Research Article

THE ROLE OF ARTIFICIAL INTELLIGENCE IN ENHANCING CORPORATE GOVERNANCE AND ACHIEVING SUSTAINABLE DEVELOPMENT

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ABSTRACT

Background: *Corporate governance is an essential framework for enhancing performance efficiency, accountability, and ethical behavior within corporations. Emerging technologies, particularly artificial intelligence (AI), have infiltrated traditional corporate governance models, management practices, and decision-making processes due to their tremendous capabilities. However, implementation poses a significant challenge due to unresolved legal and ethical issues concerning the anthropocentric model of law, governance, and AI - particularly regarding judicial systems, to diminish corporate misconduct because of improved corporate governance and transparency in the resolution of corporate disputes.*

Method: *The paper adopts an analytical and comparative legal method. It seeks to analyze the conceptual basis of artificial intelligence (AI) and corporate governance, present relevant legislation and regulations in the United Arab Emirates (UAE), and provide a comparative legal analysis of selected frameworks and international indicators to understand how AI might be utilized to enhance governance systems and contribute to sustainable development.*

Results and conclusions: This article posits that the introduction of AI tools, such as predictive analytics, automated audits, and electronic disclosure methods, may enhance corporate transparency, accountability, and efficiency, thereby facilitating sustainable growth. However, some concerns remain unresolved, such as privacy, algorithmic bias, deficiencies in accountability, and the 'black-box' problem, which may affect trustworthiness and reliance on AI-based governance. This article suggests that AI can be a useful legal and technological instrument for sustainable development when fully integrated into corporate governance. However, amendments to existing legal frameworks for accountability and ethics must accompany this innovation to maintain transparency and accountability.

1   INTRODUCTION

Artificial intelligence (AI) is an emerging technology that has attracted significant investment due to its capacity to learn, analyze data, generate insights, and support decision-making in performing specific tasks.[1] In this context, companies and institutions seek to achieve development, sustainability, and continuity by improving the efficiency of information technology management, thereby enabling them to address challenges and mitigate risks.

Despite the recognized importance of effective governance, many instances of corporate negligence, such as those involving *Enron*, *WorldCom*, and *Volkswagen*, demonstrate the ongoing obstacles and the urgency of enhancing governance mechanisms. This highlights the significance of this new technology in enhancing corporate governance, thereby contributing to raising trust in the national economy, strengthening the role of the stock market, mobilizing savings, increasing investment rates, and preserving the rights of minorities and small investors. Therefore, it is essential to expand the use of AI and leverage its potential as a sophisticated tool for effective governance and sustainable development. This applies at the corporate level and the judicial system, particularly when companies fail to adopt sound, transparent practices to prevent litigation. In such cases, the judicial system intervenes through its various interpretations to impose sanctions or resolve disputes between stakeholders. Thus, corporate governance and judicial administration intersect in their shared pursuit of enhancing transparency and accountability through artificial intelligence technologies.[2]

The research problem lies in the gap between the governance provisions of the new Companies Law and their practical implementation, as responsibility for enforcing governance rules largely rests with company boards or management, whose practices may

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1   Daniel Munro, 'La gouvernance de l'IA: risques, incertitudes et avantages' (*Forum des politiques publiques*, 11 January 2019) 4 <https://ppforum.ca/fr/publications/la-gouvernance-de-lia/> accessed 8 April 2025.

2   SAGE, 'Corporate Governance' in *SAGE Brief Guide to Corporate Social Responsibility* (SAGE Publications Inc 2012) 98, doi:10.4135/9781452243986.n12.

vary in effectiveness. To be clear, this study focuses on the legal system of the United Arab Emirates, particularly the UAE Commercial Companies Law, drawing on comparative material from international and regional laws and governance systems as appropriate.

The study examines how AI improves corporate governance and sustainable development. It examines the legal underpinnings and methods for corporate governance in AI systems to determine how AI helps shareholders and stakeholders supervise management. The research will define these two concepts, analyze the legal and practical foundations for improving governance with AI, and determine AI's role in monitoring corporate disclosure and transparency. It will also examine the board of directors' or management's role in implementing governance rules as well as the legal consequences of governance violations. Finally, the study will examine the ethical and legal implications of AI-enabled governance frameworks, particularly regarding privacy, accountability, and fairness, and propose a framework that balances innovation with corporate responsibility and transparency.

2   METHODOLOGY

The study adopts a legal analytical approach to understanding AI, as both a concept and a technology, and how it relates and aligns with corporate governance. In this context, it examines definitions by international organization(s) such as the World Intellectual Property Organization (WIPO) and the United Nations Commission on International Trade Law (UNCITRAL), and utilizes a similar process of contextual analysis to corporate governance by reviewing the Organization for Economic Co-Operation and Development (OECD), and the International Finance Corporation as well as the Egyptian Guide to Corporate Governance and Accountability, the Saudi Capital Market Authority Guide, and UAE legislation such as Federal Decree-Law No. (32) of 2021. This analysis draws attention to the basic pillars of governance, which include transparency, accountability, and protection of shareholders in the context of digital transformation.

This research views AI as a tool supporting decision-making in corporate governance rather than functioning as a fully-fledged decision-maker, leading the study to focus on the legalities of AI governance, that still allow humans to remain in control and accountable.

The study also employs a comparative methodology to examine similarities and differences across different experiences, such as the Bahraini law on AI and governance, the European Ethical Charter on the use of artificial intelligence (AI) in judicial systems, and the OECD's flexible principles. This combination of comparison and analysis enables characterizing AI's disruptive role in governance and demonstrates the legal, ethical, and technical challenges involved, i.e., privacy, algorithmic bias, and transparency. The research aims to balance UAE legislation with the best international practices within an applicable legal framework that enables AI to support good governance, protect shareholders, and promote sustainable development goals.

Besides international and national legislative sources, the research references include academic articles published in peer-reviewed journals and evaluative institutional reports that cover a range of theoretical and applied legal principles. It provides the possibilities to clarify the existing structures and identify gaps in UAE legislation that might impede the successful implementation of effective governance.

