



Legal Accountability of Directors for Artificial Intelligence-Based Corporate Decision-Making under Indonesian Company Law

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ABSTRACT

The digital transformation of corporations through artificial intelligence raises the issue of board of directors accountability in technology-based decision-making that has not been fully regulated in Indonesian corporate law. This study aims to analyze the relationship between the use of AI in corporate decisions and the legal responsibility of directors based on the principles of fiduciary duty and corporate governance. The method used is normative juridical with a statutory and conceptual approach; data was obtained through the study of documents on primary and secondary legal materials. The analysis was carried out in a juridical qualitative manner. The results of the study show that the board of directors still bears legal responsibility for AI decisions, even though the process is carried out automatically. The research concludes the need to strengthen AI regulations and governance mechanisms to ensure corporate accountability and make theoretical and practical contributions to the development of corporate law.

INTRODUCTION

The development of artificial intelligence (AI) has brought fundamental changes in modern corporate governance practices, especially in the process of strategic decision-making by the board of directors. AI is now used to conduct risk analysis, market predictions, investment management, and data-driven business strategy optimization. This phenomenon shows that technology no longer functions only as an administrative tool, but has begun to affect the corporate consideration process that was previously entirely in the human realm. However, the increasing use of AI also raises new legal issues regarding who is responsible if algorithm-based decisions cause losses for companies, shareholders, and third parties. Giffen and Ludwig (2023) explain that most boards of directors still face difficulties in understanding the risks, supervisory mechanisms, and legal implications of the use of AI in corporate governance. In the Indonesian context, this issue is becoming increasingly relevant because Law Number 40 of 2007 concerning Limited Liability Companies as amended through Law Number 6 of 2023 concerning Job Creation still places the board of directors as an organ of the company that is fully responsible for the management of the company based on the principles of prudence and good faith.

Theoretically, the responsibility of directors in Indonesian corporate law is based on the principle of fiduciary duty which includes the obligation to act in good faith, with full prudence, and in the best interests of the company. This principle is also related to the concept of good corporate governance which requires transparency, accountability, and supervision of every action of the company's management. However, the use of AI creates new complexity because corporate decisions can be influenced by algorithmic systems that have black box characteristics, which is difficult to explain transparently how a recommendation or decision is produced. Brand (2024) stated that the obligations of directors in the AI era need to be reviewed because the traditional legal mechanism regarding the duty of care has not specifically regulated how the standard of responsibility is applied when company decisions are influenced by artificial intelligence technology.

Previous research has discussed the relationship between AI and corporate governance, but there is still a research gap in determining the limits of directors' legal responsibilities when AI is used as the basis for corporate decision-making. Zhang (2024) identifies that the use of AI can expand the duty of care obligations of directors because directors are not only obliged to use technology appropriately, but must also ensure supervision of AI work processes. Meanwhile, Siebecker (2024) shows that conventional corporate governance principles face limitations in answering accountability issues due to companies' increasing reliance on complex and non-transparent AI systems. However, the study focuses more on the legal perspective of companies in developed countries, so it does not provide an adequate analysis of how the principle of board of directors responsibility in the Indonesian corporate legal system can be applied to AI-based decisions.

Based on these gaps, this study aims to analyze the position and limits of legal responsibility of directors for corporate decision-making using artificial intelligence based on the perspective of Indonesian corporate law. This study specifically examines the relationship between the use of AI in corporate decision-making mechanisms and the application of the principles of fiduciary duty, duty of care, and the principles of good corporate governance. In addition, this study aims to determine whether the current corporate legal framework has been able to provide an adequate basis for accountability for legal risks arising from the use of AI in company activities.

This research uses a normative juridical approach to analyze the legal provisions that govern the responsibilities of directors and their relevance to the development of AI technology in corporate practice. Theoretically, this research contributes to the development of corporate law studies by expanding the understanding of the application of fiduciary duty principles in the context of digital transformation and algorithm-based decision-making. The study of AI in the board of directors space shows that human accountability remains a key element because AI does not have a position as a legal subject that can replace the responsibilities of company organs (Hestia, 2024). Therefore, this research offers a perspective on the reconstruction of the concept of board of directors responsibility in the face of increasingly complex technological developments.

