
Artificial Intelligence in Civil Justice: Comparative Legal Analysis and Practical Frameworks for Indonesia

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Abstract

The advancement of artificial intelligence (AI) technology presents opportunities to improve the efficiency and accessibility of the judicial system in civil procedural law reform. Nonetheless, its execution in Indonesia continues to encounter numerous obstacles, including infrastructure, regulatory issues, and opposition from law enforcement agencies. This study seeks to examine the impact of AI on improving access to and efficacy of justice within the framework of civil procedural law reform in Indonesia. We employ the normative legal research method, which utilizes an approach to law and literature review, to determine the potential and challenges of integrating AI into Indonesia's judicial system. Research findings suggest that AI can accelerate the litigation process and improve the uniformity of court decisions based on precise facts. To ensure optimal use of AI, comprehensive regulatory reform is necessary, along with improvements in infrastructure and training for law enforcement personnel. The findings highlight the importance of formulating policies that promote openness and ethics in AI utilization to maintain fairness principles.

1. Introduction

The evolution of digital technology has profoundly influenced multiple industries, including the judicial system. Several sectors are increasingly employing technological innovations like artificial intelligence (AI) during the 4.0 industrial revolution to

enhance efficiency and accessibility. The legal system, especially civil procedural law, is not exempt from this issue. The protracted legal procedure, intricate bureaucracy, and elevated litigation expenses are persistent issues that impede the pursuit of justice, particularly for resource-constrained communities.¹ This perspective views the use of AI technology as a potential solution to revolutionize the judicial process and create a system that is more responsive and efficient. Numerous wealthy nations have started by incorporating AI into their legal frameworks, namely to facilitate justice administration, document preparation, and automated legal analysis. However, despite the rapid global advancement of digital technology, Indonesia's use of AI in civil procedural law is still in its infancy, and there hasn't been extensive research on its potential. Consequently, it is essential to investigate the potential of AI in improving access to justice and the efficacy of the civil judicial system in Indonesia.²

In Indonesia, the civil procedural law system faces numerous challenges that impede the prompt and effective administration of justice. The protracted case resolution procedure is a primary difficulty, frequently attributed to a backlog of cases within the courts and intricate bureaucracy.³ The constraints on judicial resources, both in terms of specialized staff and sufficient technology, are intensifying this issue. Moreover, exorbitant prices and restricted access to judicial proceedings present obstacles for society, particularly for marginalized groups, in achieving equitable justice. Despite the substantial prospects presented by technological advancements like artificial intelligence (AI) to streamline legal processes and alleviate administrative duties, the integration of this technology into Indonesia's civil justice system remains suboptimal. The disparity in access to justice remains conspicuous. This study aims to identify specific challenges encountered in Indonesian civil procedural law and assess how the

¹ Zil Aidi, "Implementasi E-Court Dalam Mewujudkan Penyelesaian Perkara Perdata Yang Efektif Dan Efisien," *Masalah-Masalah Hukum* 49, no. 1 (January 31, 2020): 80, <https://doi.org/10.14710/mmh.49.1.2020.80-89>.

² Herliana Herliana, "Maqasid Al-Sharia in Court-Mediation Reform: A Study on Efficiency and Social Justice in Medical Disputes," *De Jure: Jurnal Hukum Dan Syar'iah* 15, no. 2 (December 29, 2023): 214–29, <https://doi.org/10.18860/j-fsh.v15i2.23962>.

³ Faisal Luqman Hakim, "Simplifikasi Prosedur Beracara Dengan Pemanfaatan Teknologi Dalam Rancangan Undang-Undang Hukum Acara Perdata," *ADHAPER: Jurnal Hukum Acara Perdata* 5, no. 1 (October 25, 2019): 1, <https://doi.org/10.36913/jhaper.v5i1.85>.

implementation of AI can provide an innovative solution to these concerns, thereby improving the efficacy and efficiency of the judicial system.

This research seeks to perform a comprehensive examination of the prospective application of artificial intelligence (AI) in civil procedural law, primarily concentrating on improving access to justice and the efficiency of the judicial process. This research aims to investigate the impact of AI in accelerating case resolution, diminishing case backlogs, and alleviating administrative costs within the judicial system. This project intends to evaluate how AI technology can mitigate existing barriers in the court system, like exorbitant costs and sluggish bureaucracy,⁴ which frequently impede societal access to justice, particularly for vulnerable populations.⁵ This research aims to generate practical policy suggestions and propose new solutions for judicial institutions in Indonesia to reform the civil procedural law system through empirical and normative analysis. This project seeks to significantly contribute to legal reform by providing a framework that enhances judicial efficiency via AI technology.

Despite the extensive application of artificial intelligence (AI) technology across numerous domains, research regarding its implementation within the legal system, especially in civil procedural law, remains scarce. Current research predominantly emphasizes technological dimensions of criminal courts, with less consideration of AI's possible applicability in the civil sector. In Indonesia, despite various initiatives concerning the digitalization of legal processes,⁶ the integration of AI in civil procedural law has received minimal attention in both practical applications and academic research. The majority of current literature merely addresses the application of digital technology in court administration, failing to explore the potential of AI as a solution to problems such as protracted dispute resolution and high expenses. Moreover, comparative analyses examining the implementation of AI in civil procedural law

⁴ Rahdian Ade Putra Bone and Chami Yassine, "Judicial and Administrative Approaches to Civil Service Dispute Resolution: A Comparative Study between Indonesia, India, and Egypt," *International Journal of Constitutional and Administrative* 1, no. 1 (2025): 21–41.

