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Enhancing Corporate Governance with AI: Smarter Decisions and Financial Performance Forecasting

Sonila Nikolla[1]
Greta Angjeli[2]

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Abstract: *This paper explores the integration of artificial intelligence (AI) in corporate governance, focusing on how AI-driven corporate finance can enhance decision-making ethics and transparency. It delves into the potential of machine learning and process automation to streamline financial reporting, improving accuracy and efficiency. The use of AI in developing predictive models for financial performance is also examined, showcasing its role in informed strategic planning. By leveraging AI technologies, corporations can achieve better governance practices, promoting ethical standards and transparency in their operations. This study highlights the critical role of AI in transforming corporate governance through improved financial oversight and decision-making processes.*

1. INTRODUCTION

The subject of "digital transformation" has taken center stage in business and study in recent years. The "Internet of Things" and blockchain technologies, for example, are revolutionizing business operations and creating the "fourth industrial revolution," as it has been dubbed Schwab (2017, p. 192). Artificial intelligence (AI) is the field of digital technology that is receiving the greatest funding. "A technology that applies systems to machines so that machines can think like humans" is the definition of artificial intelligence Go et al. (2020).

Three categories of AI are covered in the literature now in publication, ranging from basic to advanced: 1) Machine learning - the automation of decision-making, frequently without human intervention; 2) Robotic process automation - the automation of routine human operations like creating reports, etc.; 3) AI that approximates human behavior; this type of AI is referred to as "strong" or artificial general intelligence Goertzel (2016, p. 612). It is important to remember that the third category of AI is presently limited to the stage of theory. Businesses have traditionally used robotic process automation, but recent technological advancements in deep learning, image recognition, and more affordable computers have only made machine learning possible and reasonably widespread Jarrahi (2018).

According to research, artificial intelligence (AI) has the power to drastically alter corporate governance. We distinguish two literature streams on the subject in this article. The first examines how AI has improved governance structures like boards of directors (BoD). The second stream looks at the broad governance adjustments and organizational modifications required to adjust to AI and other advancements in digital technology.

The first stream of literature investigates the rationale behind and use of work automation. Although it is not currently anticipated that robots will replace humans in offices, process automation offers

[1] Mediterranean University of Albania, Faculty of Economics, Blv. Gjergj Fishta,Nr. 52, 1023,Tirana, Albania
[2] Mediterranean University of Albania, Faculty of Economics, Blv. Gjergj Fishta,Nr. 52, 1023,Tirana, Albania

prospects and several possible advantages that could help various corporate governance stakeholders (shareholders, the Board of Directors, auditors, etc.) Manita et al. (2020). It is important to remember that big data analysis, the cornerstone of all forms of AI, already has advantages for corporate governance. However, machine learning is expected to have the most impact on corporate governance instruments.

Several authors have shown that it might enable the BoD, auditors, and shareholders to switch from systems of routinely evaluating data samples to systems of ongoing study of all current information on a company that is available. AI has more potential advantages outside information processing. For instance, Cunningham and Stein (2018) contend that machine learning aids in anomaly identification, while Erel et al. (2018) show that it performs better than humans when choosing members of the BoD. According to Wang et al. (2020), machine learning aids in identifying risk variables and deters corporate misconduct.

Algorithmic governance, a related body of scholarship, delves toward the complete automation of decision-making. Of course, some people doubt AI. Dignam (2020) for instance, contends that AI needs to be used carefully and that it might make issues like culpability attribution and discrimination worse. Williams et al. (2018) even go so far as to claim that algorithms might discriminate based on "the data they lack," i.e., discrimination brought about by leaving out specific model parameters, which makes it even more difficult to detect.

Certain researchers delving into the subject of organizational transformation contend that digital technologies alter a company's essence, rendering it less dependent on conventional business authority sources. It is noted by Parker et al. (2016) that platform-based businesses like Uber are important, and by Fenwick and Vermeulen (2018) that digital technologies alter "who, what, when, and how people 'trust'." These academics concur that in order to reflect the evolving nature of business, corporate governance needs to be fundamentally reevaluated and made much more decentralized.

2. AI'S EFFECTS ON CONVENTIONAL CORPORATE GOVERNANCE

Corporate governance processes have undergone significant modifications as a result of the incorporation of Artificial Intelligence (AI) technologies into corporate finance. The framework of policies, procedures, and guidelines that direct and oversee the operations of a business, including its shareholders, management, board of directors, and other stakeholders, is known as corporate governance. Using AI in corporate governance has brought potential and problems for decision-making, risk management, compliance, accountability, and transparency, among other areas. The integration of AI has significantly improved corporate governance decision-making procedures. Businesses can quickly and reliably analyze large amounts of financial data by using AI-powered algorithms, which allows boards and management teams to make better informed decisions Tang (2021). The optimal allocation of resources and strategic planning is facilitated by AI's capacity to identify patterns, trends, and anomalies in financial data.

