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Integrating Artificial Intelligence in Indonesia's Arbitration: Navigating Legal and Political Challenges

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Abstract

As Indonesia explores the integration of artificial intelligence (AI) into its arbitration processes, it faces a complex landscape of challenges and opportunities. This study investigates how AI can enhance efficiency, transparency, and decision-making in arbitration, while also addressing significant legal and political concerns. From a legal perspective, the use of AI in arbitration raises issues of compatibility with existing laws, the need for ethical guidelines, and the protection of data privacy. Politically, the adoption of AI is influenced by the potential for shifting power dynamics, regulatory concerns, and the broader implications for national sovereignty and international relations. Through a detailed analysis of these factors, the study aims to provide insights into how Indonesia can effectively navigate the integration of AI in arbitration, balancing technological advancements with legal and political considerations. By offering recommendations for addressing these challenges, the research seeks to contribute to the development of a robust framework for AI-driven arbitration in Indonesia. This research finds that the legal political landscape influences how AI is regulated, with potential resistance from established legal institutions or political entities concerned about losing control or influence. From a legal perspective, AI systems can minimize biases or inaccuracies and potentially improve the impartiality and fairness of arbitration decisions. Current regulations may not fully address the unique challenges posed by AI, necessitating updates or new legislation to govern AI use in arbitration. It is therefore important to engage with political and legal stakeholders to address concerns and build consensus on the adoption of AI in arbitration.

Keywords: Artificial Intelligence; Arbitration; Legal; Politics; Regulatory.

Introduction

The rapid advancement of Artificial Intelligence (AI) technology has begun to transform various sectors, including arbitration. As a method of dispute resolution, arbitration is valued for its efficiency, confidentiality, and flexibility compared to

traditional court litigation. AI has been used in many parts of arbitration practice. Integrating AI into various fields has revolutionized traditional practices, and arbitration is no exception.[1] With the advancements in AI, arbitration practices have undergone significant changes.

AI technologies, including machine learning algorithms and natural language processing, have the capacity to transform multiple facets of arbitration. The convergence of artificial intelligence (AI) and international arbitration introduces both new opportunities and risks in the arbitration space. AI benefits arbitration in many ways such as making arbitrator's selection, management of arbitration proceedings and drafting arbitral awards.[2] These have created a more effective and efficient arbitral proceeding. On the one hand, AI enhances the efficiency and accuracy of various arbitration processes, from document review to legal research. Automating routine tasks reduces the time and cost associated with arbitration, and AI-driven insights enable more informed and strategic decision-making.

While the integration of AI in arbitration presents numerous opportunities, it also comes with challenges that need to be addressed. There are several risks associated with the use of AI in arbitration such as biases. privacy and confidentiality, integrity of proceedings and evidence and due process issues.[3] Those risks may lead to or inaccurate results, impacting the fairness of the arbitration process.[4] Excessive dependence on AI could diminish human oversight and the nuanced judgment that experienced arbitrators provide.[5] Additionally, the use of AI in handling sensitive

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[1] Elizabeth Chan, Kiran Nasir Gore and Eliza Jiang 'Harnessing Artificial Intelligence in International Arbitration Practice' (2023) 16 Contemporary Asia Arbitration Journal.[263].

[2] Mohammad Azam Hussain, *et al.*, 'The Potential Prospect Of Artificial Intelligence (Ai) In Arbitration From The International, National And Islamic Perspectives' (2023) 19 Journal of International Studies <https://doi.org/10.32890/jis2023.19.1.4>. [102-103].

[3] Agus Agus, *et al.*, 'The Use of Artificial Intelligence in Dispute Resolution Through Arbitration: The Potential and Challenges' (2023) 29 SASI. [574-575]

[4] Jenny Gesley, 'Artificial "Judges"? – Thoughts on AI in Arbitration Law' (*Library of Congress*, 2021) <https://blogs.loc.gov/law/2021/01/artificial-judges-thoughts-on-ai-in-arbitration-law/> accessed 31 August 2024.

[5] Aditya Singh Chauhan, 'Future of AI in Arbitration: The Fine Line Between Fiction and Reality' (*Kluwer Arbitration Blog*, 2020) <https://arbitrationblog.kluwerarbitration.com/2020/09/26/future-of-ai-in-arbitration-the-fine-line-between-fiction-and-reality/> accessed 31 August 2024.

data raises concerns about data privacy and security.[6]

