Artificial Intelligence Governance in the Indonesian Business Sector under Ethical and Data Protection Challenges

Siti Syarifah Wafiqah Wardah[1]*, Yusi Irensi Seppa[2]

[1,2]Universitas Negeri Makassar.
Email: syarifah.wafiqah@unm.ac.id

ABSTRACT

The rapid adoption of Artificial Intelligence (AI) in the Indonesian business sector has reshaped operational efficiency while raising concerns regarding ethics and personal data protection. Grounded in theories of Responsible AI, algorithmic accountability, and data governance, this study aims to examine ethical and legal challenges arising from AI deployment, evaluate the adequacy of Indonesia's regulatory framework, and propose a governance model suitable for business contexts. This research employs a normative juridical method supported by statute, conceptual, and comparative approaches. Data were analyzed qualitatively through interpretation and synthesis of legal norms, academic studies, and international frameworks such as the EU AI Act, OECD AI Principles, and ASEAN AI Governance Guidelines. The findings show that although AI enhances decision-making and automation in businesses, Indonesia lacks specific regulations on algorithmic transparency, risk-based AI classification, and corporate accountability. Existing laws, including the Personal Data Protection Law and the Electronic Information and Transactions Law, have not fully addressed these challenges. The novelty of this research lies in offering an integrated AI governance framework that combines ethical principles, data-protection standards, and corporate compliance to guide responsible AI implementation in Indonesian businesses.

Keywords: Artificial Intelligence, responsible AI, data protection, corporate governance, ethical compliance

INTRODUCTION

The development of Artificial Intelligence (AI) has been one of the main markers of digital transformation in the last decade. Various technologies such as machine learning, natural language processing, and predictive analytics have been widely adopted to support decision making, process automation, and service personalization. At the global level, discourse on AI governance has intensified, marked by the emergence of various regulatory frameworks and ethical principles such as the EU AI Act, OECD AI Principles, UNESCO Recommendation on the Ethics of AI, and regional initiatives such as the ASEAN Guide on AI Governance and Ethics (Asyifa & Rohida, 2025).

In Indonesia, the use of AI in the business sector shows a growing trend, particularly in the digital finance, fintech lending, banking, e-commerce, telecommunications, and information security industries. AI is used in credit scoring systems, fraud detection, customer service

automation, recommender systems, and even cyber security and data protection (Elpina, 2024). Empirical evidence shows that this utilization can improve efficiency, reduce operational costs, and accelerate business decision-making processes. However, on the other hand, the use of AI, which is highly dependent on large-scale data processing (big data), raises new issues related to algorithmic bias, the lack of transparency in decision-making processes, and an increased risk of privacy and personal data protection violations.

A number of legal and policy studies in Indonesia show that the use of AI in the processing and analysis of personal data has the potential to threaten individual privacy rights, especially when the technology is operated without adequate ethical and governance standards (Junaidi et al., 2024). Research on the urgency of specific AI regulations and their use to protect personal data confirms that existing legal instruments in Indonesia are still scattered across various sectoral regulations and do not yet provide optimal protection (Disemadi, 2021). A similar situation can be seen in studies on personal data protection in the financial services and fintech sectors, which found that there are still regulatory gaps and weak law enforcement regarding data misuse practices by business actors (Agusta, 2020).

From a business ethics perspective, the massive use of consumer personal data for profiling, targeted marketing, and automated decision-making raises serious questions regarding fairness, transparency, and accountability of business actors. Recent studies on business ethics and consumer personal data protection highlight that although the legal framework for data protection is strengthening, practices in the field still tend to place consumers as objects of data exploitation, rather than subjects whose rights are fully guaranteed (Matondang et al., 2025). Other research shows that the adoption of AI in business without strong governance policies can actually deepen information inequality and increase the potential for algorithmic abuse of power by corporations (Pradana et al., 2025).

Normatively, Indonesia has Law Number 27 of 2022 concerning Personal Data Protection, which is an important milestone in strengthening the privacy rights of citizens in the digital space. However, several studies indicate that the implementation of the Personal Data Protection Law still faces various obstacles, including incomplete derivative regulations, weak supervisory institutions, and the lack of a culture of data compliance among business actors (Bachtiar et al., 2025). In the context of AI, this problem becomes even more complex because the collection, storage, and processing of personal data occurs automatically and is often not transparent to the data subjects. A study on legal responsibility for AI-based personal data processing confirms that without clear regulations on algorithmic accountability, it will be difficult to effectively protect individuals through legal means (Junaidi et al., 2024).

Various literature in Indonesia has discussed key issues related to AI, data protection, and regulation. Disemadi analyzes the urgency of specific regulations and the use of AI to realize personal data protection, concluding that scattered regulations in various laws are no longer adequate to deal with the dynamics of digital technology (Disemadi, 2021). Ghazmi (2021) highlighted the need for AI regulation in the online business sector as a preventive measure to mitigate the risks posed by technological advances to consumers. Wulandari (2025) examines artificial intelligence and data protection by reviewing the compatibility of Indonesian policies with international standards, and emphasizes the need to harmonize national legal norms with global principles. Pradana et al., (2025) examined policy challenges related to the use of AI in public sector governance and emphasized the importance of an AI governance framework

to build public trust and improve service quality.