3   DISCUSSIONS

3.1. Conceptual and Legal Foundations

The term AI refers to programs and systems that imitate human intelligence to perform tasks assigned to them by humans, enabling them to achieve performance comparable to that of humans in cognitive functions. These programs aim to strengthen human capabilities and contributions[3] by simulating human mental steps[4] and using specific algorithms and procedures to perform a specific task or work.[5] In the same respect, the WIPO defines artificial intelligence as "a new computer science technology designed to create systems that can perform tasks deemed as requiring human intelligence, with or without limited human intervention."[6]

Approached differently, the United Nations Commission on International Trade Law on the Legal Aspects of Smart Contracts and AI, defines this advanced technology as "the science of deriving systems that can figure out solutions and perform tasks by simulating cognitive processes. AI can be constructed to resolve a problem, but it also has the capability of studying the problem and figuring out solutions on its own without human intervention."[7]

From a jurisprudential perspective, some scholars define AI as "a subset of computer science designed to simulate a cognitive ability to replace humans in performing

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3   Wassim Ahmed Salem Badran, 'The Role of Patents in the Development of Business in the Age of Artificial Intelligence: Case Study of the Development of Netflix from 1997 to 2021' (2022) 5(3) The Scientific Journal of Intellectual Property and Innovation Management 397 [in Arabic].

4   Ahmed Majid, *Artificial Intelligence in the United Arab Emirates* (UAE First Quarter Initiatives, Department of Economic Studies and Policies, Ministry of Economy 2018) [in Arabic].

5   Margaret A Boden, *Artificial Intelligence: A Very Short Introduction* (OUP 2018) 5, doi:10.1093/actrade/9780199602919.001.0001.

6   WIPO Secretariat, *WIPO Conversation on Intellectual Property and Artificial Intelligence: Revised List of Issues on Intellectual Property and Artificial Intelligence Polic*y (WIPO/IP/AI/2/GE/20/1 REV, 2nd ses, 21 May 2020) 4 <https://www.wipo.int/meetings/en/doc_details.jsp?doc_id=499504> accessed 8 April 2025.

7   UNCITRAL, *Legal Aspects of Smart Contracts and Artificial Intelligence: submission by the Czechia* (A/CN.9/960, 51st ses, 25 June–13 July 2018) 5 ff <https://undocs.org/en/A/CN.9/960> accessed 8 April 2025.

appropriate tasks in a specific context based on intelligence,"[8] and to carry out operations that depend on perception, thinking, acting, and responding to changing situations.[9] AI can produce results, perform task-relevant information processing, and learn from data trends and patterns.[10] This new technology primarily relies on robots that simulate human intelligence to achieve basic goals, the most significant of which is completing tasks with maximum efficiency and precision.[11]

The above definitions affirm that AI can analyse and interpret data through measurement and inference frameworks, in addition to its autonomy in making decisions independent of the user's continuous will or direct control.[12]

From a legislative perspective, it is apparent that almost all Arab legislation lacks a clear definition of AI. Nevertheless, the UAE Federal Decree-Law No. (46) of 2021, defines the automated electronic intermediary in its first Article as "an electronic information system that operates automatically and independently, in whole or in part, without the intervention of any natural person at the time the work is being carried out or responded to."[13] It is important to emphasize however, that AI cannot be confined to the notion of a mere electronic agent.

The types of AI vary according to their capabilities.[14] Some systems are built to handle simple, routine tasks, while others are far more advanced, capable of learning, reasoning, and adapting to new situations. No matter where they fall on this spectrum, AI tools have already shown their value in business management. They help boards of directors make smarter strategic decisions, tackle difficult problems, and strengthen governance practices.[15]

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8   Fatima Zohra Belhamou and Arzi Fethi, 'The Contribution of Expert Systems in Improving Decision-Making in Institutions' (2017) 2(1) Revue Maghrébine Management des Organisations 66 [in Arabic].

9   Inas bent Khalaf Al-Khaledi, 'Artificial Intelligence Governance In the Judicial Work: Legal Reading in the European Ethical Charter on the Use of Artificial Intelligence (AI) in Judicial Systems and their Environment (CEPEJ)' (2021) 10(116) Journal of Sharia Research and Studies 155 [in Arabic].

10   Siham Darrbal, *Artificial Intelligence: A Legal Study* (The Scientific Group for Printing and Publishing 2022) 12 [in Arabic].

11   George Michel, 'The Role of Artificial Intelligence in Corporate Governance' (2023) 4(2) International Journal of Jurisprudence, Judiciary, and Legislation 404, doi:10.21608/ijdjl.2023.178158.1186 [in Arabic].

12   Musaab Thayir Abdul Sattar and Bashar Quis Mohammed, 'Tort Liability Related to Artificial Intelligence' (2021) 10(2) Journal of Legal and Political Sciences 392, doi:10.55716/jjps.2021.10.2.11 [in Arabic]; Farida Ben Othman, 'Artificial Intelligence: A Legal Approach' (2020) 12(2) Journal of Political and Legal Notebooks 159 [in Arabic].

13   UAE Federal Decree-Law No (46) of 2021 'Concerning the Federal Judicial Authority' [2021] Official Gazette 737, art 1.

14   Ahmed Ali Hassan Othman, 'The Implications of Artificial Intelligence on Civil Law: A Comparative Study' (2021) 11(76) Journal of Legal and Economic Research 1533, doi:10.21608/mjle.2021.199765 [in Arabic].

15   Mohamed Irfan Al-Khatib, 'Robots' Legal Status: Personality and Responsibility: A Comparative Rooting Study: A Reading of The European Civil Law Rules on Robots 2017' (2018) 6(24) Journal of Kuwait International Law School 99 [in Arabic].

At its core, AI imitates certain aspects of human intelligence through automation—carrying out tasks on its own without constant human input. However, its role goes well beyond efficiency. AI enables organizations to uncover deeper insights, streamline operations, and boost productivity across nearly every industry. This combination of problem-solving power and performance enhancement makes AI more than just a helpful tool; it is a transformative force reshaping how companies and their leaders operate today and will continue to do so in the future.