⁵ Imam Sukadi and Erfaniah Zuhriah, "The Legal Policy of Judicial Power: The Idea of Implementation of Small Claim Courts in Religious Courts," *De Jure: Jurnal Hukum Dan Syar'iah* 13, no. 1 (July 28, 2021), <https://doi.org/10.18860/j-fsh.v13i1.10913>.

⁶ William Sibarani, "Modern Justice: Indonesia's Supreme Court's Challenges to Uphold Fair Trial Principles Through Digitalization," *Brawijaya Law Journal* 10, no. 1 (April 30, 2023): 106–21, <https://doi.org/10.21776/ub.blj.2023.010.01.07>.

across other nations and its applicability in Indonesia remain scarce. This research solves the gap by providing a thorough examination of the impact of AI in improving the efficiency and accessibility of civil justice in Indonesia, simultaneously contributing to the current literature.

This research makes a significant and innovative contribution to the evolution of civil procedural law by employing a relatively unexamined methodology: the use of artificial intelligence (AI) to improve access to and efficacy of the judiciary. This research is distinctive in its creative examination of the appropriate integration of AI into Indonesia's predominantly manual and bureaucratic judicial system. This research explicitly addresses civil procedural law, a frequently neglected area in discussions of technology-driven legal reform, at a time when most legal technology studies focus on general digitalization or the criminal justice system. This study offers a comparative examination of AI implementation in the legal systems of several nations, yielding insights applicable to the Indonesian setting. This study examines AI's technological potential and provides a realistic policy framework to assist judicial institutions in effectively embracing this technology. This research seeks to enhance the existing literature and offer tangible solutions to increase community access to justice using technological advancements in the legal sector.

2. Problem Statement

The integration of artificial intelligence (AI) with civil procedural law in the contemporary digital age offers substantial prospects and problems for the judiciary. Numerous wealthy nations have employed AI via technologies like machine learning and predictive analytics to augment efficiency, accelerate judicial procedures, and promote access to justice. This technology facilitates the automation of repetitive processes that once required considerable time and expense, as well as the analysis and prediction of litigation outcomes with a high degree of precision.

Nevertheless, the implementation of AI in civil procedural law in Indonesia remains somewhat restricted. The primary impediments include insufficient technological infrastructure, opposition from legal professionals to the adoption of new technologies, regulatory hurdles, and algorithmic prejudice. This barrier impedes the prospective

utilization of AI to accelerate the court process, diminish litigation expenses, and enhance public access to justice. The adoption of AI without sufficient control can exacerbate prejudice in legal decision-making, jeopardizing the principles of substantive justice.

3. Methods

This research utilizes a normative legal approach,⁷ a strategy that concentrates on the examination of legislation, legal concepts, and pertinent literature. This research is descriptive-analytical, focused on delineating and examining the implementation of artificial intelligence (AI) in civil procedural law in Indonesia while also finding opportunities for further application. A comparative methodology further enhances this research by facilitating a juxtaposition of the Indonesian court system with those of other nations that have already integrated AI into civil procedural frameworks.

This study uses secondary data sourced⁸ from legislation, scholarly journals, books, and research reports relevant to the application of AI within the legal system. This study also examines legal documents, such as court rulings, judicial policies, and regulations relating to the digitization of court operations. We acquire primary data through comprehensive interviews with legal experts and judicial practitioners involved in the development or application of AI technology within the judicial system.

We studied the obtained data using content analysis methods, which involve reading and understanding the text of legal papers and related literature to find ways to integrate AI into civil procedural law. We perform this examination qualitatively, focusing on legal interpretation and normative research of relevant rules, and supplementing it with comparisons with practices in other nations. The analytical results will inform practical recommendations for maximizing AI utilization within the Indonesian civil legal system, as well as evaluate the relevance, advantages, and obstacles of applying this technology.

⁷ Dian Ekawaty Ismail, Novendri M. Nggilu, and Irlan Puluhalawa, *Metode Penelitian Hukum: Teori, Aplikasi, Dan Inovasi Dalam Penelitian Hukum*, ed. Tiara Oktaviana Namira Daud (Kalimantan Selatan: Ruang Karya, 2025).

⁸ Irwansyah Irwansyah, *Penelitian Hukum: Pilihan Metode & Praktik Penulisan Artikel* (Yogyakarta: Mirra Buana Media, 2020).

4. Artificial Intelligence in Civil Justice

4.1. Theoretical And Empirical Framework

The use of artificial intelligence (AI) in civil procedural law reform represents a significant advancement in modernizing the judicial system in the digital age.⁹ The theoretical framework underpinning this research encompasses numerous fundamental concepts such as legal technology, access to justice, and judicial efficiency. This research posits that legal technology, encompassing AI, can address the necessity to accelerate court procedures, diminish litigation expenses, and enhance public access to justice. The technological revolution in law is unavoidable, with AI serving as a fundamental component of this shift.¹⁰ The technology can automate repetitive operations in the legal process, including filing and case analysis, which formerly demanded considerable time and expense.