On the other hand, studies on personal data protection in the context of fintech and financial services reveal that the existing supervisory framework is not yet fully capable of preventing data misuse by electronic system operators, especially in peer-to-peer lending services (Agusta, 2020). Research on personal data law enforcement after the enactment of the PDP Law also shows that the biggest challenges lie in enforcement, institutional capacity, and business awareness of compliance obligations. Beyond that, discourse on Lex AI as a sui generis AI governance framework has begun to develop and encourages the need for regulatory designs that can address the unique characteristics of AI technology, including the question of who should be held responsible when AI systems cause harm (Lisaldy et al., 2024).

Although the number of publications on artificial intelligence continues to increase, a literature review shows that most research in Indonesia still focuses on three main issues: first, discussions on the urgency of establishing specific regulations related to AI; second, studies on personal data protection in general; and third, analysis of AI application in the public sector and certain financial services. Relatively few studies comprehensively discuss AI governance in the context of the Indonesian business sector by combining three important aspects at once, namely business ethics, personal data protection, and corporate compliance with the applicable regulatory framework. In addition, the discourse on how companies should build internal governance, such as the formation of an AI ethics council, the implementation of algorithmic audits, and the application of algorithmic impact assessments, is still very limited in Indonesian business law literature.

This situation has created an important research gap that needs to be filled. First, there is no AI governance model that has been designed normatively based on Indonesian law and specifically directed at business practices, rather than just public administration. Second, the relationship between AI ethics, personal data protection, and corporate governance mechanisms has rarely been studied comprehensively. Third, the implications of the PDP Law on the obligations of corporations operating high-risk AI systems have not been widely analyzed from a risk-based regulation perspective. This gap indicates the need for research that not only describes the problem but also offers a conceptual and normative framework for AI governance in the business sector.

Based on this gap, this study has novelty in several aspects. First, the study focuses on AI governance in the Indonesian business sector by placing the dimensions of ethics and personal data protection at the core of the analysis, rather than as additional issues. Second, the study combines a normative legal approach with a comparative study of global AI governance frameworks (such as the EU AI Act and international AI ethics guidelines) to formulate a governance model that is contextual to the Indonesian legal system. Third, the study offers a practically oriented AI governance framework as a reference for business actors in developing internal policies and corporate compliance mechanisms.

The problem-solving plan in this study was carried out through an analysis of (1) the practice of AI use in the Indonesian business sector, particularly in relation to personal data processing; (2) the legal framework governing personal data protection, electronic transactions, and sectoral regulations in the fields of finance and technology; and (3) the principles of AI governance in relevant global literature to be adopted. Using a normative legal approach combined with conceptual and comparative approaches, this study seeks to develop recommendations for an AI governance model that can be implemented by companies in Indonesia, while also providing input for policymakers.

In line with this, the objectives of this study are: (1) to describe the use of AI in the Indonesian business sector and its implications for business ethics and personal data protection; (2) to analyze the adequacy and weaknesses of the regulatory framework governing AI and personal data protection in Indonesia; and (3) to formulate an AI governance model that can serve as a reference for business actors in managing the ethical and legal risks of AI use.

Within the framework of normative research, the working hypothesis proposed is that the use of AI in the Indonesian business sector is currently not supported by adequate governance and regulatory frameworks, thereby creating new vulnerabilities for consumer privacy rights and personal data protection. Conversely, the development of an AI governance framework based on the principles of fairness, transparency, accountability, and compliance with the Personal Data Protection Law has the potential to become an important instrument for balancing business innovation and the protection of individual rights in the era of artificial intelligence.

Based on this description, it is clear that the development of AI in the Indonesian business sector has created an urgent need for a governance framework that can balance innovation with the protection of fundamental consumer rights. The limitations of the existing regulatory structure, the lack of operational ethical guidelines, and the lack of comprehensive studies on AI governance from a business perspective indicate an academic gap and a need for relevant research. Therefore, this study aims to analyze in depth the ethical challenges and personal data protection issues in the use of AI in the Indonesian business sector, examine the adequacy of applicable regulations, and offer a more adaptive, accountable AI governance model that is in line with the national legal context. Thus, this study not only contributes to the development of literature on artificial intelligence governance, but also provides a conceptual foundation that can be used by policymakers and business actors in designing responsible AI implementation strategies.

METHOD

This study uses a normative legal approach because the focus of the study lies in analyzing legal norms, ethical concepts, and principles of Artificial Intelligence (AI) governance that apply in the Indonesian business sector. This approach is used to examine the suitability of existing regulatory frameworks, such as the Personal Data Protection Law, the Electronic Information and Transaction Law, and sectoral regulations from the Financial Services Authority (OJK) and Bank Indonesia, with the requirements of AI governance, which demand transparency, accountability, prudence, and personal data protection. To strengthen the analysis, this study adopts three approaches, namely the statute approach to examine relevant laws and regulations, the conceptual approach to deepen understanding of core concepts such as AI governance, algorithmic accountability, and ethical AI, and the comparative approach to compare Indonesian regulations with international models such as the EU AI Act, OECD AI Principles, UNESCO Ethical AI Framework, and ASEAN Guide on AI Governance and Ethics.