The UAE legislator describes governance as "a framework of regulations, standards and procedures that ensure institutional discipline in corporate management, adhering to international regulations. This includes identifying the responsibilities and duties of the board of directors while safeguarding the rights of shareholders and stakeholders."[16]

It is also defined as "norms for governing and managing the company, encompassing frameworks for structuring the relationships among the stakeholders, directors, and shareholders by enacting specific provisions and rules to enhance the decision-making process and impart a transparent and credible nature."[17]

Some scholars view it as "the system through which the corporation's tasks are governed and controlled at the highest level to attain its objectives and uphold requisite standards of accountability, integrity, and transparency."[18]

According to the Egyptian Guide to Corporate Governance and Accountability, governance is a collection of foundations, principles, and rules that determine how the board of directors, owners of the corporation, and other stakeholders interact to protect and balance their respective interests.[19] Some Arab countries, such as Saudi Arabia, have adopted this approach via the Saudi Capital Market Authority, which has developed a guide for Saudi firms that facilitates this very concept. The guide outlines specific procedures to help provide the decision-making process with a sense of transparency and credibility, as well as to protect the rights of shareholders and stakeholders, thereby encouraging fairness, competitiveness, and transparency in the high-quality business marketplace.[20]

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16 Capital Market Authority (KSA), *Corporate Governance: Booklet* (KSA CMA nd) https://cma.gov.sa/en/Awareness/Publications/booklets/Booklet_13.pdf accessed 8 April 2025.

17 Oksana Khotynska-Nor, 'Judicial Transparency: Towards Sustainable Development in Post-Soviet Civil Society' (2022) 5(2) Access to Justice in Eastern Europe 83, doi:10.33327/AJEE-18-5.2-n000212; Maksym Maika, 'The Implementation of E-justice within the Framework of the Right to a Fair Trial in Ukraine: Problems and Prospects' (2022) 5(3) Access to Justice in Eastern Europe 249, doi:10.33327/AJEE-18-5.2-n000320.

18 Michel (n 11) 408.

19 Egyptian Institute of Directors, *The Egyptian Corporate Governance Code* (EIoD 2016) https://www.ebrd.com/content/dam/ebrd_dxp/assets/pdfs/legal-reform/corporate-governance/sector-assessment/e/Egyptian%20CG%20Code.pdf accessed 8 April 2025.

20 Omar N Al-Boridi, 'Exploring the Role of AI in Corporate Governance: Leveraging Potential for Productivity, Efficiency, and Competitive Advantage' (2023) 3(2) International Journal of Green Management and Business Studies 54, doi:10.56830/IJGMBS12202301.

It is clear from the above that corporate governance is defined by a set of characteristics, the most important of which are: ensuring the existence of an effective corporate governance framework and separating the ownership of the company from management to reduce conflict among stakeholders. Other features include the principle of equality among all shareholders in the company, the protection of their rights, and preventing the majority shareholders from voting in a way that is harmful to minority partners or to a certain class of shareholders in a biased manner, or in violation of shareholder equality.[21] Accordingly, governance aims to enhance the board of directors' responsibility for managing the company, both towards the company itself and all shareholders and stakeholders.[22]

Based on the above, the company's board of directors or managers, depending on the circumstances, are liable to implement the company's governance rules. The Federal legislator, in Articles (362 and 7) of the Commercial Companies Law, has laid down administrative fines ranging from one hundred dirhams to ten million dirhams for companies, board chairs, members, managers, and auditors in the case of violating these regulations. The administrative fine is doubled in case of repeated violations, without exceeding the limit of twenty million dirhams.[23]

The UAE Commercial Companies Law includes provisions for administrative sanctions, including monetary penalties on the respective companies, board members, managers, and auditors. Nonetheless, that does not exclude civil liability, where is caused by breaches of governance responsibilities, or the fact that there is no criminal liability, which is to be determined when the necessary elements of an offence exist under the governing rules. The incorporation of AI into corporate governance does not diminish any of these. AI actively constitutes a support or operational tool.

There is no dispute that the introduction of AI does not shift the responsibility, and nothing more, to members of the board of directors and other top executives. The introduction of AI might, as the circumstances warrant, shift the responsibility to a greater degree, involve automated systems less, or result from oversight or misrepresentation that incited automated systems. Thus, decisions made or supported by these automated systems should still be attributed to the bodies corporate and to the members of the corporate governance, as deep-seated principles of law would dictate, as far as the UAE is concerned.

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21   UAE Cabinet Resolution No (102) of 2022 'Promulgating the Administrative Penalties Regulations Regarding Acts Committed in Violation of the Provisions of Federal Decree by Law No (32) of 2021 Regarding Commercial Companies' [2022] Official Gazette 739, arts 3, 4.

22   Ridoan Karim, 'Corporate Governance', *International Encyclopedia of Business Management* (2026) vol 1, 456, doi: 10.1016/B978-0-443-13701-3.00036-0.

23   UAE Federal Decree-Law No (32) of 2021 'On Commercial Companies' [2021] Official Gazette 712, arts 7, 362. For more details, see UAE Cabinet Resolution No (102) of 2022 (n 21) arts 3, 4.

3.2. Legal and Institutional Framework for AI in Governance

This paper first examines the legal framework governing the application of AI in corporate governance in the UAE, followed by a comparative analysis of regional and international trends.

