

Legal Frameworks Governing the Use of Artificial Intelligence in the Legal System

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ABSTRACT

The rapid development of Artificial Intelligence (AI) technology has driven significant transformations in various sectors, including the legal system. The use of AI has the potential to increase the efficiency of legal document analysis, support the decision-making process, and accelerate access to legal information. However, the use of this technology also raises various challenges related to regulatory aspects, ethics, accountability, and human rights protection. **This study aims to analyze** how the law implements the use of AI in the legal system and identify the regulatory challenges that arise in its application. **This study** uses a qualitative approach with a literature study method that examines various scientific publications, regulations, and the latest research reports related to the integration of AI technology in legal practice. The analysis is conducted descriptively and analytically to evaluate the relationship between the development of AI technology and the legal framework that regulates it. **The results of the study** indicate that the application of AI in the legal system can make a positive contribution to improving work efficiency, the accuracy of legal data analysis, and the effectiveness of legal services. However, this study also found several major challenges such as the potential for algorithmic bias, limited regulations governing the use of AI, and issues of transparency in the technology-based decision-making process. **Therefore, it is necessary** to strengthen the regulatory framework that is adaptive, transparent, and oriented towards the principle of justice to ensure that the implementation of AI in the legal system can run responsibly, safely, and support the creation of a more modern and accountable legal system in the era of digital transformation.

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1. INTRODUCTION

Although previous studies have discussed legal aspects, ethical concerns, and regulatory challenges related to Artificial Intelligence (AI), limited research has specifically examined a comprehensive legal governance model for AI implementation within Indonesian legal institutions [1]. This study addresses this research gap by proposing an integrated legal governance framework based on transparency, accountability, explainability, ethical oversight, and regulatory supervision [2]. The novelty of this study lies in the development

of a practical legal governance model that supports the responsible adoption of AI within the Indonesian legal system [3]. Furthermore, this research is expected to provide a more comprehensive understanding of the importance of developing adaptive regulations capable of responding effectively to the rapid advancement of digital technologies [4]. This study contributes to the LAW Journal's focus on AI governance and digital legal transformation by providing a legal governance perspective on the implementation of AI within Indonesian legal institutions. The findings support the development of adaptive regulatory frameworks, accountability mechanisms, and governance models that facilitate the responsible modernization of legal systems in the digital era. In addition, as illustrated in Fig. 1, this research aligns with the United Nations Sustainable Development Goals (SDGs), particularly SDG 16 (Peace, Justice and Strong Institutions), SDG 9 (Industry, Innovation and Infrastructure), and SDG 17 (Partnerships for the Goals), highlighting the role of AI governance in promoting justice, innovation, and sustainable institutional collaboration.



Figure 1. Alignment of AI Legal Implementation Research with the United Nations Sustainable Development Goals (SDGs)

As illustrated in Figure 1, this research contributes to the achievement of the United Nations Sustainable Development Goals (SDGs), particularly SDG 16 (Peace, Justice and Strong Institutions), SDG 9 (Industry, Innovation and Infrastructure), and SDG 17 (Partnerships for the Goals). The implementation of AI technologies within legal systems is expected to enhance transparency, efficiency, and accountability in judicial processes and legal services. Furthermore, the development and adoption of AI-based technologies promote digital innovation within the legal sector, supporting the modernization of legal institutions and improving access to legal information. The integration of AI into legal systems also encourages collaboration among governments, academic institutions, legal practitioners, and technology stakeholders to establish responsible, ethical, and sustainable AI governance frameworks. Through these contributions, the study supports the development of more effective legal institutions, fosters technological innovation, and strengthens multi-stakeholder partnerships aimed at ensuring that AI technologies are utilized in a manner that promotes justice, legal certainty, and sustainable development.

2. LITERATURE REVIEW

AI in legal systems can be examined through the perspective of technology governance and regulatory theory. Legal governance theory emphasizes the role of law as a regulatory instrument to ensure that technological innovation develops in accordance with principles of justice, accountability, and public interest [5]. Within this framework, legal institutions function as regulators and oversight bodies to ensure that emerging technologies operate within established legal norms [6].