The research data sources consist of primary, secondary, and tertiary legal materials collected through documentary studies of laws, policy guidelines, scientific journal articles, international research reports, and academic literature related to business ethics and personal data protection. All legal materials were analyzed using qualitative descriptive methods, namely by interpreting, classifying, and synthesizing data to produce coherent and comprehensive legal arguments. Through this method, the research aimed to identify ethical and data protection challenges in the application of AI in the Indonesian business sector, while also formulating an adaptive, responsible AI governance model that is in line with the characteristics of the national

legal system.

RESULT AND DISCUSSION

Analysis of Patterns and Characteristics of AI Use in the Indonesian Business Sector

The use of Artificial Intelligence (AI) in Indonesia's business sector has accelerated significantly in recent years, particularly in the banking, fintech, e-commerce, telecommunications, and cybersecurity industries. In the financial industry, AI has become the main foundation for automating risk analysis processes through alternative data-based credit scoring, enabling financial institutions to assess creditworthiness more quickly and accurately. Temuan (Razaqi et al., 2024) shows that the use of AI in big data analytics and machine learning has been proven to improve the accuracy of debtor risk predictions and expand access to financing for segments that were previously underserved by conventional banks.

In addition to credit scoring, AI technology is also widely used for fraud detection, which works by analyzing suspicious transaction patterns in real time, reducing the potential for digital fraud in the fintech and banking sectors. In e-commerce, the integration of recommendation engines and automated customer service in the form of intelligent chatbots helps improve customer experience and speed up transaction flows. Novita & Zahra (2024) emphasized that the application of AI in company operations in Indonesia contributes significantly to increased efficiency, reduced operating costs, and increased productivity through the automation of repetitive tasks.

However, the large-scale implementation of AI also faces a number of technical challenges. The availability of quality data remains a major obstacle, especially since many companies do not yet have strong data management standards. Uneven digital infrastructure and limited human resources with expertise in AI and data analytics also slow down the optimal utilization of this technology. In addition to technical barriers, cybersecurity is also an important focus, given that AI systems process large volumes of sensitive data. Studi Wardi & Aditya's (2025) research reveals that fintech companies in Indonesia must deal with the risks of algorithmic bias, predictive model weaknesses, and system instability when training data is of poor quality or unrepresentative.

Beyond these challenges, a number of large companies in Indonesia have successfully implemented AI to support their business transformation. For example, major banks such as BCA and Bank Mandiri have developed AI-based chatbots for customer service, while e-commerce platforms such as Tokopedia and Shopee use machine learning to personalize product recommendations and detect suspicious activity. The telecommunications sector, such as Telkomsel, utilizes AI for predictive network maintenance, while other digital technology companies rely on AI to strengthen their cybersecurity systems. These various implementations show that AI not only accelerates business processes but also serves as an adaptive strategy that strengthens companies' competitiveness in the digital economy era.

Identifying Ethical Challenges in AI Implementation

One of the most crucial challenges in implementing AI in the Indonesian business sector is algorithmic bias. In credit assessment, AI systems that use historical data can reinforce discrimination against underserved groups if the training data is not representative. For example,

research by the University of Malang found that the use of AI algorithms in credit scoring at Islamic banks still has the potential to deny credit access to borrowers from economically disadvantaged groups due to bias in the training data (Marzuki, 2025). Furthermore, in the recruitment and digital marketing processes, algorithms developed without considering data diversity can result in automated decisions that disadvantage certain gender or racial groups (Yamin, 2025).

In addition to algorithmic bias, another challenge that arises is algorithmic opacity or the "black box" phenomenon. Many AI systems in business are developed with internal logic that is difficult to explain to consumers or parties affected by automated decisions. Research in the context of AI regulation in Indonesia shows that the lack of explainability and accountability mechanisms makes it difficult for aggrieved parties to understand the basis of machine decisions (Kirana & Silalahi, 2025). This situation has the potential to undermine consumer confidence in the company and pose a serious reputational risk.

The next challenge is the lack of human oversight in AI systems that automate important decisions. In many companies, decisions such as credit approval, new customer identification, or service termination have been transferred to automated systems without sufficient human supervision. In studies related to AI integration and bounded rationality theory, Samita et al., (2025) emphasizes that although AI can reduce the cognitive load on humans, without adequate human supervision, the system tends to make mistakes that are difficult to correct. The absence of human supervision increases the risk of decisions that are unfair or do not comply with business ethics principles.

Digital inequality is also a tangible impact of AI implementation. The risk of digital discrimination against certain groups is becoming more apparent due to unbalanced data or models designed with assumptions of homogeneity. Research by Trisena et al., (2025) shows that in sharia-based businesses, algorithms that do not consider data diversity can reinforce inequality and violate the values of fairness that are at the core of business ethics. Thus, companies that use AI are required to conduct audits and mitigate bias so that the decisions made do not reinforce the marginalization of social or economic groups.