Considering the risks, its deployment must be measured and thoughtful to mitigate risks that are rapidly emerging, including to maintain accuracy and credibility before tribunals, and preserve privacy rights and the confidentiality of sensitive information. Indonesia, as a rapidly developing nation with a growing legal sector, Indonesia is well-positioned to leverage AI to enhance the efficiency, transparency, and accessibility of its arbitration system. Meanwhile, with its unique legal and regulatory landscape, there are both opportunities and hurdles in embracing AI-driven arbitration. On the one hand, AI technologies have the potential to streamline arbitration procedures, reduce human error, and provide more objective decision-making. On the other hand, implementing AI in this field raises significant concerns regarding legal compatibility, ethical considerations, and technological readiness. Issues such as the transparency of AI decision-making processes, data privacy, and the need for legal professionals to adapt to new technologies must be addressed.[7]

From a political point of view, the use of AI in arbitration is challenging due to several factors that intersect with issues of sovereignty, fairness, regulation, and international relations. Long-running discussions about the advantages and disadvantages of using AI are based on idealistic and pessimistic visions of politics and technology.[8] In the political realm, AI aids in the operation of political institutions by helping address public demands and concerns directed at legislative bodies.[9] The political process of updating or creating new regulations to govern

[6] International Chamber of Commerce (ICC), 'Leveraging Technology for Fair, Effective and Efficient International Arbitration Proceedings' (International Chamber of Commerce (ICC) 2022).[12].

[7] Janine Haesler and Tim Isler, 'Navigating the Main Impacts of Artificial Intelligence in International Arbitration: Insights from the ICC YAAF Workshop' (*Kluwer Arbitration Blog*, 2024) <https://arbitrationblog.kluwerarbitration.com/2024/03/17/navigating- the-main-impacts-of-artificial-intelligence-in-international-arbitration- insights-from-the-icc-yaaf-workshop/> accessed 31 August 2024.

[8] Viki Auslender, 'Artificial Intelligence Discourse Dominated by Utopian and Dystopian Prophecies' (*CTech News*, 2023) <https://www.calcalistech.com/ctechnews/article/ups0y6m02> accessed 31 August 2024.

[9] Sarah Kreps and Maurice Jakesch, 'Can AI Communication Tools Increase Legislative Responsiveness and Trust in Democratic Institutions?' (2023) 40 Government Information Quarterly. [101829].

the use of AI in arbitration is often contentious. Policymakers must balance the need for innovation with the necessity of maintaining legal standards and protecting stakeholders' rights. The challenge lies in crafting regulations that are both forward-thinking and protective of existing legal principles.

AI systems used in arbitration may rely on historical data that contain biases or patterns of discrimination. For instance, if an AI tool trained on past arbitration decisions has been exposed to biased rulings, it may inadvertently perpetuate those biases in its decisions. This could affect the impartiality and fairness of outcomes. The challenge arises in ensuring accountability for these AI-generated decisions. If a biased decision is made by an AI, it is unclear who should be held responsible: the developers, the users, or the legal institutions that adopted the AI. Existing legal frameworks in Indonesia do not fully address this issue, creating uncertainty and potential legal disputes over AI's role in arbitration.

From the political point of view, the introduction of AI in arbitration could be perceived as a threat to the control and influence of established legal and political institutions in Indonesia. There could be significant political resistance to changing current regulatory frameworks to accommodate AI in arbitration. Politically, adopting AI may be seen as ceding some degree of human judgment to machines, which could be framed as a loss of sovereignty or self-determination. AI is not a direct equivalent of the human mind. The analogy suggests that, with proper training or ample resources, it is possible to create human-like intelligence. However, this view overlooks the critical aspects of human embodiment, interaction, and the need for contextual understanding within a broader ecological context. From an analog perspective, intelligence is viewed as an independent entity that exists separately from social, cultural, historical, and political influences. However, the notion of intelligence is fundamentally biased and has often been used to justify power structures, causing considerable harm in various historical periods and social contexts.[10]

[10] Kate Crawford, 'Atlas of AI: Power, Politics, and the Planetary Costs of Artificial Intelligence' (2022) 74 Perspectives on Science and Christian Faith.[61].

Those legal and political challenges of AI in arbitration make the study on AI in arbitration important. The integration of AI into arbitration processes offers the promise of further enhancing these benefits by improving efficiency, accuracy, and impartiality. However, the adoption of AI in arbitration also brings forth a myriad of challenges, particularly within the specific context of Indonesian legal frameworks.[11] Thus, the objective of the study is to examine how artificial intelligence can be integrated into Indonesia's arbitration processes while navigating the associated legal and political challenges. This research aims to answer how AI can overcome the problems of biases or inaccuracies and how might AI improve impartiality and fairness of arbitral outcomes in Indonesia; and how to ensure transparent and secure AI integration in Indonesian arbitration processes.