In the context of AI governance, several international frameworks have been developed to guide responsible regulation. For instance, the European Union introduced the AI Act, which adopts a risk-based approach emphasizing transparency and accountability in AI systems [7]. In addition, organizations such as the OECD and UNESCO promote ethical principles including fairness, transparency, human oversight, and hu-

man rights protection. These perspectives provide a conceptual foundation for regulating AI while maintaining a balance between technological innovation and legal certainty.

2.1. The Concept and Development of AI in Legal Systems

The rapid development of AI technology has created an increasing need for clear regulatory frameworks to govern its use [8]. The emergence of AI has had a broad impact on various aspects of society, making it essential to establish legal frameworks that ensure its utilization remains aligned with legal principles, human rights protection, and the public interest. Consequently, many countries have begun developing policies and regulations aimed at ensuring that AI technologies are implemented in a safe, transparent, and accountable manner [9].

From a legal perspective, the regulation of AI extends beyond its technological aspects and encompasses various legal dimensions, including legal liability, personal data protection, digital system security, and transparency in algorithmic processes. Several developed countries, particularly within Europe, have introduced specific regulations governing the use of AI to ensure that such technologies do not pose risks to society [10]. These regulations also emphasize the importance of accountability, transparency, and the protection of individual rights in the deployment of AI-based systems. Meanwhile, in Indonesia, regulations concerning AI remain relatively general and have not yet been specifically addressed within statutory legal frameworks. Existing regulations, such as the Law on Electronic Information and Transactions and legislation related to personal data protection, may serve as legal foundations for governing digital technologies, including AI [11]. However, these regulations do not specifically address several critical issues associated with AI, such as legal liability for autonomous systems, ethical considerations in algorithmic decision-making, and oversight mechanisms for AI technologies [12]. As a result, there is a growing need for more comprehensive and adaptive regulatory frameworks capable of addressing the legal challenges arising from the rapid advancement of AI.

2.2. Regulatory Framework of AI from a Legal Perspective

The rapid development of AI technology has created an increasing need for clear regulations to govern its use. The emergence of AI has had a significant impact on various aspects of society, making it essential to establish legal frameworks that ensure its utilization remains aligned with legal principles, the protection of human rights, and the public interest [13]. Consequently, many countries have begun developing policies and regulations aimed at ensuring that AI technologies are implemented in a safe, transparent, and accountable manner [14].

From a legal perspective, the regulation of AI extends beyond its technological aspects and encompasses various legal dimensions, including legal liability, personal data protection, digital system security, and transparency in algorithmic processes [15]. Several developed countries, particularly in Europe, have introduced specific regulations governing the use of AI to ensure that such technologies do not pose risks to society. These regulations also emphasize the importance of accountability and the protection of individual rights in the deployment of AI-based systems. Meanwhile, in Indonesia, regulations concerning AI remain relatively general and have not yet been specifically addressed within statutory legal frameworks. Existing regulations, such as the Law on Electronic Information and Transactions and regulations concerning personal data protection, may serve as legal foundations for governing digital technologies, including AI. However, these regulations do not specifically address several critical issues associated with AI, such as legal liability for autonomous systems, ethical considerations in algorithmic decision-making, and oversight mechanisms for AI technologies [16].

