwithstanding supporting arguments for the significance of adopting AI in corporate governance, this article notes that there are accompanying risks of data protection, data privacy, and other key issues that require in-depth consideration before AI can be adopted. It is reported that while there are prominent discussions in the area universally, Nigeria is yet to create a working document (in the form of policies and

⁹² Roa B'aez and Remi Igbekele, 'Challenges of AI adoption in SMEs' (Thesis, KTH, School of Industrial Engineering and Management, 2021).

⁹³ Oladimeji Abiodun and Olufemi Aladejebi, 'Effectiveness of corporate governance on SMEs in the stock broking firms in Nigeria' (2021) 6 Scholars Journal of Economics, Business, and Management, 157-166 - Although there are proposed trends to allow the listing of SMEs in Nigeria, these proposals are yet to not fully materialise. Timi Olubiyi, 'Stock Exchange Listing and SMEs' (2020) <<https://www.thisdaylive.com/index.php/2020/12/07/stock-exchange-listing-and-smes>> accessed 20 June 2025.

⁹⁴ *ibid*; Zhao (n 4).

regulations) for the adoption of AI. The enactment of legal and institutional frameworks to govern AI utilisation in Nigeria's company jurisprudence will go a long way to provide safeguards in its deployment.