3.2.1. The UAE Legal Framework

The Federal Decree-Law No. (35) of 2022 on Evidence in Civil and Commercial Transactions, particularly Articles 53-56, defines electronic evidence to include "all data or information created, stored, extracted, copied, transmitted, communicated, or received using information technology and which can be accessed in intelligible format."[24] The electronic framework encompasses all forms of electronic data and digital materials. There are many aspects of digital transformation in the UAE Commercial Companies Law, which authorize corporations to retain an electronic copies of original documents and records submitted to them.[25] The Minister was granted the power to promulgate a resolution regulating the filing of companies' documents to registered firms via electronic and alternative means of communication. Article (140/1) also mandates that firms post their articles of incorporation, bylaws, and any other papers or information required by the Securities and Commodities Authority on their websites. After the Authority approves, the invitation to a general assembly meeting must be communicated to all shareholders by registered mail or other contemporary means as stipulated in the company's articles of incorporation.[26] The law also authorizes holding general assembly meetings and the participation of the shareholders in its deliberations and voting on its decisions through modern technology means for remote attendance.[27] Electronic voting will be used for the voting process, provided the rules and regulations set out by the Authority are followed.[28]

The above makes it clear that the UAE legislator is paving the way for the use of AI in corporate governance. Therefore, it can be said that while the digitization of data, documents, and records provides the necessary basis for AI use, it also creates the legal framework for advancing AI in corporate governance and achieving sustainable development. This complies with the governance of the judicial system, particularly with

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24   UAE Federal Decree-Law No (35) of 2022 'On Evidence in Civil and Commercial Transactions' [2022] Official Gazette 737, arts 53–56.

25   UAE Federal Decree-Law No (32) of 2021 (n 23) art 26(2).

26   ibid, art 174(1)(c).

27   ibid, art 174(3); UAE SCA, 'Circular on the Annual General Assembly Meetings of Public Joint-Stock Companies for 2024' (*UAE Securities and Commodities Authority*, 2024) Fifth: Attending the General Assembly meeting using modern technical means <https://www.sca.gov.ae/assets/54c01814/circular-on-the-annual-general-assembly-meetings-of-public-joint-stock-companies-for-2024-en.aspx> accessed 8 April 2025.

28   UAE Federal Decree-Law No (32) of 2021 (n 23) art 188(1).

regard to the digitization of courts, judicial oversight, and procedural justice within judicial institutions, which aims to digitally improve professional activities, facilitate human work, reduce the time required to complete tasks, and accelerate the achievement of sustainable goals.[29] For example, the artificial intelligence tools used in the UAE's digital courts include scheduling hearings, machine translation of foreign texts, automation of court filing systems, summarizing legal facts, and, in some particular cases, issuing rulings. [30] Thus it is confirmed that corporate governance and judicial administration converging in their shared objective of enhancing transparency and accountability through artificial intelligence technologies.

3.2.2. Comparative Perspectives

Comparative legislation mandates that corporations disclose information and maintain transparency, establishing the general principle for publishing data on companies and their activities in accordance with the applicable legal conditions.

By regulating corporations in accordance with international standards, the UAE Commercial Companies Law aims to improve the business environment and the country's economic standing, particularly strengthening governance, safeguarding the rights of partners and shareholders, attracting foreign investment, and encouraging corporate social responsibility.[31]

The UAE legislator requires companies to submit data and records related to their activities to relevant public authorities. This obligation commences with company's legal existence, as it does not acquire legal personality until it is registered in the commercial registry.[32] This registration requires disclosure to the competent authority, whether federal or local, of all details related to the establishment of the company.[33] This includes publishing a summary of the company's articles of incorporation,[34] documenting the incorporation agreement, registering any subsequent amendments to the agreement.[35] Additionally, the incorporation

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29   Steluța Ionescu, Cristian Mareș and Alin Petrea, 'Digitalization of the Judicial System in Romania: Important Strategic Objective and Guarantee for a Modern, Fast and Effective Justice System' (2025 17th International Conference on Electronics, Computers and Artificial Intelligence (ECAI), Târgoviște, Romania, 26-27 June 2025) doi:10.1109/ECAI65401.2025.11095510.

30   Naeema Kamal Ali and Ali Taha Akram, 'Artificial Intelligence and its Applications in the Judiciary: A Comparative Study' (2025) 22(2) University of Sharjah Journal of Legal Sciences 289, doi:10.36394/jls.v22.i2.12 [in Arabic].

31   UAE Federal Decree-Law No (32) of 2021 (n 23) art 3; UAE Cabinet Resolution No (79) of 2022 'On Controls to Motivate Commercial Companies to Exercise Social Responsibility' [2022] Official Gazette 734.

32   UAE Federal Decree-Law No (32) of 2021 (n 23) art 21(1).

33   ibid, art 113(1).

34   ibid, art 115.

35   ibid, art 15(1).

decision must be published in the official gazette, and a public offering must be announced in one of the newspapers for public joint-stock companies.[36]

The establishment phase is followed by the joint stock company's obligation to list its shares on a registered financial market, in accordance with the listing norms and regulations set out by the Authority and the relevant financial market.[37] It is also dedicated to revealing to the stock market any significant events that may influence the value of listed securities upon their occurrence.

Shareholders who own at least 10% of the company's capital are entitled to request the Ministry or the Authority, as applicable, to inspect the company on the ground that directors or auditors have allegedly breached their obligations under either the law or the articles of incorporation, provided a legitimate basis for suspicion exists.[38] Companies strive to actively disclose information to partners, shareholders, and stakeholders, and shareholders should have equitable, transparent access to it.

A public joint-stock company's board of directors must draft an annual account containing a balance sheet at the end of the fiscal year and a profit and loss statement.[39] The company must also adhere to the mechanism for distributing compensation to the chairman and board members, as stipulated in Article 29 of the Governance Guide.[40] The law has defined a set of controls that a public joint-stock company must follow when appointing its board of directors.[41]

Pursuant to the Commercial Companies Law, the board of directors of the Securities and Commodities Authority shall adopt a decision that sets forth the requirements and procedures that companies must follow in establishing their boards of directors and nominating members.[42] In this regard, artificial intelligence may improve disclosure and transparency in corporate governance. Its forecasting and analytical abilities could reveal hidden trends and patterns that provide important insights for increasing transparency in service delivery decision-making. The introduction of artificial intelligence could also improve corporate accountability by creating an audit trail of decision-making and outcomes while also identifying and reducing unethical acts and misbehavior.[43]

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36   ibid, art 121.