The impact of the above challenges is closely related to how AI affects business ethics principles such as fairness, accountability, and corporate responsibility. Automated decisions that are biased, inexplicable, or made without human oversight have the potential to disregard fairness as a core value and make it difficult to determine who is responsible when losses occur. A study by Arbani et al., (2025) in the context of the judicial system emphasizes that the development of AI regulatory and governance frameworks must involve mechanisms for accountability, transparency, and human involvement so that technology does not replace corporate responsibility. Therefore, for the Indonesian business sector, the successful implementation of AI is not only a matter of efficiency and innovation, but also a matter of how to maintain ethical integrity and public trust.

From this series of ethical issues, the main root of the challenge of implementing AI in the Indonesian business sector does not lie solely in the technology itself, but rather in the unpreparedness of corporate governance structures and the legal ecosystem to oversee decisions generated by algorithms. AI operates based on data and mathematical models, so without algorithmic audit standards, binding ethical guidelines, and clear transparency mechanisms, companies face a significant risk of generating automated decisions that are unfair, irresponsible, and potentially violate consumer privacy rights. This situation shows that technological innovation must go hand in hand with strengthening governance, rather than being treated as a

separate process. Thus, for the author, the most urgent issue at present is not only to expand the adoption of AI, but to ensure that every adoption is carried out within a responsible, explainable, and accountable framework, so that the benefits of AI for the business sector can be achieved without sacrificing ethical values and the protection of basic rights of society.

Tantangan Perlindungan Data Pribadi dalam Penggunaan AI

The processing of big data by companies adopting AI technology poses privacy risks that cannot be ignored. As found in a recent study, although Law No. 27 of 2022 concerning Personal Data Protection has provided a new legal basis, challenges to privacy violations remain due to the enormous scale of data and the speed of processing that enables aggressive consumer profiling (Fajriyah et al., 2025). In the context of business in Indonesia, data collection without explicit consent from the data subject, also known as lack of informed consent, is a mechanism that is often overlooked, even though the principle of explicit consent is one of the pillars of the Personal Data Protection Law (Simanjuntak, 2024).

Not only that, companies also often use data for purposes other than those originally promised to consumers (purpose shifting). For example, data collected for customer service can be diverted for algorithm training or additional marketing profiling without notification or renewed consent from individuals. Such conditions contradict the principles of purpose limitation and data minimization mandated by the Personal Data Protection Law and various international recommendations. (Abdullah et al., 2025). In the era of cloud computing and cross-border data transfer, the risk of data leaks and unauthorized disclosure is increasing, as control over server locations and data processors may fall outside national jurisdiction. (Varany & Sumanto, 2025).

When looking at the level of business readiness, many Indonesian companies still do not fully comply with the requirements of the Personal Data Protection Law. Legal studies highlight that independent supervisory agencies have not been effectively established, derivative technical regulations are still incomplete, and business actors' awareness of obligations such as data deletion, security audits, or incident reporting is still low (Varany & Sumanto, 2025). As a result, there is a gap between what is regulated by law and what is practiced by companies. For example, companies still collect more data than necessary (data minimization) or process data without a clear legal basis (lawfulness). A business approach that prioritizes innovation and efficiency often neglects the protection of the rights of individuals as data subjects.

Thus, the challenge of personal data protection in the AI era in the Indonesian business sector is not merely a matter of separate technology or regulations, but rather how to integrate legal principles (such as consent, transparency, accountability) into fast-paced and complex corporate data management practices. Companies operating on a large scale with data-driven business models must build data management systems that are not only legal, but also ethical and oriented towards the rights of data subjects in order to maintain public trust and business legitimacy.Evaluasi Terhadap Kerangka Regulasi Indonesia yang Mengatur AI dan Perlindungan Data

Indonesia's legal framework regarding the use of AI in the business sector currently still relies on a number of general regulations that "indirectly touch on AI." The main instrument in the field of data protection is Law No. 27 of 2022 concerning Personal Data Protection, which regulates the principles, rights of data subjects, obligations of data controllers and processors, as well as administrative and criminal sanctions for personal data violations. (Undang-Undang Republik Indonesia, 2022). Di sisi lain, UU ITE beserta perubahannya (UU 11/2008, UU 19/2016,

210 | **PRIME** (*Public Resource Innovation Management and Excellence*)
Volume 2 Number 3, November 2025. Pages 203 - 216

dan UU 1/2024) tetap menjadi payung umum bagi transaksi elektronik, konten digital, dan keamanan informasi. In the financial services sector, OJK regulates consumer protection and personal data through POJK 6/POJK.07/2022 and POJK 22/2023 concerning Consumer and Community Protection in the Financial Services Sector, which emphasizes the obligation to protect consumer privacy and data. Bank Indonesia also regulates data management in payment systems through PBI 22/23/PBI/2020 concerning Payment Systems, which contains provisions on the processing of payment system data and information.