While there is a growing body of research on the use of AI in arbitration, much of the existing scholarship focuses on its technical, procedural, and legal aspects. The following studies are relevant to the topic of AI and arbitration: Ethical Theory in AI by Budi; Harnessing AI in International Arbitration Practice by Chan et al; AI and Arbitration: A Perfect Fit? by Dodokin et al. and The Potential Prospect of AI in Arbitration from International, National and Islamic Perspectives by Hussain et al. While these works explore various dimensions of AI in arbitration, they primarily focus on legal aspects. On the other hand, research addressing AI and its intersection with politics, such as Power, Politics, and the Planetary Cost of AI by Crawford, often neglects arbitration-specific discussions. This highlights a significant gap in existing scholarship. The integration of artificial intelligence into Indonesia's arbitration processes, particularly in the context of legal and political challenges, introduces a novel perspective to the field by bridging these two critical areas of study.

This research employs a socio-legal research approach, combining normative legal analysis with qualitative methods to explore the legal and

[11] Flora P Kalalo and Kathleen C Pontoh, 'The Use of Artificial Intelligence (AI) in Legal Framework for International Arbitration Practices in Indonesia', *the Arbitration and Alternative Dispute Resolution International Conference* (ADRIC 2019).[10].

political dimensions of integrating AI in arbitration in Indonesia. The normative aspect focuses on understanding the legal norms governing arbitration and the adoption of AI within this context, assessing their compatibility, identifying gaps, and proposing reforms. Meanwhile, the qualitative element complements the analysis by incorporating insights from other scholarly perspectives to provide a broader understanding of the socio-political implications of AI integration in arbitration. It provides insights into how political dynamics, regulatory concerns, and institutional interests influence the development and implementation of AI technologies in the Indonesian legal landscape.

Potential Biases or Inaccuracies in Arbitration Decisions and how AI Increase the Impartiality and Fairness of Arbitration

AI systems, such as machine learning models, operate by analyzing large datasets and identifying patterns within them to make decisions. These decisions can vary from straightforward tasks to more complicated ones. This highlights the crucial impact AI algorithms have on different facets of our daily lives and emphasizes the substantial influence held by those who create and implement these algorithms. The outcomes produced by AI systems can have significant and wide-ranging effects.[12]

In the context of arbitration, AI systems can similarly process large amounts of legal data—such as past cases, statutes, legal precedents, and relevant documents—to identify patterns and support decision-making. AI in arbitration could perform tasks ranging from simple ones, like sorting and categorizing documents or predicting the likely duration of a case, to more complex decisions, such as assessing the merits of a claim, predicting potential outcomes, or even suggesting awards based on historical data.[13]

The use of AI in arbitration underscores the profound impact that algorithms could have on the fairness, efficiency, and transparency of the arbitration process.

[12] Caroline Paskarina, 'Artificial Intelligence in Politics: Contesting Power in Human and Nonhuman Relations in the Digital Era' (2004) 9 Jurnal Wacana Politik.

[13] Chan (n 1).[269].

However, it also raises important concerns about the influence wielded by those who design and deploy these AI tools.[14] Since AI can significantly shape arbitration outcomes, the biases and assumptions built into the algorithms can lead to far-reaching consequences. This could affect the impartiality of arbitration proceedings, especially if the AI systems are not adequately monitored, regulated, or balanced with human oversight. Thus, it becomes crucial to critically evaluate the use of AI in arbitration to ensure that it enhances rather than undermines the justice process.[15]

Arbitration is widely used for its flexibility, confidentiality, and ability to provide specialized decision-making.[16] The parties involved in arbitration can customize the process to meet their specific needs, including choosing the governing rules, the location of the proceedings, and the language used. For those prioritizing discretion, arbitration offers a private setting where issues can be resolved without public exposure. Additionally, arbitration enables the selection of arbitrators with specialized expertise relevant to the dispute, which is particularly beneficial in complex or technical cases requiring in-depth knowledge. These attributes make arbitration a highly effective and appealing option for dispute resolution[17] and ultimately improving access to justice for all parties involved.

a. Impartiality and Fairness

Legal challenges in traditional arbitration can be expensive, especially when using institutional arbitration bodies that charge substantial administrative fees that can significantly increase the overall cost of arbitration. The costs of maintaining the institution, including staff salaries, office facilities, and other operational expenses, are factored into the fees charged to parties. These overhead costs can make arbitration through an institution more expensive than

[14] Hussain (n 2). [115-116].

[15] Fabrega and Fabrega 110 ARIFA Arias, 'Artificial Intelligence (AI): Are Machines Revolutionizing International Arbitration?' (*110 ARIFA Arias, Fabrega & Fabrega*) <https://www.arifa.com/articles-and-publications/n-1864/artificial-intelligence-ai-are-machines-revolutionizing-international- arbitration.html#:~:text=The reliance on AI in,integrity of AI-generated outcomes> accessed 31 August 2024.