37   ibid, art 137.

38   ibid, art 342(1).

39   ibid, art 154.

40   UAE SCA Chairman of Authority's Board of Directors' Decision No (3/Chairman) of 2020 'Concerning Approval of Joint Stock Companies Governance Guide', art 29 <https://www.sca.gov.ae/en/regulations/regulations-listing?id=198#page=1> accessed 8 April 2025.

41   ibid, art 9.

42   UAE Federal Decree-Law No (32) of 2021 (n 23) art 143(5).

43   Karim (n 22) 457.

Furthermore, the development of real-time, interactive, and codeless corporate reports improves transparency and accountability.[44]

3.3. AI in Corporate Governance Practices

By providing important insights from vast amounts of data and automating certain governance procedures, AI may enhance decision-making.[45] This minimizes human error and bias, boosts efficiency, and aligns operations with shareholder interests,[46] and enhances effective regulatory compliance.[47] Systems based on AI technology can help judicial authorities increase efficiency and consistency, and improve making-decisions procedures.[48]

3.3.1. Boards' Decision-Making

AI can enhance decision-making by collecting, analyzing, clarifying, and evaluating information related to financial and non-financial knowledge, corporate business performance, corporate social media accounts, and competitor activities.[49] Through advanced algorithms, AI enables companies to anticipate the future value of their stocks in the market and mitigate business risks. It can also help identify and eliminate unethical behaviour and misconduct by analyzing business data trends.[50]

The degree of a company's reliance on AI largely depends on the board of directors' belief in its viability for corporate management, regardless of the type of intelligence used. This belief enables the company to implement change effectively[51] through proposals and discussions about the development and purchase of AI systems.[52]

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44   Osama Samih Shaban and Arwa Omoush, 'AI-Driven Financial Transparency and Corporate Governance: Enhancing Accounting Practices with Evidence from Jordan' (2025) 17(9) Sustainability 3818, doi:10.3390/su17093818.

45   Asmaa Maqari and Fatiha Ben Azzouz, 'The Role of Artificial Intelligence in Enhancing Corporate Governance' (2023) 8(3) Legal and Political Research 142 [in Arabic]. Also see, Enas Mohamed Ali Quteishat and others, 'Predictive Modelling in Legal Decision-Making: Leveraging Machine Learning for Forecasting Legal Outcomes' (2024) 20(3) Journal of Electrical Systems 2060, doi:10.52783/jes.4006.

46   Mohamed Saeed Ahmed Ismail, 'Legal Protection Methods for E-Commerce Transactions: A Comparative Study' (PhD thesis, Ain Shams University 2005) 184 [in Arabic].

47   Anacleto Correia and Pedro B Água, 'Artificial Intelligence to Enhance Corporate Governance: A Conceptual Framework' (2023) 19(1) Corporate Board: Role, Duties and Composition 29, doi:10.22495/cbv19i1art3.

48   Žaklina Spalević and others, 'The Role of Artificial Intelligence in Judicial Systems' (2024) 12(3) International Journal of Cognitive Research in Science Engineering and Education 561, doi:10.23947/2334-8496-2024-12-3-561-569.

49   Baran Can Kaya, 'The Role of Artificial Intelligence in Corporate Governance' (*SSRN Working Paper*, 22 June 2022) doi:10.2139/ssrn.4143846 <https://ssrn.com/abstract=4143846> accessed 8 April 2025.

50   Shaban and Omoush (n 44).

51   Al-Boridi (n 20) 56.

52   Maqari and Ben Azzouz (n 45) 142.

AI can evaluate vast amounts of data relevant to the board of directors' decision-making process and automate certain board responsibilities, such as compliance monitoring, while also contributing to the design and execution of performance-based remuneration systems. Machine learning algorithms can predict the effects of various compensation structures on executive behavior and company performance, enabling more informed and effective compensation decisions.[53]

The integration of AI into corporate governance requires that the company's board of directors acquire new skills and expertise. Board members, formerly included people with experience in finance, law, and business, are now expected to possess knowledge of technology, data analysis, and AI algorithms. Therefore, it is necessary for corporate boards to include individuals who can "decode the algorithm" on.[54]

In the future, we may see AI systems in which robot managers replace human managers and make their own decisions. These systems may be referred to as "autonomous AI" and "self-autonomous AI". These autonomous systems will also be on the boards of directors of companies such as Robot Sofia.

3.3.2. Auditing and Compliance

The Commercial Companies Law requires that every public joint-stock company appoints one or more auditors[55] to ensure compliance with laws, regulations, and instructions, evaluate risk management procedures, and verify the accuracy of the financial statements presented by the board of directors.

The use of AI in auditing can improve efficiency, accuracy, and speed, as well as reduce costs. This can be done by establishing a connection between the Registration Department's website of the and the websites of companies, allowing the government to immediately or periodically review any changes to their operations or decisions.

This study draws on doctrinal and analytical legal methods and provides practical illustrations of the growing applications of artificial intelligence in corporate governance. For example, some multinationals based in Dubai, UAE, and around the world have employed AI-driven tools for auditing and compliance to monitor, detect anomalies, and ensure real-time regulatory compliance. Likewise, AI-powered tools are being used to assess risks, predict outcomes, and analyze governance compliance to support the boards in their decision-making. These instances demonstrate the extent to which AI-enabled governance tools are practicable for supporting legal compliance and enhancing transparency, accountability, and oversight.

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53   Correia and Água (n 47) 32.
54   Shaban and Omoush (n 44).
55   UAE Federal Decree-Law No (32) of 2021 (n 23) art 245(1). [cf French Commercial Code 'Code de commerce', art L225-228 (2000) <https://www.legifrance.gouv.fr/codes/texte_lc/LEGITEXT00000 5634379/> accessed 8 April 2025].