Beyond regulations based on laws and regulations issued by financial sector authorities, Indonesia has begun to develop specific soft law on AI through the Minister of Communication and Information Technology Circular Letter No. 9 of 2023 concerning Artificial Intelligence Ethics. This circular letter establishes AI ethical values such as inclusivity, humanity, security, accessibility, and accountability, and is addressed to AI-based programming businesses and public and private Electronic System Operators. However, this Electronic System is a voluntary ethical guideline (soft regulation), not a legal framework equivalent to a law.

Various legal studies assess that this regulatory configuration has not yet formed a comprehensive "Indonesian AI Act." The PDP Law is seen more as a lex specialis on personal data that is still "technology-neutral" and does not explicitly regulate issues of high-risk algorithms, algorithmic transparency, or algorithmic audits for AI systems that have a significant impact on human rights. Disemadi (2021) For example, it emphasizes the urgency of specific regulations and the use of AI in the context of personal data protection, and points out that there are still gaps in the regulation and enforcement of rapidly developing AI technology. Other articles on artificial intelligence and personal data protection also confirm that Indonesia faces challenges in terms of regulatory gaps, weak enforcement mechanisms, and the absence of clear standards for algorithmic transparency for AI that processes sensitive data. (Wulandari, 2025).

The most striking omission is the absence of specific risk classifications for AI systems as recognized in risk-based regulatory approaches. A number of studies have stated that the ITE Law and PDP Law only regulate data protection and cybercrime in general, without distinguishing between the obligations of low-risk AI and high-risk AI, and have not yet established specific obligations for algorithmic impact assessments or AI incident reporting. (Hidayah et al., 2025). Research on the implementation of the PDP Law also highlights institutional obstacles, delays in drafting derivative regulations, and low compliance among business actors with the principles of data minimization, lawfulness, and purpose limitation. (Mahameru et al., 2023).

Compared to the global framework, Indonesia is still in the early stages of AI governance. The European Union has passed the EU AI Act, the world's first comprehensive regulation governing AI with a risk-based approach, classifying AI systems into categories of minimal, limited, high, and prohibited risk, with different obligations for each category. (European Parliament, 2025). At the normative policy level, the OECD (2020) AI Principles and UNESCO Recommendation on the Ethics of Artificial Intelligence emphasize global principles such as human rights, transparency, accountability, fairness, and human oversight of AI systems.

In the regional sphere, the ASEAN Guide on AI Governance and Ethics provides practical guidance for countries and organizations in Southeast Asia to design, develop, and implement AI responsibly, emphasizing the principles of transparency, fairness, security, reliability, human-centricity, privacy, and accountability (ASEAN, 2023). Guide to generative artificial intelligence. This guide has even been expanded with the Expanded ASEAN Guide on Governance and Ethics of Artificial Intelligence – Generative Artificial Intelligence, which provides specific policy considerations (ASEAN, 2025).

From this perspective, Indonesia's position in the global AI governance trend can be said to still be "relying on a mosaic of regulations": it already has a relatively advanced PDP Law in the region, the Electronic Information and Transaction Law and sectoral regulations (Financial Services Authority Regulations and Bank Indonesia Regulations) that touch on aspects of data security and consumer protection, as well as SE Menkominfo 9/2023 as a guideline for AI ethics. but it does not yet have a single framework that specifically regulates the AI system life cycle, risk classification, transparency and algorithmic audit obligations, or risk-based obligations as in the EU AI Act. A number of policy analyses and civil society advocacy efforts emphasize that Indonesia needs to immediately prepare sound AI governance regulations that are in line with ASEAN guidelines, so that it does not merely become a consumer of AI technology but is also able to guide its development in an ethical manner and protect the rights of its citizens (Lembaga Studi dan Advokasi Masyarakat, 2024).

Formulation of an AI Governance Framework for the Indonesian Business Sector

The application of basic Responsible AI principles such as fairness, accountability, transparency, explainability, and safety/reliability is an important foundation for companies implementing AI. As reviewed by Winanto (2025), studies show that businesses that adopt AI ethically not only focus on efficiency but also on maintaining stakeholder trust by integrating these values into their corporate strategies. Thus, large companies that use AI not only pursue performance but must also ensure that AI systems are accountable, understandable to users and related parties, and safe from vulnerabilities that could harm consumer interests.

As a concrete step, the establishment of an AI Ethics Board in large companies is a strategic recommendation. This board functions as an internal institution that oversees the implementation of AI, sets ethical guidelines, monitors the implementation of algorithmic audits, and ensures cross-functional involvement within the company, such as technology, law, and business. This model is in line with the findings (Lestari, 2023) which propose an internal oversight structure as part of adaptive and responsible AI governance. The existence of an AI Ethics Board enables companies to establish risk mitigation mechanisms and ensure that automated decision-making does not escape human oversight and is in line with organizational values.

Before implementing an AI system, it is important for companies to conduct an Algorithmic Impact Assessment (AIA), a systematic analysis of the potential impact of algorithms on individual rights, fairness, privacy, and the risk of bias. In the Indonesian context, a study by Damaris et al., (2025) shows that the data governance framework for AI in the financial sector is still inadequate because it does not include obligations such as AIA to predict and manage algorithmic risks. With AIA, companies can identify risk scenarios, evaluate automated decision-making processes, and develop mitigation plans before the system is launched.