[16] Reginald A Holmes and Merriann M Panarella, 'Business Essentials for Neutrals: Starting, Growing, and Sustaining Your Practice' (2018) 11 NYSBA: New York Dispute Resolution Lawyer.[15].

[17] Sundra Rajoo, *Law, Practice and Procedure Arbitration* (2th edn, LexisNexis 2016).[5-7].

ad hoc arbitration, where parties manage the process themselves.[18] These fees can accumulate, particularly in lengthy or complex cases. Parties must pay for the arbitrators' time, which can be costly, especially if the case requires highly specialized arbitrators or multiple arbitrators. This contrasts with the judiciary system, where judges are publicly funded.[19]

Arbitrators may interpret laws and contractual terms in different ways, leading to bias and inconsistent outcomes in similar cases. This variability can cause uncertainty for parties who expect predictable results. For businesses that depend on arbitration to resolve disputes, inconsistent interpretations can make it difficult to accurately assess risks and make informed decisions about entering contracts or pursuing arbitration. When similar cases yield different outcomes due to differing interpretations by arbitrators, it can create a perception of unfairness among the involved parties.[20] This perception can weaken confidence in the arbitration process, as parties may feel that their case was not handled equitably compared to others. The effectiveness and credibility of arbitration as a dispute resolution method rely on the consistency of decisions. If parties believe that the process produces arbitrary or inconsistent results, it can diminish trust in arbitration as a fair and reliable means of resolving disputes.[21]

The integration of AI into arbitration presents promising opportunities to address the above-mentioned challenges associated with traditional arbitration processes, including efficiency, cost, and consistency in decision-making explained above. The following part explains how each problem can be resolved using AI.

b. Efficiency and Speed

AI technologies, such as machine learning and Natural Language Processing (NLP), have the potential to increase the efficiency and speed of arbitration

[18] Christopher R Drahozal, 'Arbitration Costs and Forum Accessibility: Empirical Evidence' (2008) 41 University of Michigan Journal of Law Reform.[816-817].

[19] *Article 2, Government Regulation in Lieu of Law No 2 of 2022*.

[20] WW Park, 'Arbitrators and Accuracy' (2010) 1 Journal of International Dispute Settlement. [30-31].

[21] Michael Herdi Hadylaya, 'Harmonizing Arbitration: Clarity, Consistency, and Consent in the Application of Ex Aequo Et Bono' (2024) 6 Jambura Law Review.[89-91].

significantly. According to Ashwini and Avinash, AI can automate routine tasks such as document review and case law analysis, which traditionally consume significant time and resources.[22] AI-powered tools can rapidly analyze vast amounts of legal documents and extract relevant information, allowing arbitrators to focus on more complex aspects of the case.[23] AI has played a key role in automating tasks like document review and production, which are essential but often time-consuming elements of arbitration.[24] By analyzing large volumes of case data, AI can identify trends and patterns that might not be immediately apparent. This information can be used to make more informed decisions and improve overall case management. AI-powered tools can quickly sort through massive amounts of documents, find pertinent information, and generate summaries, improving the effectiveness and precision of the arbitration process.[25] These tools use AI algorithms to organize hearings, manage case data, and even help with decision-making.[26]

Moreover, AI can facilitate faster communication and coordination among parties involved in arbitration. For instance, AI-driven platforms can manage scheduling, organize virtual hearings, and ensure timely dissemination of information.[27] AI can analyze feedback from previous arbitration processes to identify areas for improvement. This helps refine procedures and enhance the efficiency of future arbitrations. As noted by Paul, Mansi and Steven, the use of AI in these processes can lead to a reduction in procedural delays and expedite the resolution of disputes.[28]

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[22] Ashwini V. Zadgaonkar and Avinash J Agrawal, 'An Overview of Information Extraction Techniques for Legal Document Analysis and Processing' (2021) 11 International Journal of Electrical and Computer Engineering (IJECE).[5451].

[23] *ibid*.[5454].

[24] Chan (n 1).[269].

[25] Alison Wilkinson, 'How Natural Language Processing Can Improve Legal Search Results' (*Kira Systems*) <https://kirasystems.com/learn/how-natural-language-processing-improving-can-improve-legal-search-results/> accessed 31 August 2024.

[26] New Era ADR, 'New Era ADR' (*31 August 2024*) <https://www.neweraadr.com/> accessed 31 August 2024.

[27] Paul Bennet Marrow Mansi Karol and Steven Kuyan, 'Arbitration: The Computer as an Arbitrator—Are We There Yet?' (2020) 74 Dispute Resolution Journal.[38].