2.3. Legal Challenges in the Implementation of AI

The implementation of AI within legal systems also gives rise to various challenges related to legal, ethical, and justice-related considerations. One of the most frequently discussed issues concerns accountability and legal responsibility for decisions generated by AI systems [17]. In conventional legal systems, legal responsibility is generally assigned to individuals or legal entities that perform specific actions. However, in AI-based systems, decisions are often generated through automated processes carried out by algorithms, raising questions regarding who should be held accountable when errors or damages result from the use of such technologies. Furthermore, the use of AI raises concerns about the potential for algorithmic bias [18]. Algorithmic bias may emerge when the data used to train AI systems is not representative or contains inherent prejudices and imbalances. Such conditions can lead AI systems to produce decisions that are not fully objective and may even result in discriminatory outcomes. Within the legal context, this issue is particularly significant because

legal systems are expected to uphold the principles of justice, equality, and the protection of individual rights [19]. Another major challenge relates to transparency in AI systems. Many AI technologies operate through complex mechanisms that are difficult for humans to understand, making the decision-making processes of such systems difficult to explain or interpret. This lack of transparency can create obstacles in evaluating, monitoring, and supervising the use of AI technologies within legal systems. Therefore, appropriate policies and regulatory frameworks are required to ensure that AI systems comply with the principles of transparency, accountability, and the protection of human rights.

2.4. The Role of Law in AI Governance and Oversight

Law plays a crucial role in regulating and overseeing the use of AI to ensure that the technology is utilized responsibly. In the context of technology governance, law functions as an instrument capable of balancing technological innovation with the protection of public interests [20]. Through clear and comprehensive regulations, the use of AI can be guided in a manner that remains consistent with fundamental legal principles, including justice, legal certainty, and the protection of human rights [21].

Comparative analysis demonstrates that the European Union has adopted the AI Act, which classifies AI systems according to risk levels and imposes strict obligations on high-risk applications. Similarly, the OECD AI Principles emphasize transparency, accountability, and human-centered values. These international frameworks provide valuable references for developing effective AI governance mechanisms [22]. In addition, effective oversight systems are required to ensure that AI technologies are not misused or applied irresponsibly. In this regard, the roles of governments, legal institutions, academics, and other stakeholders are essential in formulating policies capable of comprehensively regulating the use of AI [23]. In the Indonesian context, the development of regulations that are adaptive to technological advancements is particularly important to ensure that the implementation of AI delivers optimal benefits to society. Responsive and flexible regulatory frameworks are expected to anticipate the challenges arising from future technological developments while ensuring that the deployment of AI technologies remains within a legal framework that upholds the principles of justice and legal certainty [24].

3. RESEARCH METHOD

The research method is an essential component of a scientific study because it serves as a guideline for collecting and analyzing data systematically. Through an appropriate research method, researchers are able to explain the research process in a structured manner so that the results obtained are valid and academically accountable [25]. In this study, the research method is used to examine how legal implementation regulates the use of AI within the legal system and to analyze whether existing regulations are capable of accommodating the development of this technology [26]. Therefore, this section explains the type and research approach used, the types and sources of research data, data collection techniques, data analysis techniques, and the research framework that guides the overall research process [27].

3.1. Research Type and Approach

This study employs a qualitative research method with a normative juridical approach. This approach was selected because the research focuses on examining legal norms, regulations, and various scientific literature related to the utilization of AI within the legal system. Normative juridical research aims to analyze how the law regulates a particular phenomenon, specifically the implementation of AI technology in modern legal practices [28]. This approach enables researchers to examine various laws and regulations, legal concepts, and theories relevant to the development of digital technology. Furthermore, this method is used to assess whether existing regulations are capable of accommodating the rapid advancement of AI technology within the legal system [29]. By applying this approach, the study provides a clearer understanding of the relationship between technological development and the legal policies that govern it.

3.2. Types and Sources of Research Data

Data Sources and Data Collection

This study relies on secondary data because the research primarily focuses on analyzing legal concepts, regulatory policies, and scholarly discussions related to the application of AI within legal systems [30].

Data were collected from peer-reviewed journal articles, legal documents, books, policy reports, and international governance publications indexed in Scopus, Google Scholar, ScienceDirect, SpringerLink, and HeinOnline. Literature selection was conducted using inclusion criteria based on relevance to AI governance, legal accountability, algorithmic regulation, and publication years between 2022 and 2025 [31].