Furthermore, companies must implement regular AI audit operational standards, including algorithm audits, bias testing, system security checks, and incident or anomaly reporting. Audits are not merely technological checkpoints, but part of an accountability mechanism that ensures AI systems continue to operate in accordance with ethical guidelines and regulations. In line with international literature on auditability in AI governance, research by Winanto (2025) emphasizes that routine audits are an integral part of business continuity in the

AI era.

From a consumer protection perspective, companies must also establish mechanisms such as the right to explanation, which is the right of data subjects to obtain a clear explanation of automated decisions that affect them, and the right to contest automated decisions, which is the right to object to automated decisions and have them reprocessed by humans. Enforcing these rights is important to maintain fairness and accountability in AI systems. Finally, AI governance should not stand alone, but should be integrated with overall corporate governance (Good Corporate Governance/GCG) so that AI policies are aligned with the organization's vision, mission, and values. Based on the analysis, the author proposes a conceptual model of AI governance for Indonesia that combines ethical aspects, algorithm auditing, a supervisory structure (in the form of an AI Ethics Board), AIA, and integration into the GCG structure of a company—a framework that promotes responsible innovation based on transparency, fairness, and accountability.

CONCLUSION

This research concludes that the rapid adoption of Artificial Intelligence (AI) in the Indonesian business sector has brought significant benefits to operational efficiency, decision-making processes, and service automation, yet it simultaneously introduces substantial ethical, legal, and governance challenges. The analysis shows that issues such as algorithmic bias, lack of transparency, inadequate human oversight, and increased privacy risks remain prominent due to inconsistent data practices and limited corporate accountability. Existing regulations—particularly the Personal Data Protection Law (UU PDP), the Electronic Information and Transactions Law (UU ITE), and sectoral rules issued by OJK and Bank Indonesia—provide partial protection but have not fully addressed the unique risks posed by AI systems, especially concerning algorithmic transparency and risk-based regulation. Comparative analysis with global frameworks such as the EU AI Act, OECD AI Principles, and ASEAN AI Governance Guidelines indicates that Indonesia still lacks a comprehensive AI governance structure. The findings reaffirm the need for a governance model that integrates ethical principles, data-protection standards, and corporate compliance mechanisms. The proposed conceptual framework offers a pathway for businesses to implement AI responsibly, ensuring fairness, accountability, transparency, and protection of individual rights.

REFERENCES

Abdullah, C., Durand, N., & Moonti, R. M. (2025). Transformasi Digital dan Hak atas Privasi : Tinjauan Kritis Pelaksanaan UU Perlindungan Data Pribadi (PDP) Tahun 2022 di Era Big Data. *Amandemen: Jurnal Ilmu Pertahanan, Politik Dan Hukum Indonesia*, *2*(3), 233–241. https://journal.appihi.or.id/index.php/Amandemen/article/view/1073/1239

Agusta, H. (2020). PERLINDUNGAN DATA PRIBADI PENERIMA PINJAMAN DALAM TRANSAKSI PINJAM MEMINJAM UANG BERBASIS TEKNOLOGI INFORMASI (PEER TO PEER LENDING). *Jurnal Hukum & Pembangunan*,

50(4). https://doi.org/10.21143/jhp.vol50.no4.2852

Arbani, T. S., Islam, U., & Alauddin, N. (2025). Algorithmic Justice : A Study on Risks and Opportunities in the Use of Artificial Intelligence by Judges in Courts. *Siyasah: Jurnal Hukum Tata Negara*, *05*(1), 27–49. https://doi.org/10.32332/siyasah.v4i1

ASEAN. (2023). ASEAN Guide on AI Governance and Ethics. In *ASEAN Secretariat*. https://asean.org/book/asean-guide-on-ai-governance-and-ethics/?utm

ASEAN. (2025). *Expanded ASEAN Guide on AI Governance and Ethics: Generative AI*. https://asean.org/wp-content/uploads/2025/01/Expanded-ASEAN-Guide-on-AI-Governance-and-Ethics-Generative-AI.pdf?utm

Asyifa, E. R., & Rohida, L. (2025). Artificial Intelligence and Global Governance : Regulatory Opportunities and Ethnical Challenges. *Madani: Jurnal Ilmiah Multidisiplin*, *3*(3), 230–241. https://jurnal.penerbitdaarulhuda.my.id/index.php/MAJIM/article/download/4007/4291?utm

Bachtiar, F. R., Ardytia, W., & W, D. B. (2025). Analisis Penegakan Hukum Data Pribadi Pada Undang-Undang Nomor 27 Tahun 2022 Tentang Perlindungan Data Pribadi Di Indonesia. *AMAR : JURNAL ILMIAH HUKUM*, *3*(2), 101–110. https://jurnal.untag-banyuwangi.ac.id/index.php/jurnalamar/article/view/762/435