Practically, this research is expected to contribute to companies, directors, regulators, and legal practitioners in building a responsible AI governance mechanism. Strengthening the company's internal policies, supervising the use of AI, and increasing technological understanding for directors are important aspects to prevent the occurrence of a legal accountability gap. Thus, this research provides an argument that the application of AI in corporate decision-making must remain within the corporate legal framework that guarantees human accountability, protection of the company's interests, and legal certainty in the development of the digital economy.

LITERATURE REVIEW

Artificial Intelligence in Corporate Governance Transformation

Artificial intelligence (AI) has developed into a strategic instrument in corporate governance because it is able to support the process of information analysis, risk mitigation, and data-driven decision-making. From a corporate legal perspective, the use of AI is not only related to operational efficiency, but also affects the legal relationship between company organs, shareholders, and stakeholders. AI provides predictive capabilities that can improve the quality of business decisions, but at the same time creates problems regarding transparency, control, and accountability if the resulting decisions cause losses.

According to Raisch and Krakowski (2021), AI in organizations creates a new pattern of human-machine collaboration that causes some decision-making functions to shift from humans to algorithmic systems. This condition poses governance challenges because business decisions no longer come entirely from human considerations, but are influenced by complex computational processes. In the corporate context, these developments require adjustments to traditional

accountability concepts in order to ensure that there are parties responsible for the use of technology.

Principles of Fiduciary Duty and Responsibility of the Board of Directors in Company Law

The concept of fiduciary duty is the main basis for determining the legal responsibilities of the board of directors as an organ of the company. In Indonesian corporate law, this principle is reflected in the obligation of the board of directors to carry out the management of the company in good faith and full of responsibility as stipulated in Law Number 40 of 2007 concerning Limited Liability Companies. The Board of Directors has the authority to make business decisions, but this authority is always limited by the duty of care, duty of loyalty, and the obligation to act in the interests of the company.

In the development of digital corporations, the implementation of fiduciary duties faces new challenges because directors can use AI technology as a basis for considering business decisions. However, the use of AI does not remove the legal obligations of directors because AI does not have a position as an organ of the company or a legal subject. The Board of Directors still has an obligation to ensure that AI systems are used appropriately, adequately supervised, and do not conflict with the interests of the company. According to Möselein (2021), the development of digital technology requires the concept of corporate governance to expand the understanding of the directors' supervisory obligations on technological instruments used in business activities.

Algorithmic Accountability and Black Box Problems in Corporate Decision Making

One of the main issues in the use of AI in company decisions is the emergence of algorithmic accountability issues. Modern AI systems often work through machine learning models that produce decisions based on certain data patterns, but the internal processes are difficult to explain simply. This characteristic is known as the black box phenomenon, which is a condition when technology users do not fully understand how a decision is obtained.

In the context of corporate law, this phenomenon raises questions about the accountability standards of directors if decisions made with the help of AI result in losses. The literature shows that transparency and the ability to explain the decision-making process are important elements in ensuring technological accountability. Wirtz et al. (2021) explain that the application of AI in organizations requires a supervisory mechanism that ensures that algorithmic decisions can still be accounted for by humans with legal authority.

For the Indonesian legal system, this issue shows the need to interpret the prudential principle of directors to include the obligation to understand technology risks, supervise AI systems, and ensure that there is an evaluation mechanism before corporate decisions are implemented.

Corporate Governance and the Need for AI Regulation in Corporate Activities

Good corporate governance (GCG) is an important framework to ensure that companies carry out their activities in a transparent, responsible, and sustainable manner. In the use of AI, GCG principles are relevant because the technology requires a clear supervisory mechanism to prevent abuse and decision-making errors. The Board of Directors as the party with the highest authority in the management of the company has a strategic position to ensure that the use of AI remains in accordance with the principles of good governance.

Research on AI governance shows that it is not enough to focus only on technical aspects, but must consider legal and institutional dimensions. According to Hagendorff (2022), the main challenge in regulating AI is not only about technological capabilities, but also how to ensure that the values of accountability, human supervision, and institutional responsibility remain in place. Therefore, the application of AI in companies requires internal policies that govern the evaluation process, documentation of decisions, and the division of responsibilities between directors and technology providers. In the Indonesian context, although there is no specific law on AI, the principle of responsibility of directors can still be analyzed based on Law Number 40 of 2007 concerning Limited Liability Companies and the applicable corporate governance principles.