Furthermore, by providing scenario modeling and predictive analytics, AI technologies support risk management. These technologies enable businesses to foresee and reduce financial risks, including credit risk, operational risk, market volatility, and risks related to regulatory compliance. Companies can proactively address risks to their financial stability and reputation by integrating AI-driven risk management systems into governance frameworks. This increases shareholder value and trust.

Artificial intelligence (AI) solutions facilitate regulatory reporting and guarantee compliance with intricate financial rules. Real-time transaction monitoring is facilitated by AI-powered compliance software, which also produces correct reports for regulatory bodies and identifies questionable activity Bruner (2020). Automating compliance procedures strengthens the company's commitment to moral business conduct and corporate responsibility while reducing the risk of fines, regulatory infractions, and reputational harm.

Although AI on a board of directors is still a relatively new and uncommon phenomenon and robots are not yet patrolling office hallways, there are many actual and prospective applications of AI for corporate governance examined in the literature by Willcocks et al. (2015). The majority of these use cases make sense in terms of job automation, suggesting that a sizable percentage of jobs may soon be automated. According to Frey and Osborne's (2017) predictions, automation might supplant 47% of current jobs. Generally speaking, this research stream concludes that AI reduces agency costs and enhances corporate governance by automating decision-making through real-time big data analysis.

The literature that is currently available on the subject of corporate governance falls into two categories: first, there is a discussion of how AI can be used to give shareholders accurate information and BoD, principally through an enhanced audit, a crucial governance mechanism; second, the automation of some BoD and management tasks, such as choosing BoD members. "Algorithmic governance" is a related body of research that examines the advantages and drawbacks of fully automating decision-making with sophisticated algorithms.

2.1. Using AI to Give Shareholders and the BoD Trustworthy Information

The knowledge imbalance that exists between a company's management and shareholders is the fundamental cause of principal-agent conflict (Jensen & Meckling, 1976). The management may falsify the information presented to the shareholders in order to further its own personal objectives. Hiring external audit firms, who confirm the correctness of the financial accounts, is one method used to create the necessary level of trust in the financial data.

This situation is suboptimal from several points of view. First, it makes BoD and shareholders wait for a quarterly report to appear to get a glimpse of their firm's operations Manita et al. (2020). Second, it focuses audit firms on a relatively routine process of manual raw data verification instead of focusing on more relevant services, such as assurance of information systems, etc. To begin with, it forces the board of directors and shareholders to wait for a quarterly report to be released before learning about their company's activities.

Big data, as previously said, is the cornerstone of all forms of artificial intelligence, and utilizing data from the several sources mentioned above is advantageous from a corporate governance standpoint. These extra data sources ought to be treated as complementary evidence, at the very least. Manita et al. (2020) contend that data is becoming more automatically created and maintained in secure systems that provide very little room for manipulation, even within a company.

By making this information available to shareholders, information asymmetry would be significantly reduced, improving the firm's governance. Big data growth, albeit typically advantageous, creates a situation where knowledge asymmetry transforms into something else entirely.

Currently, regulatory organizations like the BoD face additional challenges in addition to gathering as much data as they can and verifying the accuracy of management-provided data: they also

need to traverse the increasingly complex data landscape. Numerous studies demonstrate that audit businesses that automate a significant portion of their operations can benefit from robotic process automation (RPA), which also improves output accuracy and frees up staff time for more valuable work. The aforementioned modifications would necessitate a substantial modification of audit firms' business structures and areas of concentration.

3. AI TECHNOLOGY INTEGRATION IN CORPORATE FINANCE

In order to provide significant benefits, the procedure begins by selecting corporate finance industries that are prime candidates for AI integration. This first stage entails a thorough assessment of company financial operations to identify areas where artificial intelligence (AI) technology could improve productivity, accuracy, or decision-making procedures. Data collection is the next stage after possible integration areas have been identified. The data, if available, is put through a number of preparation steps to make sure it is accurate and useful.

These processes include data transformation into an appropriate format, data cleansing to correct mistakes or inconsistencies, and feature extraction to extract pertinent attributes for analysis. When data is not easily accessible, one can employ manual data collection techniques to obtain the necessary information from relevant sources, including databases or financial reports.