3.3.3. Shareholder and Employee Engagement

AI can be utilized by shareholders or stakeholders of the company. Shareholders, particularly those with limited involvement in company meetings and management, are most concerned about the company's use of AI. This category is primarily focused on year-end profits, while the majority owners make decisions and run operations. AI applications can facilitate better communication, allowing minority shareholders to participate in decisions that affect the company, ultimately helping them safeguard their rights.[56] In this respect, the federal legislator has incorporated modern technologies into the process of holding meetings, enabling shareholders to participate in discussions and vote on decisions through remote attendance technology[57]. AI can also enhance shareholder engagement and facilitate electronic voting, making it easier and more convenient for shareholders to exercise their voting rights.[58]

Company employees are often affected by the introduction of AI systems.[59] The use of AI in a company may lead to the dismissal of some workers or changes in their assigned work. This could result in violations of workers' rights as stipulated in laws and in their contracts with the company. Therefore, it is essential to involve workers in the decision to adopt AI for the company's management, ensuring they receive all their entitlements.[60]

3.4. Obstacles to the Integration of AI in Corporate Governance

The main issues in implementing AI in corporate governance are privacy, fairness, and accountability.[61] These systems, due to their ability to analyze and predict data, may violate users' privacy. Additionally, because AI systems may be influenced by biases in the data they analyze, their conclusions may not always be fair or objective, potentially eroding accountability and confidence in AI systems.[62]

The "black box" phenomenon is another issue. This relates to the difficulty of comprehending AI decision-making due to the intricacy of its algorithms and the enormous

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56   Al-Boridi (n 20) 54.

57   UAE Federal Decree-Law No (32) of 2021 (n 23) art 174(3); UAE SCA (n 27) Fifth; French Commercial Code (n 55) art L225-103-1 (2000).

58   Correia and Água (n 47) 32.

59   Shaban and Omoush (n 44).

60   Susana Beatriz Checa Prieto, 'Artificial Intelligence and Fundamental Rights' in Andrés J Arenas Falótico and Jessica Bayón Pérez (eds), *The New Role of Labor Unions in the AI Era* (IGI Global Scientific Publishing 2025) 207, doi:10.4018/979-8-3693-8049-9.ch007.

61   Ghada Seif, 'Corporate Governance of Sustainable Artificial Intelligence (AI) in Strategic Communication and Digital Marketing: United Arab Emirates Guidelines' (2024) 21(S1) Migration Letters 501, doi:10.59670/ml.v21iS1.6166.

62   Michael Hilb, 'Toward Artificial Governance? The Role of Artificial Intelligence in Shaping the Future of Corporate Governance' (2020) 24 Journal of Management and Governance 851, doi:10.1007/s10997-020-09519-9.

amounts of data they process. The absence of transparency may erode confidence in AI systems and impede their adoption by stakeholders.[63] Another issue humans may face in the future with the development of AI systems is that AI algorithms will increase unemployment worldwide, and consequently, on corporate boards. Therefore, legal regulations must be put in place regarding the placement of AI on corporate boards.[64]

In addition, AI presents several cybersecurity concerns, as the exponential expansion of digital transformation has led to a surge in cybersecurity risks.[65] Accordingly, a robust framework for using AI in corporate governance is necessary to address these potential risks. International practices offer certain governance instruments that can also be used in a corporate context. One is Algorithmic Impact Assessment (AIA), created by the Canadian Digital Service, which mandates public organizations to consider the legal, ethical, and social ramifications of the algorithmic systems they intend to deploy.[66] While intended for the public realm, the rationale and design of the AIA can be easily transferred to corporate governance. The incorporation of such an approach would allow corporations to evaluate the risks of algorithmic bias, opacity, accountability, and data protection before using AI in board decision-making or compliance functions, thus enhancing the governance of AI in a more responsible and legal manner.

Such a framework would guide how AI is integrated into governance rules and standards, and how ethical, legal, and transparency issues that may arise are addressed. It is important for organizations to contribute to the development of effective legal frameworks for AI governance. In short, the challenges of integrating AI into corporate governance go beyond technical considerations and include ethical, legal, and regulatory dimensions. Organizations adopting AI must understand the ethical implications of AI-driven decisions. Taken together, these obstacles demonstrate that the successful integration of AI into corporate governance depends on the adoption of comprehensive regulatory safeguards that balance technological innovation with legal and ethical accountability.

3.5. AI, Corporate Governance, and Sustainable Development

AI has emerged as a transformative force in restructuring corporate governance and aligning it with the objective of sustainable development. At the economic level, digital transformation automates business processes, improving operational efficiency and

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63   Correia and Água (n 47) 32.

64   Kaya (n 49) 13.

65   Shaban and Omoush (n 44).

66   Treasury Board of Canada Secretariat, 'Algorithmic Impact Assessment tool' (*Government of Canada*, 28 November 2025) <https://www.canada.ca/en/government/system/digital-government/digital-government-innovations/responsible-use-ai/algorithmic-impact-assessment.html> accessed 30 November 2025; Jacob Metcalf and others, 'Algorithmic Impact Assessments and Accountability: The Co-construction of Impacts' (FAccT '21: Proceedings of the 2021 ACM Conference on Fairness, Accountability, and Transparency, 1 March 2021) 735, doi:10.1145/3442188.3445935.

reducing transaction costs, thereby positively affecting productivity. AI also creates new business and investment opportunities, which in turn affect employment and entrepreneurship. In terms of public services, AI enhances the provision of health and education services and improves the interaction between individuals and institutions with the government through e-government programs. AI also affects human and individual behavior by facilitating social communication and integration within society.