The application of AI in civil procedural law has commenced in several jurisdictions, particularly in industrialized nations such as the United States and the United Kingdom. In 2017, research conducted by Katz, Bommarito, and Blackman showed that artificial intelligence, especially through machine learning and predictive analytics, has been employed to examine millions of court cases to forecast litigation outcomes with considerable precision.¹¹ This minimizes ambiguity and accelerates the judicial decision-making process. Conversely, the 2020 study by Velicogna et al. showed that the implementation of AI in the European court system positively influenced access to justice, particularly for economically disadvantaged communities.¹² Chatbots and automated document processing systems have facilitated public access to legal

⁹ Lukman Santoso, Agus Triyanta, and Jawahir Thontowi, "Halal Tourism Regulations in Indonesia: Trends and Dynamics in the Digital Era," *Ijtihad: Jurnal Wacana Hukum Islam Dan Kemanusiaan* 22, no. 1 (August 1, 2022): 73–94, <https://doi.org/10.18326/ijtihad.v22i1.73-94>; N. A. S Yusuf, "Implementation of the E-Litigation System in Civil Cases in the COVID-19 Pandemic Situation," *Disruption Law Review* 1, no. 1 (2023): 64–77.

¹⁰ Qur'ani Dewi Kusumawardani, "Hukum Progresif Dan Perkembangan Teknologi Kecerdasan Buatan," *Veritas et Justitia* 5, no. 1 (June 26, 2019): 166–90, <https://doi.org/10.25123/vej.3270>.

¹¹ Daniel Martin Katz, Michael J. Bommarito, and Josh Blackman, "A General Approach for Predicting the Behavior of the Supreme Court of the United States," ed. Luís A. Nunes Amaral, *PLOS ONE* 12, no. 4 (April 12, 2017): e0174698, <https://doi.org/10.1371/journal.pone.0174698>.

¹² Marco Velicogna et al., "Connecting EU Jurisdictions: Exploring How to Open Justice Across Member States Through ICT," *Social Science Computer Review* 38, no. 3 (June 2020): 274–94, <https://doi.org/10.1177/0894439318786949>.

services, eliminating the need for significant expenses or extensive legal expertise.

Nonetheless, within Indonesia's framework, the use of AI in civil procedural law remains somewhat limited. The primary impediment is the absence of technical infrastructure and the reluctance of legal practitioners to embrace modern methodologies.¹³ This research indicates that while AI has considerable potential to enhance access and efficiency within Indonesia's judiciary, it is imperative to address legislative difficulties, algorithmic bias, and the necessity of training legal staff in the use of this technology. The notion of digital justice proposed by Tapscott & Tapscott is pertinent, highlighting that technology, despite its potential to enhance access, must conform to the ideals of openness, accountability, and equity.¹⁴

The 2020 study by Bench-Capon et al. underscores that the implementation of AI in the judiciary entails risks, especially with biases inherent in the utilized algorithms.¹⁵ In the absence of strict control, AI systems that learn from historical case data may perpetuate existing biases.¹⁶ Therefore, it is crucial to ensure that rigorous oversight regarding algorithm openness and ethical application supports the incorporation of AI in civil procedural law. This theoretical framework stresses the need for a multidisciplinary approach that includes law, technology, and policy to make sure that using AI in the justice system increases efficiency while upholding the principles of substantive justice.

AI has demonstrated its ability to manage labor-intensive legal processes globally, including document inspection, filing, and automated legal research.¹⁷ This is essential for establishing a more efficient and accessible judicial system for everyone. From a legal standpoint, the integration of AI into Indonesian civil procedure necessitates

¹³ Fl. Yudhi Priyo Amboro and Khusuf Komarhana, "Prospek Kecerdasan Buatan Sebagai Subjek Hukum Perdata Di Indonesia [Prospects Of Artificial Intelligence As A Subject Of Civil Law In Indonesia]," *Law Review*, no. 2 (November 29, 2021): 145, <https://doi.org/10.19166/lr.v0i2.3513>.

¹⁴ Raed A. Salha, Maher A. El-Hallaq, and Abdelkhalek I. Alastal, "Blockchain in Smart Cities: Exploring Possibilities in Terms of Opportunities and Challenges," *Journal of Data Analysis and Information Processing* 07, no. 03 (2019): 118–39, <https://doi.org/10.4236/jdaip.2019.73008>.

¹⁵ T.J.M. Bench-Capon, "Before and after Dung: Argumentation in AI and Law," ed. Francesca Toni, *Argument & Computation* 11, no. 1–2 (May 19, 2020): 221–38, <https://doi.org/10.3233/AAC-190477>.

¹⁶ Qur'ani Dewi Kusumawardani, "Hukum Progresif Dan Perkembangan Teknologi Kecerdasan Buatan," *Veritas et Justitia* 5, no. 1 (June 26, 2019): 166–90, <https://doi.org/10.25123/vej.3270>.

¹⁷ Paweł Marcin Nowotko, "AI in Judicial Application of Law and the Right to a Court," *Procedia Computer Science* 192 (2021): 2220–28, <https://doi.org/10.1016/j.procs.2021.08.235>.

ongoing monitoring and evaluation to guarantee that it not only expedites the process but also maintains the essential tenets of justice.