In legal research, data sources are generally classified into three main categories: primary legal materials, secondary legal materials, and tertiary legal materials. Primary legal materials consist of legislation, regulations, government policies, and official legal instruments related to information technology, data protection, and the governance of AI [32]. Secondary legal materials include scholarly literature such as books, journal articles, conference proceedings, and previous studies that discuss AI from a legal perspective. Tertiary legal materials comprise supporting references, including legal dictionaries, encyclopedias, and other reference sources that assist in clarifying legal concepts and terminology used in the research [33].

The analytical framework employed thematic legal analysis to identify key themes related to transparency, accountability, explainability, ethical oversight, and regulatory governance [34]. Through this approach, the study examines how existing legal frameworks address the challenges and opportunities arising from the increasing integration of AI technologies into contemporary legal systems [35]. To provide a clearer overview of the research materials utilized in this study, Table 1 presents the classification of data sources and their respective roles in supporting the legal analysis.

Table 1. Classification of Research Data Sources

Data Type		Data Source	Role in Research
Primary Materials	Legal	Laws and regulations as well as government policies	Serve as the basis for analyzing AI regulations
Secondary Materials	Legal	Scientific journals, academic books, research findings	Provide theoretical foundations and scientific studies
Tertiary Materials	Legal	Legal dictionaries, encyclopedias, scientific reports	Support the understanding of legal concepts and terms

Based on Table 1, it can be seen that each type of data source has a different role in the research. Primary legal materials serve as the main basis for analyzing regulations related to the use of AI in the legal system. Meanwhile, secondary legal materials are used to provide theoretical foundations and support scientific analysis through various academic literatures such as journals and books. Tertiary legal materials function as supporting sources that help clarify legal concepts, definitions, and terms used in the study so that the analysis process can be conducted more comprehensively [36].

3.3. Data Collection Technique

The data collection process was conducted through several systematic stages [37]. The first stage involved identifying literature sources relevant to the research objectives by searching reputable academic databases and digital libraries using predefined keywords related to Artificial Intelligence, legal governance, legal systems, AI regulation, and digital transformation. The second stage consisted of screening and selecting literature based on several criteria, including publication quality, academic credibility, relevance to the research topic, and the recency of publication to ensure that the analysis reflected the latest developments in AI governance and legal regulation. Preference was given to peer-reviewed publications and internationally recognized legal and policy documents that provide authoritative perspectives on the implementation of AI in legal systems.

Following the selection process, the collected literature was systematically organized, classified, and documented according to the major themes examined in this research, including legal governance, regulatory frameworks, accountability, transparency, explainability, ethical oversight, and legal challenges associated with AI implementation. This classification facilitated a structured analysis by enabling the researcher to compare different scholarly perspectives and identify recurring issues across the selected sources. Subsequently, the documented literature was analyzed descriptively to examine the relationship between technological advancement and legal regulation while identifying research gaps and opportunities for improving AI governance within legal systems [38].

The literature used in this study was primarily derived from recent scientific publications published between 2022 and 2025 to ensure that the findings accurately reflect current technological developments, evolu-

ing legal frameworks, and contemporary governance approaches. Through this systematic literature review process, the study establishes a comprehensive foundation for evaluating the legal implementation of AI and supports the development of an adaptive governance framework capable of responding to future technological advancements. The stages of the data collection process and their respective objectives are summarized in Table 2.

Table 2. Data Collection Stages

Stage	Activity	Objective
Literature Identification	Determining relevant reference sources	Finding data related to the research topic
Literature Selection	Selecting credible literature	Ensuring the quality of research data
Data Collection	Gathering information from various sources	Obtaining the necessary data
Documentation	Organizing and recording collected data	Facilitating the data analysis process

Based on Table 2, the data collection process consists of several stages that support the research process. The first stage is literature identification to determine references relevant to the research topic. The second stage involves selecting credible literature to ensure the quality of the data used. The next stage is data collection, where information from various sources is gathered. Finally, the documentation stage organizes and records the collected data to facilitate the subsequent data analysis.