Damaris, R., Rosadi, S. D., Bratadanaa, & Diyosena, I. M. (2025). DATA GOVERNANCE FOR ARTIFICIAL INTELLIGENCE IMPLEMENTATION IN THE FINANCIAL SECTOR : AN INDONESIAN PERSPECTIVE. *Journal of Central Banking Law and Institutions*, *4*(3), 445–472. https://journal.ilmudata.co.id/index.php/RIGGS/article/view/2401/1636

Disemadi, H. S. (2021). Urgensi Regulasi Khusus dan Pemanfaatan Artificial Intelligence dalam Mewujudkan Perlindungan Data Pribadi di Indonesia. *Jurnal Wawasan Yuridika*, *5*(36), 177–199. https://doi.org/10.25072/jwy.v5i2.460

Elpina. (2024). Analisis Hukum Terhadap Implementasi Teknologi Kecerdasan Buatan (AI) dalam Sistem Informasi Bisnis. *Digital Transformation Technology (Digitech)*, *4*(1), 9–16. https://jurnal.itscience.org/index.php/digitech/article/download/3696/2913/16192?utm

Fajriyah, Rosales, J. F., & Bagaskara, S. (2025). Perlindungan data pribadi dalam penggunaan big data dan perlindungan hukumnya di indonesia. *Juris Prudentia: Jurnal Hukum Ekselen*, *7*(2), 154–167.

https://journalversa.com/s/index.php/jhe/article/download/1392/1776/5330?utm

Ghazmi, S. F. (2021). URGENSI PENGATURAN ARTIFICIAL INTELLIGENCE PADA SEKTOR BISNIS DARING DI INDONESIA. *Rewang Rencang : Jurnal Hukum Lex Generalis*, *2*(8), 782–803. https://ojs.rewangrencang.com/index.php/JHLG/article/download/104/53?utm

Hidayah, G. R., Djazim, H., & Awaluddin, M. (2025). Studi Komparatif Perlindungan Data Pribadi dalam UU ITE 2024 dan UU PDP 2022. *Jurnal Riset Rumpun Ilmu Sosial, Politik Dan Humaniora*, *4*(2022), 61–70. https://prin.or.id/index.php/JURRISH/article/view/6341/4664

Junaidi, Pujiono, & Fadzil, R. M. (2024). Legal Reform of Artificial Intelligence's Liability to Personal Data Perspectives of Progressive Legal Theory. *Journal of Law and Legl Reform*, *05*(02), 587–612. https://journal.unnes.ac.id/journals/jllr/article/view/3437/366

Kirana, K. B., & Silalahi, W. (2025). Tantangan Regulasi Kecerdasan Buatan (AI) dalam Perspektif Hukum Perlindungan Data Pribadi di Indonesia. *Cerdika: JurnalIlmiah Indonesia*, *5*(6), 1807–1817. https://www.researchgate.net/publication/393311878_Tantangan_Regulasi_Kecerdasan_Buatan_AI_dalam_Perspektif_Hukum_Perlindungan_Data_Pribadi_di_Indonesia?utm

Lembaga Studi dan Advokasi Masyarakat (ELSAM). (2024). *Indonesia Penting Segera Menyiapkan Regulasi Tata Kelola AI yang Baik*. Lembaga Studi Dan Advokasi Masyarakat. https://www.elsam.or.id/siaran-pers/indonesia-penting-segera-menyiapkan-regulasi-tata-kelola-ai-yang-baik?utm

Lestari, R. W. P. (2023). LEGAL PROTECTION OF OUTSOURCING WORKERS FROM TERMINATION OF EMPLOYMENT UNDER LAW NUMBER 6 OF 2023. *Jurnal Ilmiah "Advokasi," 11*(6).

Lisaldy, F., Ismail, & Iryani, D. (2024). Lex AI sebagai Tata Kelola Kecerdasan Buatan Sui Generis di Indonesia. In *Technology and Economics Law Journal* (Vol. 3, Issue 1). https://scholarhub.ui.ac.id/cgi/viewcontent.cgi?article=1076&context=telj&utm

Mahameru, D. E., Nurhalizah, A., Wildan, A., Haikal, M., & Rahmadia, M. H. (2023). IMPLEMENTASI UU PERLINDUNGAN DATA PRIBADI TERHADAP KEAMANAN INFORMASI IDENTITAS DI INDONESIA. *Jurnal Esesndi Hukum*, *5*(2), 115–131. https://journal.upnvj.ac.id/index.php/esensihukum/article/download/240/114/?utm

Marzuki, M. F. (2025). Risiko bias algoritma dalam credit scoring berbasis AI pada bank syariah. *Maliki Interdisciplinary Journal (MIJ)*, *3*, 338–347. https://urj.uin-malang.ac.id/index.php/mij/article/download/15723/4718/?utm

Matondang, K. A., Handani, T., Handayani, A., & Wati, F. (2025). Etika Bisnis dalam Perlindungan Data Pribadi Konsumen di Era Bisnis Digital : dalam Studi Literatur. *Jurnal Publikasi Sistem Informasi Dan Manajemen Bisnis*, *04*(September). https://journalcenter.org/index.php/jupsim/article/download/5508/4275/22586?utm