4.2. Analysis of Findings

Looking at the results of studies on how artificial intelligence (AI) is used in Indonesia's civil procedural law shows that AI has a lot of potential to make the legal system easier to use and more effective. The analytical findings derived from several sources and methodologies demonstrate that AI can improve the efficiency and precision of legal decision-making, consequently alleviating the burden on courts and accelerating the litigation process. This outcome corresponds with the theory of legal efficiency, which posits that an effective legal system can bolster public confidence in the court.¹⁸

AI can assist judges and legal professionals in the analysis of intricate case data, which is a significant discovery. Utilizing machine learning algorithms, AI can analyze patterns from historical case data, yielding more precise predictions on lawsuit outcomes. This corresponds with prior studies indicating that employing algorithms to assess legal situations enhances the precision of court decision forecasts, thereby allowing the parties engaged in the legal process to make more informed choices.¹⁹

This study's findings highlight the need to address issues such as legal ambiguity, algorithmic bias, and resistance to change, despite the potential benefits of AI deployment. Obermeyer et al. conducted research indicating that health algorithms employed in the United States demonstrate racial bias in forecasting medical requirements, leading to inequities in care provision.²⁰ A comparable issue may arise in the legal domain if there is inadequate supervision of the data used for training algorithms. Consequently, establishing a transparent oversight mechanism for the

¹⁸ Maria Dymitruk, "The Right to a Fair Trial in Automated Civil Proceedings," *Masaryk University Journal of Law and Technology* 13, no. 1 (June 30, 2019): 27–44, <https://doi.org/10.5817/MUJLT2019-1-2>.

¹⁹ João Marques Martins, "A System of Communication Rules for Justifying and Explaining Beliefs about Facts in Civil Trials," *Artificial Intelligence and Law* 28, no. 1 (March 2020): 135–50, <https://doi.org/10.1007/s10506-019-09247-y>.

²⁰ Ziad Obermeyer et al., "Dissecting Racial Bias in an Algorithm Used to Manage the Health of Populations," *Science* 366, no. 6464 (October 25, 2019): 447–53, <https://doi.org/10.1126/science.aax2342>.

implementation of AI in the legal domain is essential.²¹

The analysis of these results suggests that initiatives to educate legal professionals about the potential benefits and risks associated with this technology should accompany the deployment of AI. The analysis indicates that sufficient training will aid in the transition to AI utilization in legal processes.²² An effective education in legal technology helps to build practitioners' trust and comprehension, reducing ambiguity and apprehensions associated with the adoption of new technologies.²³

This research reveals new perspectives on the interplay between technology and law, highlighting that the incorporation of AI in civil procedural law may substantially alter the functioning of the justice system. However, we must execute these modifications meticulously, taking into account a variety of ethical, legal, and societal issues that could potentially impact justice within the legal framework.

The analysis of these results suggests that the implementation of AI in civil procedural law presents opportunities to improve efficiency and access to justice, while necessitating a meticulous and cohesive strategy to ensure that this technology serves not only as a tool but also upholds the essential principles of justice within the legal framework.

4.3. Influence on Theory and Practice

The utilization of artificial intelligence (AI) in civil procedural law profoundly influences both legal theory and practice. Theoretically, the application of AI contests the conventional paradigms that have historically governed legal studies, especially in relation to data processing and decision-making.²⁴ Legal theories grounded in prediction and data analysis are gaining prominence, particularly regarding choices informed by past facts. The digital revolution in law compels scholars and practitioners

²¹ Nicol Turner Lee, "Detecting Racial Bias in Algorithms and Machine Learning," *Journal of Information, Communication and Ethics in Society* 16, no. 3 (August 13, 2018): 252–60, <https://doi.org/10.1108/JICES-06-2018-0056>.

²² Irawati Salim Ismail, "The Role of Legal Aid Station in Legal Aid Services in District Courts Gorontalo City," *Estudiante Law Journal* 5, no. 2 (2023): 516–33.

²³ Paweł Marcin Nowotko, "AI in Judicial Application of Law and the Right to a Court," *Procedia Computer Science* 192 (2021): 2220–28, <https://doi.org/10.1016/j.procs.2021.08.235>.

²⁴ Karolina Ziemianin, "Civil Legal Personality of Artificial Intelligence. Future or Utopia?," *Internet Policy Review* 10, no. 2 (April 7, 2021), <https://doi.org/10.14763/2021.2.1544>.

to reevaluate foundational notions, including the functions of judges and the litigation process.

The use of AI in the judicial system can improve operational efficiency. For example, AI may automate document filing, case data analysis, and information administration, which once demanded considerable time and human labor.²⁵ This corresponds with Remus's research, indicating that numerous legal duties are amenable to automation, enabling lawyers and judges to concentrate on more important facets of litigation.²⁶ Implementing this technology can help reduce litigation expenses, thereby improving access to justice for a wider society.

Nonetheless, this effect is not wholly beneficial. The obstacles encountered in the deployment of AI in legal practice encompass ethical dilemmas and the potential for bias. The algorithms employed in the legal system may exhibit biases analogous to those inherent in the training data. This raises the possibility that AI systems' decisions may perpetuate existing societal inequities.²⁷ Consequently, establishing a regulatory framework to monitor and evaluate the application of AI in legal proceedings is essential for maintaining the ideals of fairness and transparency.