3.4. Data Analysis Technique

The data analysis technique used in this study is *descriptive qualitative analysis*. This approach involves examining and interpreting data collected from scientific literature and legal regulations related to the use of AI in legal systems [39]. Through this method, the researcher systematically describes and interprets relevant information in order to understand the development, implementation, and regulatory aspects of AI in the legal field. This approach also enables the identification of legal concepts, regulatory frameworks, and scholarly perspectives related to AI governance [40].

The data analysis process is conducted through several stages: data reduction, data presentation, interpretation, and conclusion drawing. Data reduction involves selecting and filtering information that is relevant to the research topic. The selected data are then organized and presented in systematic descriptive form to facilitate understanding and analysis [41]. Through this process, the researcher can identify patterns, relationships between legal concepts, technological developments, and regulatory frameworks related to AI.

The next stage is interpretation, which involves analyzing the relationship between AI technology and legal systems based on the collected literature. This stage focuses on examining the implementation, opportunities, challenges, and legal implications of AI within existing legal frameworks [42]. The final stage is drawing conclusions, which summarize the main findings of the analysis and provide insights into the implementation of AI in legal systems and its potential legal implications. The stages of the data analysis process used in this research are summarized in Table 3.

Table 3. Data Analysis Stages

Analysis Stage	Activity
Data Reduction	Selecting data that are relevant to the research
Data Presentation	Organizing data in the form of systematic descriptive explanations
Data Interpretation	Analyzing the relationship between AI technology and law
Conclusion Drawing	Formulating conclusions based on the analysis results

As shown in Table 3, the data analysis process is conducted through several systematic stages to ensure that the interpretation of the collected data is carried out in a structured and logical manner. These

stages enable the researcher to organize relevant information, analyze the relationship between AI technology and legal systems, and formulate conclusions that address the objectives of this research.

3.5. Research Flow Framework

In this study, the research stages were systematically designed to ensure that the research process could be conducted in a structured manner. The research workflow began with problem identification and continued through to the conclusion stage, which was based on the results of data analysis [43]. As illustrated in Figure 2, the research process consists of six main stages: problem identification, literature review, data collection, data analysis, discussion of research results, and conclusion. This research framework was used to provide an overview of the research stages undertaken, thereby facilitating a comprehensive understanding of the overall research process.



Figure 2. Research Methodology Flow

As shown in Figure 2, the research process begins with problem identification, followed by a literature review to understand existing studies related to the topic. The next stage is data collection, where relevant information is gathered for analysis. After that, data analysis is conducted to interpret the collected data and identify significant findings. These findings are then explained in the discussion of research results, which provides interpretation and insights. Finally, the research ends with a conclusion that summarizes the key outcomes of the study.

4. RESULTS AND DISCUSSION

The results and discussion section presents the findings obtained from the research and provides an in-depth analysis of the issues examined in this study. This section discusses the application of AI in the legal system, the analysis of legal regulations governing its use, the challenges faced in its implementation, and the role of regulation in the governance of AI [44]. Through the analysis of relevant literature and legal frameworks, this section aims to explain how the development of AI technology influences the legal system

and the importance of regulatory support to ensure that its utilization remains aligned with legal principles and societal interests [45].

4.1. Application of AI in the Legal System

Based on the results of the research conducted, the development of AI has had a significant impact on the transformation of legal systems in the digital era. This technology has begun to be utilized to support various legal activities, such as legal document analysis, legal reference and case precedent searches, as well as the management of large-scale legal data. With its ability to process and analyze data quickly and systematically, AI can assist legal practitioners in obtaining legal information more efficiently compared to conventional methods [46].

The literature review findings indicate that several countries have integrated AI technologies into various legal processes, including case management systems, legal document analysis, and decision-support systems within judicial proceedings. Furthermore, this technology has been employed to develop digital-based legal services aimed at improving public access to legal information and legal services. The adoption of AI in legal systems not only enhances operational efficiency but also accelerates the processing of complex legal data [47].