From a sustainability perspective, AI contributes to balancing economic growth, social inclusion, and environmental protection by providing accurate data to facilitate decision-making, detect abuse or misconduct, and promote accountability. A prime example of this is businesses' ability to leverage AI-powered analytics to manage and streamline energy use and emissions tracking in real time, while pinpointing operational inefficiencies. This helps improve responsible consumption and production in accordance with guideline 12 of the SDG. This also supports climate change-related goals, as per guideline 13 of the SDG. This helps build trust in institutions, which is essential for achieving sustainable development. Furthermore, AI enables better resource management when big data analytics, predictive modeling, and monitoring technology are used for improved resource management, potentially leading to less waste, reduced use of energy, ensuring regulation compliance, which also supports corporate social responsibility, provides a level of transparency and accountability around corporate processes, thus establishing the principles of fairness and good governance.[67] This includes providing equal access to information, protecting the rights of minority shareholders, and enabling broader participation in decision-making.[68]

These contributions collectively demonstrate that AI can generate systematic outcomes above and beyond corporate performance to societies when appropriately and effectively integrated into governance frameworks. It can contribute to attaining economic growth, social welfare, and environmental protection. However, to achieve these goals and prevent potential risks, effective regulatory and institutional frameworks are required that uphold AI's commitment to governance through coherent principles of fairness, accountability, and transparency, so that technology is used effectively as a channel for sustainable economic development.

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67   Maya Khater and others, 'Assessing the Impact of Green Tourism on Sustainable Development: A Case Study of the United Arab Emirates' (2025) 6(2) Research Journal in Advanced Humanities 1, doi:10.58256/0m0wvr07; Maya Khater and Yassine Chami, 'Effectiveness of the Legal Framework for Humanitarian Assistance during Armed Conflicts: The Aggression against Lebanon as a Case Study' (2025) 6(1) Research Journal in Advanced Humanities 1. doi:10.58256/caqpva90; Maya Khater, Yassine Chami and Mohamad Albakjaji, 'Legal Environmental Protection and Sustainable Development in the United Arab Emirates' (2025) 5(2) Journal of Human Rights, Culture and Legal System 378, doi:10.53955/jhcls.v5i2.469.

68   Goda Strikaitė-Latušinskaja, 'The Rule of Law and Technology in the Public Sector' (2023) 6(1) Access to Justice in Eastern Europe 1, doi:10.33327/AJEE-18-6.1-a000104; Amra Mahmutovic and Abdulrahman Alhamoudi, 'Understanding the Relationship between the Rule of Law and Sustainable Development' (2024) 7(1) Access to Justice in Eastern Europe 170, doi:10.33327/AJEE-18-7.1-a000102.

Nevertheless, these new technologies are not without risks. AI systems may exhibit deficiencies such as algorithmic bias, discriminatory outcomes, or adverse impacts on employment through the automation of tasks traditionally performed by human employees. These concerns highlight the urgent need for robust legal and regulatory frameworks that establish clear principles of fairness, accountability, and transparency. AI can be effectively integrated as a transformative tool to promote sustainable economic and social development while mitigating harmful consequences.

4   CONCLUSIONS

Although human intelligence remains the principal force behind corporate governance and sustainable development, it is important to recognize that AI, through ongoing development, is assuming an increasingly important role in enhancing governance practices, particularly in resolving judicial disputes arising from corporate governance issues. The findings of this research demonstrate that AI systems' capabilities to enhance corporate governance are grounded in the fundamentals of digital transformation of corporate data and documentation, supported by the principles of disclosure and control. The research highlights a close connection between corporate governance and sustainable development, as the latter is considered part of corporate governance and an extension of it, and its implementation improves efficiency across all companies. Although governance practices have increased globally due to their advantages, persistent financial and trust-related challenges remain.

Moreover, the study reaffirms that the utilization of AI systems by companies is an implementation of governance principles, achieving high levels of transparency and efficiency in practice. Among the most significant applications is the smart electronic agent, which enables companies to register with commercial registries and autonomously publishes company information that complies with the company law disclosure requirements. AI applications are also moving toward replicating human cognitive functions, with innovations such as artificial neural networks that emulate aspects of decision-making theory and practice layered into boards of directors and decision-making processes calibrated with data and learning.

Overall, this study contributes to legal scholarship and policy reform by providing a structured legal framework for integrating artificial intelligence into corporate governance systems that enhances transparency, accountability, and sustainable development while aligning with national legislation and international best practices.

Based on these conclusions, the following recommendations are proposed:

It is imperative that modern governance mechanisms based on AI are used to enhance digitization and sustainable development. Public authorities should recognize the importance of digital connectivity in their interactions with firms and develop integrated

AI systems to improve productivity and coordination. A centralized AI-based corporate accounting system should be established to enable independent, quick, and low-cost audits of electronic records for corporate accounts, while ensuring accuracy and objectivity in line with international standards.

To facilitate the application of specific AI ethical principles within the context of corporate governance, the following actions can be taken. First, regulators must issue precise, mandatory instructions that specify the requirements for ethical AI in relation to corporate governance including transparency, accountability, equity, data protection, and so on. Second, corporations must be made to embed these requirements within their internal governance structures, particularly at the board level and their compliance programs. Third, specific courses tailored for boards and senior executives should be instituted to enable them to adequately supervise AI-enabled decision-making systems. Fourth, mechanisms for independent surveillance and auditing of AI compliance and ethical standards must be instituted. Finally, to ensure proper alignment and compliance, there should be strong legal mechanisms, including penalties and compliance regimes, for breaches.

In addition to the above, our recommendations for the responsible and legal use of AI for business compliance and management are as follows:

- Defining Legal Responsibility: There should be a clear definition of legal liability when AI fails in corporate governance. The board of directors and senior management should be legally liable for decisions made or influenced by AI, especially when technical faults, erroneous outputs, or biased algorithms cause harm to shareholders, employees, or third parties.

- Bias and risk assessments are required: Businesses should conduct regular risk assessments and audits to assess the use of AI in governance and the presence of algorithmic bias, discrimination, or systemic errors. Risk assessments and audits must be documented and made available for regulatory review.

- Liability, corrective action, and sanctions: For the misuse of AI and the breach of governance regulations, degrees of liability, sanctions, and informal compliance mechanisms that involve financial sanctions, suspension of the use of AI systems, compliance with governance, and, in extreme cases, liability of members of the board of directors, should be enacted. The reporting of such incidents, AI-related incidents such as failures, results, and or incomplete actions, and the reporting of corrective actions should be made to affected parties and the appropriate regulators.