The use of AI in civil procedure also has an impact on legal education. Law schools and legal education institutions must incorporate a curriculum that encompasses technological competencies and an awareness of the application of AI in legal practice. Legal education that incorporates technical elements will prepare students for a more digitized job market and increase their understanding of the hazards and advantages of technology in the legal field.²⁸

²⁵ Ali Hadi Al-Obeidi and Muaath Sulaiman Al-Mulla, "The Legal Basis of the Right to Explanation for Artificial Intelligence Decisions in UAE Law," in *2022 International Arab Conference on Information Technology (ACIT)* (2022 International Arab Conference on Information Technology (ACIT), Abu Dhabi, United Arab Emirates: IEEE, 2022), 1–4, <https://doi.org/10.1109/ACIT57182.2022.9994088>.

²⁶ Dana Remus and Frank S. Levy, "Can Robots Be Lawyers? Computers, Lawyers, and the Practice of Law," *SSRN Electronic Journal*, 2015, <https://doi.org/10.2139/ssrn.2701092>.

²⁷ Miguel Ramón Viguri Axpe, "Ethical Challenges from Artificial Intelligence to Legal Practice," in *Hybrid Artificial Intelligent Systems*, ed. Hugo Sanjurjo González et al., vol. 12886, Lecture Notes in Computer Science (Cham: Springer International Publishing, 2021), 196–206, https://doi.org/10.1007/978-3-030-86271-8_17.

²⁸ Dinesh Kumar and Ram Manohar Singh, "Exploring Court Performance and Developing Its Scale," *International Journal for Court Administration* 13, no. 1 (April 22, 2022): 3, <https://doi.org/10.36745/ijca.399>.

The influence of AI integration on civil procedural law is highly intricate. On one hand, there exists the opportunity to enhance efficiency, diminish costs, and broaden access to justice. Conversely, issues such as bias, ethics, and the necessity for rigorous oversight are significant concerns. As a result, the formulation of prudent policies and appropriate education is critical to guaranteeing that AI implementation in legislation is both effective and equitable.

4.4. Recommendations for Subsequent Investigations

Within the realm of artificial intelligence (AI) use in civil procedural law, numerous proposals for future research exist that could deepen our comprehension of this technology's impact and improve its integration into legal practice. Initially, it is essential to perform longitudinal research that evaluates the enduring effects of AI integration inside the legal system. This research must examine the impact of AI technology on legal results, access to justice, and public confidence in the judicial system. The influence of new technology typically unfolds gradually, and longitudinal assessment can yield profound insights into the transformations inside legal practices.²⁹

Secondly, research on algorithmic bias in artificial intelligence needs augmentation. Given that algorithms have the potential to replicate and intensify existing injustices, comprehensive research on the manifestation of these biases within the legal framework is essential. We must have a thorough comprehension of the sources of bias in data and the methods for creating algorithms that lessen their impact.³⁰ This research must encompass an assessment of bias mitigation strategies and the creation of more equitable models.

²⁹ Teimur E. Zul'fugarzade, Madina A. Tsirina, and Olga I. Semykina, "Improvement of Legal Groundwork for the Online Dispute Resolution System," in *Artificial Intelligence: Anthropogenic Nature vs. Social Origin*, ed. Elena G. Popkova and Bruno S. Sergi, vol. 1100, Advances in Intelligent Systems and Computing (Cham: Springer International Publishing, 2020), 792–800, https://doi.org/10.1007/978-3-030-39319-9_87.

³⁰ Suncana Roksandic, Nikola Protrka, and Marc Engelhart, "Trustworthy Artificial Intelligence and Its Use by Law Enforcement Authorities: Where Do We Stand?," in *2022 45th Jubilee International Convention on Information, Communication and Electronic Technology (MIPRO)* (2022 45th Jubilee International Convention on Information, Communication and Electronic Technology (MIPRO), Opatija, Croatia: IEEE, 2022), 1225–32, <https://doi.org/10.23919/MIPRO55190.2022.9803606>.

Thirdly, the ethical implications of AI use in the legal field provide a significant domain for investigation. In order to address emerging technology issues, research must investigate the ethical concepts that can inform the development and implementation of AI within the legal system. It is essential to establish an ethical framework that encompasses both technological considerations and the social and cultural ramifications of technology deployment.³¹

Fourth, we should prioritize investigating the use of AI in legal education. Assessing how to modify law school curricula to incorporate pertinent skills becomes essential as technology becomes more prevalent in legal practice. Legal education that emphasizes technology will equip students to confront emerging legal practice issues.³²

It is critical to research the regulatory framework governing the application of AI in the justice system. Given the possible hazards and obstacles, it is essential to create policies that regulate the use of this technology, ensuring its implementation aligns with the values of equity and transparency. Consequently, robust regulations are essential to safeguard individual rights in the digital age.³³ These recommendations seek to lead future research towards a more thorough and multifaceted approach, ensuring that the implementation of AI in civil procedural law is efficient, equitable, transparent, and ethical.

4.5. Societal and ethical consequences

The implementation of artificial intelligence (AI) in civil procedural law not only transforms legal practice but also presents certain social and ethical considerations that warrant careful attention. This consequence pertains to fairness, openness, and the protection of individual rights in legal proceedings.

³¹ William H. Boothby, "Highly Automated and Autonomous Technologies," in *New Technologies and the Law in War and Peace*, ed. William H. Boothby, 1st ed. (Cambridge University Press, 2018), 137–81, <https://doi.org/10.1017/9781108609388.007>.