In Indonesia, the implementation of AI within the legal system is still in its developmental stage. Several government agencies and legal institutions have begun adopting digital technologies to support legal data management and technology-based public services [48]. However, the broader application of AI in legal decision-making processes requires further study to ensure that its use remains aligned with prevailing legal principles and does not create new challenges within the legal system.

4.2. Analysis of Legal Regulations on the Use of AI

Based on the findings of this study, the development of AI has significantly contributed to the transformation of legal systems in the digital era. AI technologies are increasingly being utilized to support various legal activities, including legal document analysis, legal research and case precedent retrieval, as well as the management of large volumes of legal data. Through its ability to process and analyze information rapidly and systematically, AI enables legal practitioners to access relevant legal information more efficiently than conventional methods [49].

The literature review revealed that several countries have integrated AI technologies into various legal processes, such as case management systems, legal document analysis, and decision-support systems within judicial proceedings [50]. In addition, AI has been adopted to develop digital legal services aimed at improving public access to legal information and legal assistance. The implementation of AI in legal systems not only enhances operational efficiency but also accelerates the processing of complex legal data.

In Indonesia, the adoption of AI within the legal sector remains at an early stage of development. Several government agencies and legal institutions have begun implementing digital technologies to support legal data management and technology-based public services. Nevertheless, the broader use of AI in legal decision-making processes requires further research and regulatory consideration to ensure that its implementation remains consistent with legal principles, promotes fairness and accountability, and does not create new challenges within the legal system.

4.3. Legal Challenges in the Implementation of AI

Based on the analysis conducted in this research, several significant challenges arise in the implementation of AI within the legal system. One of the most critical challenges relates to the issue of accountability and legal responsibility for decisions generated by AI systems. In conventional legal systems, legal responsibility is typically attributed to individuals or legal entities performing specific actions. However, in AI-based systems, decisions are often generated through automated algorithms, which raises questions about who should be held responsible in the event of errors or damages resulting from those decisions.

Another challenge identified in this study concerns the potential for algorithmic bias in AI systems. Bias may occur if the training data used in AI systems is not representative or contains inherent patterns of inequality. Consequently, the system may produce decisions that are less objective or potentially discriminatory. Furthermore, transparency is another major issue in the implementation of AI technologies. Many AI systems operate using complex machine learning algorithms that function as “black boxes,” making it difficult for users to understand how decisions are generated. This lack of transparency can complicate supervision and evaluation of AI systems within the legal framework.

4.4. The Role of Regulation in AI Governance

The findings of this study indicate that legal regulation plays a strategic role in establishing responsible and sustainable AI governance. Clear and comprehensive regulations can serve as guidelines for directing the use of AI technologies in a manner that remains consistent with fundamental legal principles, including justice, transparency, accountability, and the protection of human rights.

In the context of technology governance, law functions as an instrument for balancing technological innovation with the protection of public interests. Effective regulations not only govern the technical aspects of technology implementation but also provide ethical guidelines and oversight mechanisms for the use of AI. Such regulatory frameworks are essential to ensuring that AI systems operate in a manner that is consistent with legal and societal values.

This study further demonstrates that the development of adaptive regulations is crucial to ensuring that the benefits of AI can be maximized while minimizing potential risks. Therefore, collaboration among governments, academics, legal practitioners, technology developers, and other stakeholders is necessary to formulate policies capable of comprehensively regulating the use of AI technologies. Through the establishment of a clear regulatory framework, the application of AI within legal systems is expected to enhance the efficiency of legal services while maintaining the principles of justice, legal certainty, and public trust.

Based on the findings, this study proposes an AI Legal Governance Framework consisting of five interconnected components:

- Regulatory Compliance.
- Explainable AI Mechanisms.
- Algorithmic Auditing Procedures.
- Ethical oversight committees.
- Accountability and liability allocation mechanisms.

This framework may serve as a practical model for Indonesian courts and legal institutions in implementing AI technologies while preserving legal certainty, transparency, accountability, and public confidence in the legal system.