Research Position: Legal Accountability of Directors in AI-Based Corporate Decision-Making

Based on previous literature reviews, research on the relationship between AI and corporate law still focuses more on aspects of technology ethics, AI regulation, and organizational governance in general. Studies that specifically analyze how the principles of fiduciary duty and responsibility of directors are applied to AI-based corporate decisions in the Indonesian corporate legal system are still limited.

This gap shows the importance of research that links the development of AI technology with corporate legal doctrine, especially regarding the limits of directors' responsibilities when business decisions are influenced by algorithms. This research places the board of directors as the center of analysis because legal authority remains in the company's organs, not in the AI system. Thus, this research seeks to provide an understanding that corporate digital transformation does not eliminate the principle of legal accountability, but demands the development of new interpretations of fiduciary duty, duty of care, and technology-based corporate governance mechanisms.

METHODOLOGY

Types of Research

This research uses a normative juridical method with a qualitative approach through a doctrinal legal research design. This approach is used to analyze legal norms, legal principles, and doctrines related to the responsibility of directors in artificial intelligence (AI)-based corporate decision-making. The approaches used include a statute approach and a conceptual approach to examine the relationship between the use of AI, fiduciary duty principles, duty of care, and corporate governance. Doctrinal legal research is appropriately used to identify, interpret, and synthesize legal rules and legal concepts related to a particular problem (Hutchinson & Duncan, 2012).

The source of research data consists of primary legal materials in the form of Law Number 40 of 2007 concerning Limited Liability Companies as amended through Law Number 6 of 2023 concerning Job Creation, as well as secondary legal materials in the form of scientific journals, books, and literature related to AI governance, corporate governance, and technology accountability.

Population and Sample

This study does not use respondents or participants because it uses a normative juridical approach. The research analysis unit is in the form of legal documents and academic literature selected through non-probability sampling techniques using the purposive sampling method. The research sample consists of relevant laws and regulations as well as scientific publications regarding the responsibilities of directors and the use of AI in corporate activities. The selection of sources is based on relevance criteria, which are directly related to the principles of fiduciary duty, the responsibility of the board of directors, and the AI supervision mechanism in corporate governance. This method is in accordance with the character of doctrinal research that focuses on the analysis of legal norms and concepts, not empirical population measurements (Hutchinson & Duncan, 2012).

Research Instruments

The research instrument is in the form of legal document analysis guidelines which is used to identify and examine aspects of the authority of directors, duty of care, fiduciary duty, and accountability of the use of AI in company decisions. Data was collected through documentation studies of regulations, international journals, and academic literature. Because the study did not use questionnaires or interviews, statistical validity and reliability testing was not applied. The validity of the data is guaranteed through normative validity by selecting authoritative legal sources and conducting a systematic analysis of legal documents. Qualitative document analysis allows researchers to understand the meaning and relationships between legal concepts in a certain context (Bhat, 2020).

Data Collection Procedure

Data collection is carried out through library research with several stages, namely: (1) identification of legal issues related to the use of AI in corporate decision-making; (2) collection of primary and secondary legal materials; (3) classification of materials based on the theme of the research; and (4) legal interpretation of the provisions governing the responsibility of the Board of Directors. The process is carried out to obtain a legal construction regarding the limits of the directors' responsibilities when AI is used as a tool to support company decisions.

Data Analysis Techniques

Data was analyzed using juridical qualitative analysis methods with content analysis techniques. The analysis stages included data reduction, grouping based on legal themes, interpretation of norms, and drawing conclusions. The analysis focused on the relationship between the use of AI in corporate decisions and the application of the principles of fiduciary duty, duty of care, and corporate governance. The analysis is carried out manually with the help of NVivo 14 software to help organize and code the theme of the document. The qualitative analysis approach is used because the research aims to understand legal constructions and provide interpretation of the development of new technology-based legal phenomena (Braun & Clarke, 2021).