The next stage after preprocessing and data gathering is choosing the right AI techniques based on the goals of the analysis and the properties of the data. Choosing between descriptive analytics and predictive analytics techniques is part of this selection process. When descriptive analytics is the favored method, the focus is on analyzing historical data to extract insights about past performance and current patterns. To find patterns or links in the dataset, usually means using exploratory data analysis and data visualization approaches. A variety of machine learning approaches are used in settings that lend themselves to predictive analytics in order to project future patterns or outcomes from historical data. These methods include time series analysis, anomaly detection, clustering algorithms, regression analysis, and classification algorithms.

The next step is to use processed data to create AI models after choosing appropriate AI approaches. This includes using the models to produce predictions or insights on fresh data after training them on historical data to identify patterns and linkages. After the model is implemented, its accuracy and efficacy are assessed by comparing its performance to predetermined standards. This evaluation helps determine whether the models can be integrated into corporate financial procedures or if more improvement is required. The AI models are implemented in pertinent corporate finance processes to automate jobs, enhance decision-making, or support operational efficiency if they satisfy the predetermined performance criteria. On the other hand, if performance is insufficient, the models are improved, and the assessment procedure is repeated until a satisfactory level of performance is achieved.

The handling, analysis, and optimization of financial processes have undergone a substantial change as a result of the introduction of Artificial Intelligence (AI) technology into corporate finance (Bruner, 2020). The ability of AI to enhance decision-making, automate tedious operations, and extract insightful information from massive data sets is what is driving this change.

The fields of financial analysis and forecasting are among the main ones where AI is having a revolutionary effect. Traditional techniques sometimes rely on manual analysis and historical data,

which can be time-consuming and inaccurate. Large dataset analysis can be done more accurately and efficiently with the use of AI-driven techniques, particularly machine learning models.

By identifying patterns, correlations, and trends in financial data, these algorithms enable businesses to make better choices about investments, pricing policies, and risk management. Forecasting financial indicators like revenue, expenses, and cash flow is a specialty of machine learning techniques like regression analysis, time series analysis, and neural networks. These models are able to produce accurate forecasts of future financial performance by combining past data with outside variables such as economic indicators and market movements. Companies are able to anticipate obstacles, hone plans, and maximize results because of this foresight.

Risk management is a crucial area where AI is changing corporate finance Goodell et al. (2021). It takes skill and effort to manage financial risks—market, credit, or operational—effectively. Artificial Intelligence (AI) technologies provide predictive modeling and enhanced analytics, which improve risk management. AI systems, for example, are able to evaluate real-time market data to identify possible dangers and possibilities, enabling businesses to quickly modify their investment strategy. In a similar vein, AI can assess transaction histories and customer credit profiles to determine creditworthiness and spot fraud or default threats. AI helps businesses reduce financial risk and make smarter decisions by automating these operations and providing timely information. AI technologies automate routine tasks and processes in corporate finance, thereby streamlining and optimizing them beyond financial analysis and risk management. Repetitive and resource-intensive financial tasks include data entry, reconciliation, and reporting. Automation tools driven by AI reduce this load by taking care of repetitive operations like data extraction, reconciliation, and report preparation.

Additionally, the use of AI in corporate finance promotes accountability and transparency within businesses. AI-powered financial reporting systems provide accurate and timely information to stakeholders about the financial performance, risks, and governance policies of the organization. Increased openness lowers expenses and inspires confidence in investors.

Additionally, by monitoring and evaluating the performance of board members and corporate executives, AI technologies foster responsible governance and decision-making processes and increase accountability. For example, without requiring human intervention, AI-driven robotic process automation (RPA) gathers data from financial documents such as invoices and receipts and enters it into accounting systems. Finance professionals may now focus on strategic tasks like financial analysis and decision-making, while also saving time and reducing errors.

AI technology also uncovers inefficiencies and suggests improvements to financial processes, optimizing them. AI systems, for example, can examine transaction data to identify fraud or waste patterns and suggest actions to improve compliance and save expenses. Similar to this, AI improves cash flow management by examining payment trends and spotting chances to accelerate receivables or postpone payables. Another area where AI is having a big impact on corporate finance is investment management.

Making complex judgments depending on variables like market conditions, asset performance, and investor preferences is part of managing investment portfolios. Algorithms driven by artificial intelligence (AI) comb through enormous volumes of financial and market data to find investment opportunities and improve portfolio performance. AI-powered portfolio management

solutions, for instance, use machine learning to examine past market data and identify trends that may point to dangers or investment possibilities. These tools improve portfolio allocations and customize investment recommendations based on variables including investor preferences and risk tolerance.