³² Manchester University et al., "Kiprah Filsafat Hukum Pada Pendidikan Hukum Di Era Kecerdasan Buatan (Artificial Intelligence)," *Literasi Hukum* 6, no. 2 (October 31, 2022): 16–27, <https://doi.org/10.31002/lh.v6i2.6802>.

³³ Ekaterina P. Rusakova and Evgenia E. Frolova, "Current Problems of Digital Justice in the BRICS Countries," in *Smart Technologies for the Digitisation of Industry: Entrepreneurial Environment*, ed. Agnessa O. Inshakova and Evgenia E. Frolova, vol. 254, Smart Innovation, Systems and Technologies (Singapore: Springer Singapore, 2022), 143–53, https://doi.org/10.1007/978-981-16-4621-8_12.

Primarily, a notable societal impact is the enhanced accessibility to justice. Artificial intelligence has the capacity to diminish litigation expenses and accelerate the judicial process, hence facilitating access to legal services for historically marginalized communities. Technology can equalize opportunities for individuals and groups lacking the resources to traverse the intricate legal system. However, if we do not complement this access with a thorough understanding of technology utilization, problems arise.³⁴ Education about AI and legal rights has become crucial to guarantee that its advantages are accessible to all strata of society.

Secondly, algorithmic prejudice has emerged as a significant ethical concern. Artificial intelligence can mirror the biases inherent in its training data, therefore impacting legal determinations. In a legal context, this may imply that the algorithms employed to assess risk or forecast outcomes could disproportionately disadvantage specific groups, exacerbating existing injustices. Consequently, it is imperative to devise and execute equitable and transparent algorithms.³⁵

Thirdly, when robots take over part of the decision-making process, ethical dilemmas arise. The application of AI in legal decision-making prompts inquiries on responsibility and accountability. Who is responsible for the losses incurred as a result of AI judgments? This necessitates a definitive legislative framework and ethical guidelines for applying AI in the legal field. To avoid alienation within the legal process, it is essential to have human oversight in decisions affecting individual lives.³⁶

Fourth, there are concerns pertaining to privacy and data security. The proliferation of AI has rendered personal data increasingly susceptible to exploitation. People may employ extensive data collection to surveil others and diminish their civil liberties. Consequently, it is essential to implement stringent legislation concerning data protection and privacy to preserve individual rights within the legal framework.

³⁴ Irene Coppola and José de Arimateia Barbosa, "Implicações sociais da justiça digital," 2022, [https://doi.org/10.34625/ISSN.2183-2705\(NE2V2\)2022.IC-06](https://doi.org/10.34625/ISSN.2183-2705(NE2V2)2022.IC-06).

³⁵ Sandra Wachter, Brent Mittelstadt, and Chris Russell, "Why Fairness Cannot Be Automated: Bridging the Gap between EU Non-Discrimination Law and AI," *Computer Law & Security Review* 41 (July 2021): 105567, <https://doi.org/10.1016/j.clsr.2021.105567>.

³⁶ Untung Rahardja, "Masalah Etis Dalam Penerapan Sistem Kecerdasan Buatan," *Technomedia Journal* 7, no. 2 (August 24, 2022): 181–88, <https://doi.org/10.33050/tmj.v7i2.1895>.

There is an immediate necessity for social discussion among many stakeholders, including scholars, legal professionals, policymakers, and civil society. Public discourse regarding emerging technologies' ethical and social ramifications is critical for ensuring that technological progress is consistent with overarching societal ideals. This debate aims to identify an equitable and transparent solution for the implementation of AI in the legal system.

The social and ethical ramifications of implementing AI in civil procedural law are intricate and diverse. We can utilize AI to enhance, rather than undermine, the integrity of the judicial system by comprehensively grasping its risks and advantages, alongside the implementation of justice and transparency principles.

5. Conclusion

This study highlights that the implementation of artificial intelligence (AI) in civil procedural law possesses significant potential to improve the efficiency and accessibility of the judicial system in Indonesia. Artificial intelligence can accelerate the legal process, diminish administrative constraints, and deliver more precise and consistent evaluations of instances necessitating intricate data processing. Nonetheless, the deployment of AI in Indonesia has numerous obstacles, such as insufficient technological infrastructure, weak regulatory frameworks, and opposition from conventional legal practitioners.

This research advances the concept of digital legal practice by asserting that AI transcends mere administrative utility, serving as a transformative instrument in the execution of civil procedural law. This conclusion suggests that the thorough and responsible integration of AI can improve access to justice and increase the speed and accuracy of judicial rulings. Nonetheless, ethical AI implementation supervision and the development of regulations that emphasize openness and responsibility remain critical.

References

- Aidi, Zil. "Implementasi E-Court Dalam Mewujudkan Penyelesaian Perkara Perdata Yang Efektif Dan Efisien." *Masalah-Masalah Hukum* 49, no. 1 (January 31, 2020): 80. <https://doi.org/10.14710/mmh.49.1.2020.80-89>.