[28] *ibid.*[41].

c. Cost Reduction

The adoption of AI in arbitration has the potential to reduce costs significantly. AI tools can lower legal fees by reducing the time spent on labor- intensive tasks such as legal research, document management, and evidence assessment.[29] AI-powered virtual assistants can handle routine tasks such as scheduling, answering common queries, and providing updates, allowing human arbitrators and legal teams to focus on more complex aspects of the arbitration. By automating these processes, law firms and arbitration institutions can pass on savings to their clients.[30]

Additionally, AI can reduce costs by minimizing the need for physical infrastructure. AI can streamline the handling of documents by categorizing, tagging, and retrieving them efficiently. This reduces time spent searching for information and ensures that all parties have access to relevant documents quickly. Virtual arbitration platforms, powered by AI, allow for remote participation, eliminating travel expenses and other logistical costs associated with in-person hearings.[31] Furthermore, AI can help predict case outcomes and settlement values,[32] enabling parties to make more informed decisions about pursuing arbitration, which can avoid unnecessary expenses.

d. Enhanced Decision-Making

AI has the potential to enhance decision-making in arbitration by providing data-driven insights and improving consistency. AI algorithms can analyze past arbitration awards and identify patterns that may influence the outcome of

[29] William S Veatch, 'Artificial Intelligence and Legal Drafting' (*American Bar Association Legal Analytics Committee Newsletter*, 2019) <https://www.americanbar.org/groups/business_law/publications/committee_newsletters/legal_analytics/2019/201904/ai-legal-drafting/> accessed 31 August 2024.

[30] Volodymyr Zhukov, 'AI for Lawyers: Artificial Intelligence for Modern Legal Practices' (*Medium*, 2024) <https://zhukov.live/ai-for-lawyers-artificial-intelligence-for-modern-legal-practices-1758cbc89abd> accessed 31 August 2024.

[31] Marrow (n 27).[72].

[32] Harry Surden, 'The Ethics of Artificial Intelligence in Law: Basic Questions', *Forthcoming Chapter in Oxford Handbook of Ethics of AI* (University of Colorado Law Legal Studies Research Paper 2020).[735].

current cases.[33] This capability allows arbitrators to consider a broader range of precedents and apply them more consistently across cases. Moreover, AI can assist in reducing human biases in arbitration decisions.[34] According to Ali and Faraz, AI systems can be programmed to evaluate cases based on objective criteria,[35] thereby minimizing the influence of cognitive biases that may affect human arbitrators. However, implementing AI in decision-making must be approached cautiously to ensure transparency, accountability, and fairness.[36] AI algorithms can be influenced by biases present in the data they are trained on. To ensure fair decision-making, it's crucial to use diverse datasets and carefully review AI-generated outcomes. Additionally, the use of AI raises ethical concerns. It's important to consider these ethical implications and ensure AI is used responsibly.

AI can also enhance the quality of decision-making by offering predictive analytics tools that provide probabilistic assessments of potential outcomes.[37] These tools can guide arbitrators in making more informed judgments by highlighting potential risks and benefits associated with different decisions. Generative AI, particularly LLMs like ChatGPT-4 and Google's Bard, has gained prominence for generating human-like text based on open-ended questions.[38] Arbitration procedures increasingly incorporate these technologies for various reasons. Customizable prompts can be used to instruct generative AI to produce particular results. This capacity comes in handy when creating counterarguments, writing legal documents,

[33] Mohammad Solhchi and Faraz Baghbanno, 'Artificial Intelligence And Its Role In The Development Of The Future Of Arbitration' (2023) 2 International Journal of Law in Changing World.[62].

[34] *ibid.*[65].

[35] *ibid.*[65-66].

[36] *ibid*.[66].

[37] Muhammad Eid Balbaa and Marina Sagatovna, 'The Impact Of Artificial Intelligence In Decision Making: A Comprehensive Review' (2024) 27 EPRA International Journal of Economics, Business and Management Studies.[27-30].

[38] Parth Shah and Ben Khalesi, 'ChatGPT vs. Gemini: Which Gives the Better Answers?' (*Android Police*, 2024) <https://www.androidpolice.com/chatgpt-vs-google-bard-better-answers/> accessed 31 August 2024.

and editing emails and articles.[39] Regarding transcription, AI can provide real-time meeting and hearing transcription, which saves time and produces accurate recordings that are necessary for reference and decision-making.[40]

In terms of legal research, AI platforms such as Lex Machina and Arbilex are used to analyze historical case data, legal precedents, and financial metrics.[41] These insights help attorneys make well-informed decisions and execute effective strategies. AI tools are capable of effectively performing extensive factual and legal research helping legal practitioners prepare for cases and develop strategies by analyzing large volumes of data and delivering pertinent insights. Furthermore, AI-powered translation systems have become indispensable because participants to international arbitration frequently originate from various linguistic backgrounds. These solutions ensure clear communication and understanding between parties by providing correct translations in real time.[42] Another benefit of AI is to enhance conflict management and arbitrator due diligence by providing data-driven inputs.[43] Tools such as Jus Connect facilitate communication between attorneys and provide a safe space for exchanging ideas, so encouraging openness and impartiality in the choice of arbitrators.[44]