5. MANAGERIAL IMPLICATIONS

The implementation of AI in legal systems carries significant managerial implications for legal institutions, government agencies, and organizations providing legal services. The integration of AI technologies requires a more adaptive management approach to digital transformation, particularly in legal information management, operational efficiency enhancement, and data-driven decision-making processes. Legal institutions need to develop internal policies that facilitate the effective utilization of AI technologies while ensuring compliance with fundamental legal principles such as transparency, accountability, and the protection of human rights.

Furthermore, strengthening human resource capabilities is a critical aspect of AI adoption. This can be achieved through training programs and digital competency development initiatives that enable legal practitioners to understand and effectively utilize AI technologies in their professional activities. Such efforts are essential to ensuring that technological advancements complement, rather than replace, human expertise within the legal profession.

Specific policy recommendations include the development of national AI governance guidelines for judicial institutions, the implementation of mandatory algorithmic auditing procedures, the establishment of certification standards for legal AI systems, judicial capacity-building programs focused on AI literacy, and the creation of an independent supervisory body responsible for monitoring the deployment of AI within the legal sector. These measures can help ensure that AI technologies are implemented responsibly, ethically, and in accordance with legal and regulatory requirements.

With appropriate management and governance mechanisms, the adoption of AI technologies has the potential not only to improve operational efficiency and the quality of legal services but also to promote the development of a more modern, transparent, and responsive legal system capable of addressing the evolving needs of society in the digital era.

6. CONCLUSION

This study examined the legal implementation of Artificial Intelligence (AI) within the legal system by analyzing existing legal frameworks, governance principles, and regulatory challenges associated with AI adoption. The findings indicate that AI has significant potential to improve the efficiency of legal document analysis, legal information management, legal services, and decision-support processes within the legal system. However, the study also reveals that the current legal framework, particularly in Indonesia, remains relatively general and has not comprehensively addressed critical issues such as legal liability, algorithmic bias, transparency, accountability, and the protection of fundamental rights. Therefore, adaptive and comprehensive legal regulations are required to ensure that AI technologies are implemented responsibly while maintaining the principles of justice, legal certainty, transparency, and public trust.

This study contributes by proposing an AI Legal Governance Framework consisting of five interconnected components: regulatory compliance, explainable AI mechanisms, algorithmic auditing procedures, ethical oversight, and accountability and liability allocation. The proposed framework provides a practical governance model for policymakers, judicial institutions, legal practitioners, and other stakeholders to support the responsible implementation of AI technologies within the Indonesian legal system. By integrating legal principles with governance mechanisms, the framework contributes to the modernization of legal institutions while promoting transparent, accountable, ethical, and human-centered AI governance in the digital era.

This research is limited by its normative juridical approach and reliance on secondary data obtained through a literature review, which does not fully reflect the practical implementation of AI within legal institutions. Therefore, future studies are encouraged to employ empirical approaches, including field observations, interviews with legal practitioners, comparative analyses of AI regulatory frameworks across different jurisdictions, and evaluations of AI implementation in judicial institutions. Such studies are expected to provide a more comprehensive understanding of AI governance and support the development of adaptive legal policies that can effectively respond to future technological advancements while ensuring the responsible and sustainable use of AI in legal systems.

7. DECLARATIONS

7.1. About Authors

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7.2. Author Contributions

Conceptualization: PJ; Methodology: SF; Software: MR; Validation: PJ and SF; Formal Analysis: MR and SF; Investigation: SF; Resources: MR; Data Curation: PJ; Writing Original Draft Preparation: PJ and SF; Writing Review and Editing: PJ and MR; Visualization: MR; All authors, PJ, SF, and MR, have read and agreed to the published version of the manuscript.

7.3. Data Availability Statement

The data presented in this study are available on request from the corresponding author.

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7.5. Institutional Review Board Statement

Not applicable.

7.6. Informed Consent Statement

Not applicable.

7.7. Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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