Novita, Y., & Zahra, R. (2024). Penerapan Artificial Intelligence (AI) untuk Meningkatkan Efisiensi Operasional di Perusahaan Manufaktur : Studi Kasus. *Jurnal Manajemen Dan Teknologi*, *1*(1), 11–21. https://journal.stmiki.ac.id/index.php/jmt/article/download/773/555?utm_source=chatgpt.com

OECD. (2020). *What are the OECD Principles on AI ?* (Issue March). https://www.oecdobserver.org/

Parliament, E. (2025). *EU AI Act : first regulation on artificial intelligence.* https://www.europarl.europa.eu/news/en/headlines/society/20210414STO02010/shaping-the-digital-transformation-eu-strategy-explained

Undang-Undang Republik Indonesia Nomor 27 Tahun 2022 tentang Pelindungan Data Pribadi, (2022).

Pradana, A. E., Herawati, A. R., & Dwimawanti, I. H. (2025). Tantangan Kecerdasan Buatan Dalam Implikasi Kebijakan Pemerintah di Indonesia : Studi Literatur. *Jurnal Good Governance*, *21*(Maret). https://jurnal.stialan.ac.id/index.php/gg/article/download/889/562?utm

Razaqi, A. W., Loka, N. P., Alfian, M., & Yudha, H. (2024). OPTIMALISASI BISNIS MELALUI ARTIFICIAL INTELLIGENCE DENGAN ANALISIS PELUANG , TANTANGAN DAN DAMPAK DI BERBAGAI SEKTOR MENGGUNAKAN SYSTEMATIC LITERATURE REVIEW. *Djtechno : Jurnal Teknologi Informasi*, *5*(3), 727–741. https://doi.org/10.46576/djtechno

Samita, G. R., Wisesa, W., Setiawan, E. D., Hidayat, R., Rationality, B., Data, B., Kognitif, B., Algoritmik, B., Data, K., & Organisasi, E. (2025). Integrasi Artificial Intelligence dan Teori Bounded Rationality dalam Mengatasi Ketidakpastian Pengambilan Keputusan Bisnis di Era Big Data. *Jurnal Bisnis Dan Komunikasi Digital*, *2*(2), 1–12. https://journal.pubmedia.id/index.php/jbkd/article/view/3460/3338

Simanjuntak, P. H. (2024). Perlindungan Hukum Terhadap Data Pribadi pada Era Digital di Indonesia : Studi Undang-Undang Perlindungan Data Pribadi dan General Data Protection Regulation (GDPR). *Jurnal ESENSI HUKUM*, *6*(2), 105–124. https://doi.org/10.17933/mti.v9i1.118

Trisena, P., Fauzi, M. M., & Rindyana, W. (2025). KAJIAN LITERATUR TENTANG INTEGRASI ARTIFICIAL INTELLIGENCE DALAM BISNIS DIGITAL BERBASIS SYARIAH. *Media Riset Bisnis Ekonomi Sains Dan Terapan*, *3*(2), 56–62. https://jurnalbest.com/index.php/mrbest/article/download/287/139?utm

Varany, Y. T., & Sumanto, L. (2025). Dinamika Sistem Hukum Pelindungan Data Pribadi : Analisis Interaksi Struktur , Substansi , dan Kultur Hukum di Era Big Data. *Jurnal Impresi Indonesia (JII)*, *04*(11), 5172–5185. https://jii.rivierapublishing.id/index.php/jii/article/view/7182/1180

Wardi, A., & Aditya, G. (2025). NAVIGATING ETHICAL DILEMMAS IN ALGORITHMIC DECISION-MAKING: A CASE-BASED STUDY OF FINTECH PLATFORMS. *Jurnal Akuntansi Dan Bisnis (Akuntansi)*, *5*(1), 16–25. https://journal.politeknik-pratama.ac.id/index.php/JIAB/article/view/1044?utm_source=chatgpt.com

Winanto, S. (2025). Ethical and Sustainable AI Adoption in Future Global Business Practices. *Journal of Artificial Intelligence and Digital Business (RIGGS)*, *4*(3), 2861–2870. https://journal.ilmudata.co.id/index.php/RIGGS/article/view/2401/1636

Wulandari, Y. S. (2025). KECERDASAN BUATAN DAN PERLINDUNGAN DATA: ANALISIS REGULASI YANG ADIL UNTUK SISTEM HUKUM INDONESIA. *Jurnal Ilmu Hukum "THE JURIS,"* *IX*(1), 174–181. https://ejournal.stih-awanglong.ac.id/index.php/juris/article/view/1583/998

Yamin, M. (2025). INTEGRASI KECERDASAN BUATAN DALAM PROSES REKRUTMEN SDM: SEBUAH TINJAUAN SISTEMATIS. *Al-Ihtiram: Multidisciplinary Journal of Counseling and Social Research Vol.*, *4*(1). https://jurnal.pabki.org/index.php/alihtiram/article/download/1054/397?utm