- Supervision and accountability: There should be independent supervisory units or qualified auditing professionals who can monitor, on a continual basis, corporations' use of AI in governance to ensure compliance with ethical, legal, and transparency standards.

- Integration into governance frameworks: There should be formalized, ethically aligned AI standards incorporated into corporate governance structures, as well as internally and within policies and codes of conduct, to ensure AI complements, not replaces, human judgment and accountability.

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АНОТАЦІЯ УКРАЇНСЬКОЮ МОВОЮ

Дослідницька стаття

РОЛЬ ШТУЧНОГО ІНТЕЛЕКТУ В ПОКРАЩЕННІ КОРПОРАТИВНОГО УПРАВЛІННЯ ТА ДОСЯГНЕННІ СТАЛОГО РОЗВИТКУ

Мохамед Ель-Еріан, Діна Імад, Сузалі Сулайман, Енас Кутішат та Мая Хатер*

АНОТАЦІЯ

Вступ. *Корпоративне управління є важливою основою для підвищення ефективності діяльності, підзвітності та етичної поведінки в корпораціях. Новітні технології, зокрема штучний інтелект (ШІ), проникли в традиційні моделі корпоративного управління, практики управління та процеси ухвалення рішень завдяки своїм великим можливостям. Однак їх впровадження є значним викликом через невирішені правові та етичні питання, що стосуються антропоцентричної моделі права, управління та ШІ, зокрема у сфері судових систем, спрямованих на зменшення корпоративних зловживань*

завдяки вдосконаленню корпоративного управління та підвищенню прозорості у вирішенні корпоративних спорів.

Методи. У статті використовується аналітичний та порівняльно-правовий метод. Метою роботи є аналіз концептуальних основ штучного інтелекту (ШІ) та корпоративного управління, представлення відповідного законодавства та нормативних актів в Об'єднаних Арабських Еміратах (ОАЕ), а також надання порівняльно-правового аналізу окремих структур та міжнародних показників, щоб зрозуміти, як ШІ може бути використаний для того, щоб вдосконалити системи управління та сприяти сталому розвитку.

Результати та висновки. У цій статті стверджується, що впровадження інструментів ШІ, таких як прогностична аналітика, автоматизовані аудити та електронні методи розкриття інформації, може підвищити корпоративну прозорість, підзвітність та ефективність, що в такий спосіб сприятиме сталому розвитку. Однак деякі проблеми залишаються невирішеними, такі як конфіденційність, алгоритмічна упередженість, недоліки у підзвітності та проблема «чорної скриньки», які можуть вплинути на довіру та залежність від управління на основі ШІ. У цій статті висловлюються припущення, що ШІ може бути корисним правовим та технологічним інструментом для сталого розвитку, якщо він повністю інтегрований у корпоративне управління. Однак, для підтримки прозорості та підзвітності, це нововведення має супроводжуватися змінами у межах чинного правового регулювання щодо підзвітності та етики.

Ключові слова. Підзвітність; корпоративне управління; фінансові штрафи; штучний інтелект; сталий розвиток.

ABSTRACT IN ARABIC

دور الذكاء الاصطناعي في تعزيز حوكمة الشركات وتحقيق التنمية المستدامة

محمد العريان، ودينا عماد، وسوزالي سليمان، وإيناس قطيشات، ومايا خاطر*

الملخص

الخلفية: تُعد حوكمة الشركات إطارًا أساسيًا لتعزيز كفاءة الأداء، والمساءلة، والسلوك الأخلاقي داخل الشركات. وقد تسللت التقنيات الناشئة، ولا سيما الذكاء الاصطناعي، إلى نماذج حوكمة الشركات التقليدية، وممارسات الإدارة، وعمليات اتخاذ القرار، وذلك بفضل قدراتها الهائلة. غير أن تطبيق هذه التقنيات يواجه

تحديات كبيرة نتيجة قضايا قانونية وأخلاقية لم تُحسم بعد، تتعلق بالنموذج الإنساني المتمركز حول الإنسان في القانون والحوكمة والذكاء الاصطناعي، ولا سيما فيما يتعلق بالأنظمة القضائية، وذلك بهدف الحد من المخالفات المؤسسية نتيجة تحسين حوكمة الشركات وتعزيز الشفافية في تسوية النزاعات المؤسسية.

المنهجية: يعتمد البحث المنهج التحليلي والمقارن في المجال القانوني، حيث يسعى إلى تحليل الأساس المفاهيمي للذكاء الاصطناعي وحوكمة الشركات، واستعراض التشريعات واللوائح ذات الصلة في دولة الإمارات العربية المتحدة، وتقديم تحليل قانوني مقارن لأطر مختارة ومؤشرات دولية، من أجل فهم الكيفية التي يمكن من خلالها توظيف الذكاء الاصطناعي لتعزيز أنظمة الحوكمة والمساهمة في تحقيق التنمية المستدامة.

النتائج والاستنتاجات: تفترض هذه الدراسة أن إدخال أدوات الذكاء الاصطناعي، مثل التحليلات التنبؤية، وعمليات التدقيق الآلي، ووسائل الإفصاح الإلكتروني، من شأنه أن يعزز شفافية الشركات، والمساءلة، والكفاءة، بما يسهم في دعم النمو المستدام. ومع ذلك، لا تزال هناك بعض القضايا العالقة، مثل الخصوصية، والتحيز الخوارزمي، وأوجه القصور في المساءلة، ومشكلة "الصندوق الأسود"، والتي قد تؤثر في موثوقية أنظمة الحوكمة القائمة على الذكاء الاصطناعي وإمكانية الاعتماد عليها. وتخلص الدراسة إلى أن الذكاء الاصطناعي يمكن أن يشكل أداة قانونية وتقنية فعّالة لدعم التنمية المستدامة عند دمجه بشكل كامل في حوكمة الشركات، إلا أن هذا الابتكار يجب أن يصاحبه تعديل الأطر القانونية القائمة المتعلقة بالمساءلة والأخلاقيات، بما يضمن الحفاظ على الشفافية وتحقيق المساءلة.