Integrating artificial intelligence into arbitration presents numerous opportunities for improving efficiency and speed, reducing costs, and enhancing decision-making. While the potential benefits of AI in arbitration are substantial, ethical and legal considerations must be addressed to ensure that AI is implemented in a manner that upholds the integrity and fairness of the arbitration process. As AI technology evolves, its role in arbitration will likely expand, offering new possibilities for resolving disputes more effectively.

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[39] Partha Pratim Ray, 'ChatGPT: A Comprehensive Review on Background, Applications, Key Challenges, Bias, Ethics, Limitations and Future Scope' (2023) 3 Internet of Things and Cyber-Physical Systems.[121].

[40] Joseph Regalia, 'From Briefs to Bytes: The GAI Renaissance in Legal Writing' [2023] SSRN Electronic Journal.[24].

[41] Lex Machina, 'Lex Machina' <https://lexmachina.com> accessed 31 August 2024.

[42] Yasir Abdelgadir Mohamed, *et al.*, 'The Impact of Artificial Intelligence on Language Translation: A Review' (2024) 12 IEEE Access.[25554].

[43] David L Evans, 'Dispute Resolution Enhanced: How Arbitrators and Mediators Can Harness Generative AI' (2024) 78 Dispute Resolution Journal.[33].

[44] Chan (n 1).[272].

Impartiality and fairness are fundamental principles in arbitration that ensure the process is just and the outcome is equitable for all parties involved. In the context of arbitration, these concepts are vital for maintaining trust and legitimacy in the dispute resolution process. Impartiality refers to the absence of bias or favoritism by the arbitrator toward any party involved in the dispute. An impartial arbitrator does not have any preconceived notions or interests that could influence the arbitration outcome.[45] Fairness in arbitration relates to the equitable treatment of all parties, ensuring that the arbitration process is just, transparent, and consistent with legal norms and procedural rules. Fairness is vital for upholding the rule of law in arbitration and ensuring that all parties feel they have been heard and their rights protected.[46]

The use of AI in arbitration has the potential to enhance impartiality and fairness in several ways by reducing human biases, increasing consistency in decision-making, and ensuring a speedy and more transparent process. AI systems, such as machine learning algorithms, can be programmed to make decisions based solely on data and established legal principles, without being influenced by personal biases, emotions, or external pressures that might affect human arbitrator.[47] AI can be programmed to apply legal rules consistently across cases, reducing the variability that may come with different arbitrators interpreting rules differently. This uniformity can lead to more predictable outcomes, enhancing fairness. When AI algorithms are transparent, the logic behind each decision can be clearly explained and documented.[48] This transparency helps all parties understand how a decision was reached, reducing suspicions of bias or unfairness. AI can help balance the

[45] Ronán Feehily, 'Neutrality, Independence and Impartiality in International Commercial Arbitration, A Fine Balance in the Quest For Arbitral Justice' (2019) 7 Penn State Journal of Law & International Affairs.[90].

[46] Nana Japaridze, 'Fair Enough? Reconciling the Pursuit of Fairness and Justice with Preserving the Nature of International Commercial Arbitration' (2008) 36 Hofstra Law Review.[10].

[47] Robin Dodokin, *Artificial Intelligence and Arbitration: A Perfect Fit?* (ADR Institute of Canada 2023).

[48] Heike Felzmann, 'Transparency You Can Trust: Transparency Requirements for Artificial Intelligence between Legal Norms and Contextual Concerns' (2019) 6 Big Data & Society. 205395171986054.[1-2]

scales between parties with different levels of resources by providing access to comprehensive legal analysis tools and resources, reducing the advantage that well-resourced parties may have in arbitration.

Ensuring Transparent and Secure AI Integration in the Indonesian Arbitration Process

The use of AI in arbitration in Indonesia is still in its developmental phase and has yet to be fully implemented. The use of AI technology poses significant challenges to legal and ethical issues. If AI technology becomes dependent, it will raise important ethical issues, particularly regarding data privacy, and the integrity of AI-generated results.[49] In addition, there are concerns about the impact of AI technology on human employment and potentially long-term concerns about the possibility of AI technology surpassing human capabilities (superintelligence).[50] As such, AI technology in arbitration should be based on digital ethics and the law, with bias and AI hallucination being important components to avoid.[51] In this regard, there is a need for a clear and comprehensive regulation on the use of AI that governs the law, ethical standards, and data security. This action minimizes the risk that AI technology can be used improperly, especially in arbitration dispute resolution.