RESEARCH RESULT AND DISCUSSION

Legal Accountability of the Board of Directors for Corporate Decisions Based on Artificial Intelligence

Based on the results of normative juridical analysis of laws and regulations and academic literature, this study found that the use of artificial intelligence (AI) in corporate decision-making does not cause a transfer of legal responsibilities from the board of directors to the AI system. AI only serves as a *decision-supporting tool* that assists directors in conducting analysis, risk prediction, and the preparation of business strategies. Therefore, final decisions that have legal consequences for the company remain within the authority of the board of directors as an organ of the company. This finding strengthens the results of the research in the abstract which shows that the board of directors still bears legal responsibility even though the decision-making process is carried out through an automated system.

These findings are closely related to the theory of fiduciary duty, which places the board of directors as a party who has a legal obligation to manage the company in good faith, prudence, and loyalty. In the context of Indonesian corporate law, this principle is reflected in Law Number 40 of 2007 concerning Limited Liability Companies as amended through Law Number 6 of 2023. Although the law does not specifically regulate the use of AI, the obligations of directors in carrying out the management of the company still include the obligation to understand the risks of each instrument used in decision-making.

These results are in line with Brand's (2024) research which explains that the principle of board responsibility has great relevance to AI regulation because the doctrine of board liability has evolved to deal with complex decision-making situations and involves information that is not entirely perfect. Brand emphasized that the liability of directors is not only related to the outcome of decisions, but also the process of how those decisions are made, including how technology is used in the process.

However, this study expands on Brand's findings by placing them in the context of Indonesian corporate law. While in some developed jurisdictions there are developments in doctrines such as *the business judgment rule* to provide protection for the business decisions of the board of directors, in the Indonesian legal system the protection does not eliminate the obligation of the directors to show that the decision has been made based on sufficient information, rational processes, and the principle of prudence. Thus, the use of AI actually expands the scope for evaluation of the actions of the directors because the directors must be able to show that the technology used has been properly supervised.

AI as a Factor in Expanding the Duty of Care of the Board of Directors

The second finding suggests that the use of AI is causing changes to directors' duty of care standards. Prior to the advent of AI technology, the standard of care generally focused on the quality of human business judgment. However, in an AI-based business environment, the standard has evolved into an obligation to ensure that the technology systems used can produce reliable information and do not pose uncontrollable legal risks.

The results of the study found that there are three additional forms of obligations for directors in the use of AI, namely the obligation to understand technology, namely the obligation of the board of directors to understand the functions, limitations, and risks of the AI system used; the obligation to carry out supervision (oversight duty), namely ensuring that AI is not used without human control; and the obligation to conduct an evaluation (evaluation duty), namely ensuring that the results of AI decisions remain in accordance with the company's interests.

These findings support the research of Zhang (2024) who stated that the use of AI in corporate governance does not eliminate the fiduciary duty of directors, but increases the *duty of care obligation*, especially in the aspect of supervision of the process of using AI.

Furthermore, Hestia's (2024) research strengthens this argument by showing that the development of AI can create an "accountability vacuum" if the law continues to use traditional responsibility standards without considering the complexity of algorithms. Hestia proposes the need for technological competency standards for directors so that AI-based decisions remain within the framework of legal accountability.

Based on these comparisons, the study found that the main issue is not whether AI can replace the functions of the board of directors, but whether the board of directors has adequate capabilities and oversight mechanisms for the technology used. In other words, the greater the company's reliance on AI, the higher the standard of prudence that must be applied by the board of directors.

Black Box AI Issues and Corporate Decision Transparency Challenges

The results of the study further show that one of the biggest obstacles in the application of AI in corporate decisions is the characteristics of the black box algorithm, which is a condition when the internal process of AI in producing a recommendation or decision is difficult for humans to understand. This problem has legal consequences because the board of directors can face difficulties in explaining the rational basis of a decision if the decision is largely dependent on an algorithmic system. Research analysis shows that transparency is an important element in maintaining board accountability. It is not enough for the board of directors to show that decisions are made based on AI recommendations, but it must be able to demonstrate that there is a process of verification, risk evaluation, and human consideration before decisions are implemented.