- Al-Obeidi, Ali Hadi, and Muaath Sulaiman Al-Mulla. "The Legal Basis of the Right to Explanation for Artificial Intelligence Decisions in UAE Law." In *2022 International Arab Conference on Information Technology (ACIT)*, 1–4. Abu Dhabi, United Arab Emirates: IEEE, 2022. <https://doi.org/10.1109/ACIT57182.2022.9994088>.
- Amboro, Fl. Yudhi Priyo, and Khusuf Komarhana. "Prospek Kecerdasan Buatan Sebagai Subjek Hukum Perdata Di Indonesia [Prospects Of Artificial Intelligence As A Subject Of Civil Law In Indonesia]." *Law Review*, no. 2 (November 29, 2021): 145. <https://doi.org/10.19166/lr.v0i2.3513>.
- Axpe, Miguel Ramón Viguri. "Ethical Challenges from Artificial Intelligence to Legal Practice." In *Hybrid Artificial Intelligent Systems*, edited by Hugo Sanjurjo González, Iker Pastor López, Pablo García Bringas, Héctor Quintián, and Emilio Corchado, 12886:196–206. Lecture Notes in Computer Science. Cham: Springer International Publishing, 2021. https://doi.org/10.1007/978-3-030-86271-8_17.
- Bench-Capon, T.J.M. "Before and after Dung: Argumentation in AI and Law." Edited by Francesca Toni. *Argument & Computation* 11, no. 1–2 (May 19, 2020): 221–38. <https://doi.org/10.3233/AAC-190477>.
- Bone, Rahdian Ade Putra, and Chami Yassine. "Judicial and Administrative Approaches to Civil Service Dispute Resolution: A Comparative Study between Indonesia, India, and Egypt." *International Journal of Constitutional and Administrative* 1, no. 1 (2025): 21–41.
- Boothby, William H. "Highly Automated and Autonomous Technologies." In *New Technologies and the Law in War and Peace*, edited by William H. Boothby, 1st ed., 137–81. Cambridge University Press, 2018. <https://doi.org/10.1017/9781108609388.007>.
- Coppola, Irene, and José de Arimateia Barbosa. "Implicações sociais da justiça digital," 2022. [https://doi.org/10.34625/ISSN.2183-2705\(NE2V2\)2022.IC-06](https://doi.org/10.34625/ISSN.2183-2705(NE2V2)2022.IC-06).
- Dymitruk, Maria. "The Right to a Fair Trial in Automated Civil Proceedings." *Masaryk University Journal of Law and Technology* 13, no. 1 (June 30, 2019): 27–44. <https://doi.org/10.5817/MUJLT2019-1-2>.
- Hakim, Faisal Luqman. "Simplifikasi Prosedur Beracara Dengan Pemanfaatan Teknologi Dalam Rancangan Undang-Undang Hukum Acara Perdata." *ADHAPER: Jurnal Hukum Acara Perdata* 5, no. 1 (October 25, 2019): 1. <https://doi.org/10.36913/jhaper.v5i1.85>.
- Herliana, Herliana. "Maqasid Al-Sharia in Court-Mediation Reform: A Study on Efficiency and Social Justice in Medical Disputes." *De Jure: Jurnal Hukum Dan Syar'iah* 15, no. 2 (December 29, 2023): 214–29. <https://doi.org/10.18860/j-fsh.v15i2.23962>.

- Irwansyah, Irwansyah. *Penelitian Hukum: Pilihan Metode & Praktik Penulisan Artikel*. Yogyakarta: Mirra Buana Media, 2020.
- Ismail, Dian Ekawaty, Novendri M. Nggilu, and Irlan Puluhulawa. *Metode Penelitian Hukum: Teori, Aplikasi, Dan Inovasi Dalam Penelitian Hukum*. Edited by Tiara Oktaviana Namira Daud. Kalimantan Selatan: Ruang Karya, 2025.
- Ismail, Irawati Salim. "The Role of Legal Aid Station in Legal Aid Services in District Courts Gorontalo City." *Estudiante Law Journal* 5, no. 2 (2023): 516–33.
- Katz, Daniel Martin, Michael J. Bommarito, and Josh Blackman. "A General Approach for Predicting the Behavior of the Supreme Court of the United States." Edited by Luís A. Nunes Amaral. *PLOS ONE* 12, no. 4 (April 12, 2017): e0174698. <https://doi.org/10.1371/journal.pone.0174698>.
- Kumar, Dinesh, and Ram Manohar Singh. "Exploring Court Performance and Developing Its Scale." *International Journal for Court Administration* 13, no. 1 (April 22, 2022): 3. <https://doi.org/10.36745/ijca.399>.
- Kusumawardani, Qur'ani Dewi. "Hukum Progresif Dan Perkembangan Teknologi Kecerdasan Buatan." *Veritas et Justitia* 5, no. 1 (June 26, 2019): 166–90. <https://doi.org/10.25123/vej.3270>.
- . "Hukum Progresif Dan Perkembangan Teknologi Kecerdasan Buatan." *Veritas et Justitia* 5, no. 1 (June 26, 2019): 166–90. <https://doi.org/10.25123/vej.3270>.
- Manchester University, Aditya Putra Kurniawan, Triantono Triantono, Universitas Tidar, Indonesia, Muhammad Marizal, and Universitas Tidar, Indonesia. "Kiprah Filsafat Hukum Pada Pendidikan Hukum Di Era Kecerdasan Buatan (Artificial Intelligence)." *Literasi Hukum* 6, no. 2 (October 31, 2022): 16–27. <https://doi.org/10.31002/lh.v6i2.6802>.
- Marques Martins, João. "A System of Communication Rules for Justifying and Explaining Beliefs about Facts in Civil Trials." *Artificial Intelligence and Law* 28, no. 1 (March 2020): 135–50. <https://doi.org/10.1007/s10506-019-09247-y>.
- Nowotko, Paweł Marcin. "AI in Judicial Application of Law and the Right to a Court." *Procedia Computer Science* 192 (2021): 2220–28. <https://doi.org/10.1016/j.procs.2021.08.235>.
- . "AI in Judicial Application of Law and the Right to a Court." *Procedia Computer Science* 192 (2021): 2220–28. <https://doi.org/10.1016/j.procs.2021.08.235>.
- Obermeyer, Ziad, Brian Powers, Christine Vogeli, and Sendhil Mullainathan. "Dissecting Racial Bias in an Algorithm Used to Manage the Health of Populations." *Science* 366, no. 6464 (October 25, 2019): 447–53. <https://doi.org/10.1126/science.aax2342>.
- Rahardja, Untung. "Masalah Etis Dalam Penerapan Sistem Kecerdasan Buatan."