The intersection of arbitration and politics becomes pronounced when considering the use of AI, as both process and outcomes of arbitration can have significant political implications. This is especially true in arbitration cases which involve governments, state-owned enterprises, multinational corporations since they often touch upon public policy and sovereignty issues. The selection of arbitrators, the transparency of AI usage and the interpretation of public policy exceptions in

[49] Fabrega and Fabrega 110 ARIFA Arias (n 15).

[50] Raharjo Budi, *Ethical Theory in Artificial Intelligence (AI)* (Prima Agus Teknik Foundation 2023).[3].

[51] Ahmad M Ramli, 'Fenomena Baru AI Dan Arbitrase Bisnis' (*Kompas.com*, 2024) <https://www.kompas.com/konsultasihukum/read/2024/02/07/165548380/fenomena-baru-ai-dan-arbitrase-bisnis?page=all#> accessed 31 August 2024.

arbitral awards are areas where political considerations may influence outcomes, highlighting the connection between arbitration and politics in the age of AI.

Regulating AI in arbitration from a political point of view involves several considerations. Ensuring transparency and accountability in AI decision-making is a significant political issue. Governments must balance the need for transparent AI operations with protecting proprietary technology and competitive advantage. The Indonesian government has not yet implemented comprehensive regulations specifically addressing AI. The existing regulatory framework does not specifically cover the application of AI in arbitration processes. Although the Agency for the Assessment and Application of Technology (BPPT) has released the National Artificial Intelligence Strategy of Indonesia 2020-2045, the strategy remains general and lacks the detailed regulations needed for the effective and secure integration of AI in this area.[52] As of now, Indonesian arbitration law does not specifically regulate the use of artificial intelligence. The legal framework governing arbitration in Indonesia primarily is the Arbitration Law (Law No. 30 of 1999); this law regulates arbitration and alternative dispute resolution in Indonesia but does not address AI-related issues directly.

The Information and Electronic Transactions Law (UU ITE) and the Government Regulation on the Implementation of Electronic Systems and Transactions (PP PSTE) are used to govern AI applications in a general sense. According to Indonesian law, AI is classified as an "Agen Elektronik," so the regulations pertaining to "Agen Elektronik" also apply to AI.[53] However, these regulations do not adequately address the specific challenges of using AI in arbitration. The development and regulation of AI in this context are still in their early stages, with important issues like transparency in AI decision-making and safeguarding sensitive information during arbitration yet to be fully addressed.[54]

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[52] Zahrasafa P Mahardika and Angga Priancha, 'Pengaturan Hukum Artifical Intelligence Indonesia Saat Ini' (*HukumOnline.com*, 2021) <https://www.hukumonline.com/berita/a/pengaturan-hukum-artifical-intelligence-indonesia-saat-ini-lt608b740fb22b7/> accessed 31 August 2024.

[53] *Article 1, Law No 1 of 2024 on the Amendment of Law No 11 of 2008 on Information and Electronic Transaction*.

[54] Mahardika (n 52).

The primary challenges in implementing AI in arbitration in Indonesia encompass several crucial aspects. Firstly, regulation and governance, wherein the use of AI in arbitration is not explicitly addressed within Indonesian legislation.[55] While efforts are being made to formulate a national strategy on artificial intelligence, there remains a need for well-defined regulations concerning the ethical use and application of AI within the legal framework.[56] This ambiguity can lead to legal and ethical risks in applying AI technology in arbitration.[57] Furthermore, governments and regulatory bodies should develop clear legal frameworks governing the use of AI in arbitration, addressing issues such as data privacy, liability, and transparency. Moreover, there is a need to educate and train legal professionals on the potential benefits and risks of AI, enabling them to use AI effectively and responsibly. Improved understanding of legal professionals in the use of AI is needed because excessive reliance on AI can diminish the value of human judgment and expertise, which are crucial for making decisions that consider specific circumstances.

Secondly, the use of AI in arbitration raises issues of privacy and data security.[58] Data security involves safeguarding databases and other data sets from unauthorized access, misuse, and compromise.[59] Data security is essential to prevent unauthorized individuals from misusing the private information of parties involved in arbitration. Privacy and data security have always been paramount in arbitration, especially in resolving disputes. However, there are threats to data privacy and security. In this regard, there is an opportunity for data collection that may involve personal information categorized as sensitive by the disputing parties, and there is a risk that the data collected will be used for purposes other

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[55] Chasandra Puspitasari, 'Tantangan Dalam Pengembangan Teknologi Artificial Intelligence Di Indonesia' (*Binus University*, 2022) <https://binus.ac.id/malang/2022/08/tantangan-dalam-pengembangan- teknologi-artificial-intelligence-di-indonesia> accessed 31 August 2024.