These findings support Wirtz et al. (2021) who explain that the application of AI in organizations requires a supervisory mechanism so that algorithmic decisions remain under the control of humans who have legal authority. In the perspective of this study, this principle means that AI cannot be used as an excuse to avoid liability if a company's decision causes a loss. In addition, this study strengthens the view of Hagendorff (2022) that the main challenge of AI is not only a matter of technical capabilities, but how to ensure the existence of an institutional structure that is able to ensure accountability. In the context of companies, the structure is in the corporate governance mechanism that gives authority as well as responsibility to the board of directors. Thus, this study found that the application of AI requires the concept of human-centered accountability, which is an accountability system that still places humans as the center of supervision and legal decision-making.

Artificial Intelligence Governance as Part of Good Corporate Governance

The research findings show that the application of AI in companies must be understood as part of the good corporate governance (GCG) mechanism, not just as a technological issue. AI has the ability to improve company efficiency, but without proper governance, it can create legal risks, such as discriminatory decisions, mispredictions, violations of shareholder interests, and weak supervisory mechanisms.

The results of the analysis show that the most relevant GCG principles in the use of AI are:

Table 1. Implementation of Good Corporate Governance Principles in the Use of Artificial Intelligence

GCG Principles	Implementation in the Use of AI
Transparency	Provision of information on the use and function of AI
Accountability	Determination of the party responsible for AI decisions
Responsibility	Compliance with the law and the principle of prudence
Independence	Human oversight of algorithmic recommendations

These findings support the research of Schneider et al. (2024) who stated that companies need a dedicated governance framework to manage AI risks and opportunities, especially since generative AI systems are evolving faster than organizational oversight mechanisms. This research is also in line with the findings of Mökander et al. (2024) that the implementation of AI governance requires integration between internal policies, risk management, technology use standards, and improving user competencies. In the context of Indonesian corporate law, these results show that the board of directors needs to develop AI internal policies as part of the company's management obligations.

Comparison of Research Findings with Previous Research

Table 2. Comparison of Findings of Previous Research and Research Findings on the Accountability of the Board of Directors in the Use of Artificial Intelligence

Study Focus	Previous Research	Findings of this study
AI dan fiduciary duty	Zhang (2024) emphasizes the increase in duty of care due to the use of AI	Expanding it by linking duty of care with Indonesian company law
AI regulation and directors	Brand (2024) sees directors as an important instrument in AI regulation	Affirming the permanent board of directors as the center of legal responsibility
Algorithmic accountability	Hestia (2024) discovered the risk of a lack of responsibility due to AI	Offering the concept of human-centered accountability
AI governance	Schneider et al. (2024) emphasize the need for an AI governance framework	Linking AI governance to the legal obligations of directors

Based on these comparisons, this study has a new contribution because it not only discusses the risks of AI in corporate governance, but specifically analyzes how Indonesian corporate legal doctrine can be used to determine the parties responsible for AI-based decisions.

Research Limitations

This study has limitations because it uses a normative juridical approach so that it does not directly test the practice of using AI in companies through interviews or observations. Therefore, the research has not been able to describe the variations in the application of AI governance in different industry sectors. However, these limitations open up opportunities for further research with an empirical approach to examine how Indonesian company directors understand AI risks, how supervisory mechanisms are implemented, and how regulators can build AI governance standards that are in line with the development of the digital economy.

CONCLUSIONS AND RECOMMENDATIONS

This study concludes that the use of artificial intelligence in corporate decision-making does not shift the legal responsibility of the directors, because AI remains a supporting instrument and not a legal subject or company organ. The Board of Directors remains bound by the principles of fiduciary duty, duty of care, good faith, and the interests of the company. The use of AI actually expands the duty of care through understanding technology risks, human supervision, and evaluation of algorithmic results. The characteristics of the black box also affirm the importance of human-centered accountability and strengthening AI governance as part of good corporate governance.

Based on these findings, companies need to establish internal policies regarding the use of AI, decision documentation, risk evaluation, human oversight, and algorithmic audits. Regulators also need to develop more specific guidelines regarding the use of AI in corporate governance. Further research is recommended to use an empirical or comparative approach to assess the application and effectiveness of AI governance in various Indonesian business sectors.

ADVANCED RESEARCH

The next research can empirically test the application of the responsibility of the board of directors in the use of AI in various corporate sectors in Indonesia and conduct comparative studies with other jurisdictions. Follow-up studies can also develop human oversight standards, algorithmic audits, and the technological competence of directors within the framework of corporate law.

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