Technomedia Journal 7, no. 2 (August 24, 2022): 181–88.
<https://doi.org/10.33050/tmj.v7i2.1895>.

Remus, Dana, and Frank S. Levy. “Can Robots Be Lawyers? Computers, Lawyers, and the Practice of Law.” *SSRN Electronic Journal*, 2015.
<https://doi.org/10.2139/ssrn.2701092>.

Roksandic, Suncana, Nikola Protrka, and Marc Engelhart. “Trustworthy Artificial Intelligence and Its Use by Law Enforcement Authorities: Where Do We Stand?” In *2022 45th Jubilee International Convention on Information, Communication and Electronic Technology (MIPRO)*, 1225–32. Opatija, Croatia: IEEE, 2022.
<https://doi.org/10.23919/MIPRO55190.2022.9803606>.

Rusakova, Ekaterina P., and Evgenia E. Frolova. “Current Problems of Digital Justice in the BRICS Countries.” In *Smart Technologies for the Digitisation of Industry: Entrepreneurial Environment*, edited by Agnessa O. Inshakova and Evgenia E. Frolova, 254:143–53. Smart Innovation, Systems and Technologies. Singapore: Springer Singapore, 2022. https://doi.org/10.1007/978-981-16-4621-8_12.

Salha, Raed A., Maher A. El-Hallaq, and Abdelkhalek I. Alastal. “Blockchain in Smart Cities: Exploring Possibilities in Terms of Opportunities and Challenges.” *Journal of Data Analysis and Information Processing* 07, no. 03 (2019): 118–39.
<https://doi.org/10.4236/jdaip.2019.73008>.

Santoso, Lukman, Agus Triyanta, and Jawahir Thontowi. “Halal Tourism Regulations in Indonesia: Trends and Dynamics in the Digital Era.” *Ijtihad: Jurnal Wacana Hukum Islam Dan Kemanusiaan* 22, no. 1 (August 1, 2022): 73–94.
<https://doi.org/10.18326/ijtihad.v22i1.73-94>.

Sibarani, William. “Modern Justice: Indonesia’s Supreme Court’s Challenges to Uphold Fair Trial Principles Through Digitalization.” *Brawijaya Law Journal* 10, no. 1 (April 30, 2023): 106–21. <https://doi.org/10.21776/ub.blj.2023.010.01.07>.

Sukadi, Imam, and Erfaniah Zuhriah. “The Legal Policy of Judicial Power: The Idea of Implementation of Small Claim Courts in Religious Courts.” *De Jure: Jurnal Hukum Dan Syar’iah* 13, no. 1 (July 28, 2021). <https://doi.org/10.18860/j-fsh.v13i1.10913>.

Turner Lee, Nicol. “Detecting Racial Bias in Algorithms and Machine Learning.” *Journal of Information, Communication and Ethics in Society* 16, no. 3 (August 13, 2018): 252–60. <https://doi.org/10.1108/JICES-06-2018-0056>.

Velicogna, Marco, Ernst Steigenga, Sandra Taal, and Aernout Schmidt. “Connecting EU Jurisdictions: Exploring How to Open Justice Across Member States Through ICT.” *Social Science Computer Review* 38, no. 3 (June 2020): 274–94.
<https://doi.org/10.1177/0894439318786949>.

Wachter, Sandra, Brent Mittelstadt, and Chris Russell. “Why Fairness Cannot Be

Automated: Bridging the Gap between EU Non-Discrimination Law and AI.” *Computer Law & Security Review* 41 (July 2021): 105567. <https://doi.org/10.1016/j.clsr.2021.105567>.

Yusuf, N. A. S. “Implementation of the E-Litigation System in Civil Cases in the COVID-19 Pandemic Situation.” *Disruption Law Review* 1, no. 1 (2023): 64–77.

Ziemianin, Karolina. “Civil Legal Personality of Artificial Intelligence. Future or Utopia?” *Internet Policy Review* 10, no. 2 (April 7, 2021). <https://doi.org/10.14763/2021.2.1544>.

Zul’fugarzade, Teimur E., Madina A. Tsirina, and Olga I. Semykina. “Improvement of Legal Groundwork for the Online Dispute Resolution System.” In *Artificial Intelligence: Anthropogenic Nature vs. Social Origin*, edited by Elena G. Popkova and Bruno S. Sergi, 1100:792–800. Advances in Intelligent Systems and Computing. Cham: Springer International Publishing, 2020. https://doi.org/10.1007/978-3-030-39319-9_87.