Furthermore, by continuously tracking performance and modifying allocations in reaction to market fluctuations, AI systems support portfolio risk management Wyrobek (2020). AI algorithms help investors understand and effectively manage portfolio risks by analyzing real-time market data and simulating numerous scenarios Bruner (2020).

AI is having a significant impact on corporate finance in the field of financial compliance and regulation. Financial regulations must be followed to the letter because breaking them can result in serious penalties and damage to one's reputation. Navigating the complex world of financial regulations may be difficult, though, particularly when they change and get stricter. By automating monitoring and reporting procedures, artificial intelligence (AI) technology helps businesses ensure compliance with financial requirements.

Financial transactions can be analysed by AI systems, which can then highlight possible compliance problems including questionable activity or legal infractions. Additionally, by automating report generation, these systems demonstrate compliance with regulatory standards and make audits easier.

Furthermore, by analyzing regulatory updates and providing prompt insights and recommendations, AI helps businesses remain on top of changes in the law. Artificial intelligence (AI) systems that use natural language processing (NLP) comb through large regulatory texts and extract relevant information to assist businesses in understanding the consequences of regulatory changes and modifying their compliance strategy.

4. FUTURE RESEARCH DIRECTIONS

The integration of Artificial Intelligence (AI) technology is causing a dramatic upheaval in the corporate finance landscape. Looking ahead, many significant developments and trends will have an impact on how artificial intelligence is used in corporate finance, radically changing how companies manage their finances, plan, and mitigate risk.

In corporate finance, data is everything, and artificial intelligence (AI)-driven analytics are getting better at concluding large financial information. Future advancements in AI will concentrate on improving data processing capacities, allowing for the real-time monitoring of market patterns, customer behavior, and financial transactions. The ability of machine learning algorithms to uncover hidden correlations, trends, and anomalies in financial data will be crucial in enabling finance professionals to make knowledgeable judgments.

Predictive analytics is where AI's major contribution to corporate finance resides. Through the use of machine learning models and historical data, AI systems are able to predict future financial outcomes with high accuracy. Finance teams will be able to foresee market trends, spot investment possibilities, and allocate resources as efficiently as possible because to these predictive capabilities. AI-driven forecasting technologies will also make scenario planning and risk assessment easier, helping companies successfully navigate unpredictable economic environments.

5. CONCLUSION

Even if businesses are clearly interested in artificial intelligence (AI) and technological advancements are inevitable, social discourse will ultimately be crucial. In this regard, in order to gain society's trust, businesses will need to demonstrate that they understand their duty while using AI. AI will also have a significant impact on corporate governance since it will make it possible to implement a wide variety of new systems and procedures for governance. A more sophisticated understanding of limited liability companies, the capital market, and ultimately capitalism could emerge from this. If they are prepared and able to assume the lead, today's boards of directors can be crucial to this process.

The growth of reinforcement and unsupervised learning will be the primary means by which artificial intelligence's influence on corporate governance will escalate. This will allow artificial intelligence to further support augmented, amplified, and autonomous intelligence. The idea of a self-sustaining organization is now more than just science fiction. As mentioned above, systems will be able to learn faster than humans in both specific domains and in larger, connected decision-making.

In this kind of situation, the algorithm becomes the center of attention for AI governance. The companies that can create and implement an algorithm that facilitates both reinforcement learning and, more significantly, unsupervised learning will stand to gain the most from it.

The use cases of AI for decision-making in corporate governance are not the only ones being researched. As was previously said, one of the most significant characteristics of huge data is that human analysis of it is not possible. As a result, humanity will need to rely on algorithms to handle ever-bigger data sets. What matters is that people's comprehension of the underlying workings of the algorithms that affect their lives is not always complete. As demonstrated in many works, this could be advantageous or troublesome for society as a whole. The goal of algorithmic governance researchers is to make sure society takes advantage of these new prospects.

According to Katzenbach and Ulbricht (2019), "algorithmic governance is a type of social ordering that depends on actors' coordination, is rule-based and includes extremely intricate computer-based epistemic processes. To the best of our knowledge, corporate governance has not yet been specifically covered in this sector. But moving forward, this seems like a crucial subject.

In AI-driven corporate finance, governance entails setting up rules for data privacy, oversight procedures, and ethical AI deployment frameworks. Algorithmic accountability is critical; it calls on businesses to disclose their AI decision-making procedures and guarantee that they adhere to moral guidelines. To create and modify regulations in response to the changing AI environment, cooperation with regulators is required.

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