[56] *ibid.*

[57] *ibid.*

[58] Ferinda K Fachri, 'Catatan Penting Sebelum Memilih Forum Arbitrase Internasional' (*HukumOnline.com*) <https://www.hukumonline.com/berita/a/catatan-penting-sebelum-memilih-forum-arbitrase-internasional-lt668d7521d4bfe?page=2> accessed 31 August 2024.

[59] Sandeep Dhawan, 'Information and Data Security Concepts, Integrations, Limitations and Future' (2014) 3 International Journal of Advanced Information Science and Technology (IJAIST). [9-13].

than the arbitration hearing process without the consent of the disputing parties. Even data stored and collected from AI technology is prone to becoming the target of cyber-attacks, leading to data leakage.[60] Large volumes of sensitive data, including private company information, legal documents, and personal information, are processed and evaluated by AI systems when used in arbitration. Lawyers and arbitration institutions must be cautious in managing sensitive data that may be involved in the arbitration process, especially when using AI tools that automatically process information.[61] Sensitive data should be encrypted both in transit and at rest. This ensures that even if unauthorized access occurs, the data remain unreadable and secure. Strict access controls must be implemented to ensure that only authorized individuals can access sensitive information using multi-factor authentication and regularly updating access permissions to minimize the risk of unauthorized access.[62]

Thirdly, even though AI in arbitration can be used to manage information about a dispute, analyze evidence, and make predictions about the potential outcome of a dispute,[63] AI has technical problems. The most common relates to the inaccuracy of the data processed by AI.[64] These inaccuracies are because AI has the potential for errors in collection and management in its system, for example, in the case of Mark Walters vs ChatGPT.[65] These inaccuracies reflect that there is still unreliability in AI systems.[66] AI can introduce risks of bias in decision-making because poorly designed algorithms may mirror the biases inherent in the

[60] Kalalo and Pontoh (n 11).[8].

[61] Yew Kee Wong, *Applying AI and Big Data for Sensitive Operations and Disaster Management', Advances in Machine Learning, Data Mining and Computing* (Academy and Industry Research Collaboration Center (AIRCC) 2021).[352-353].

[62] Ekwonwune Emmanuel Nwabueze Iwuoha Obioha and Oju Onuoha, 'Enhancing Multi-Factor Authentication in Modern Computing' (2017) 6 Communications and Network.[172-173].

[63] R Selfeny and I Haryanto, 'Legal Transformation of Arbitration and Alternative Dispute Resolution: Towards Sustainability and Inclusiveness' 6 NCOLS.[132].

[64] GA Putra V Taniady and IM Halmadiningrat, 'Legal Challenges: The Accuracy of AI Chatbot Service Information and the Legal Protection of Users' 12 Rechtsvinding.[293].

[65] *ibid.* [283-293].

[66] *ibid*.

training data, potentially compromising the fairness of the arbitration process.[67] Large data sets, sometimes known as "training data", are the source of learning for the algorithms that drive AI systems. If there are any biases in this training data, the AI's decision-making process may consider such prejudices. These biases may be based on socioeconomic position, gender, race, or other elements. AI systems are only as good as the data they are trained on. If the training data include biased or unrepresentative information, the AI might learn and replicate those biases.[68] Then, technical issues are also concerned with how AI operates. Basically, AI performance is based on an algorithm, which is a set of independent operations performed by a computer that can be used for calculations, data processing, and reasoning that are then analyzed automatically.[69] In this sense, AI performance is limited by the quality and quantity of data and analysis provided by an algorithm.[70] AI is incapable of operating outside of user-given instructions. The thinking of the algorithm used by AI is only limited to what is instructed and then analyzed instantly, so it does not guarantee the quality of the analysis results. Thus, AI also has limitations in its thinking. In short, while AI can minimize bias from human arbitrators' interpretations of the law, it may introduce its own biases through potential errors in data collection.

Fourthly, interpretability and transparency present challenges because many AI systems function as "black boxes", making it hard to discern how decisions are reached. This lack of clarity is particularly problematic in arbitration, where understanding and transparency of the process are crucial for all parties involved.[71] AI systems, particularly those utilizing deep learning and neural networks, involve highly complex algorithms with many layers and parameters. These algorithms analyze large volumes of data and make decisions based on

[67] Drew Roselli, Jeanna Matthews and Nisha Talagala, *Managing Bias in AI', Companion Proceedings of The 2019 World Wide Web Conference* (ACM 2019). [539-544].

[68] PS Varsha, 'How Can We Manage Biases in Artificial Intelligence Systems – A Systematic Literature Review' (2023) 3 International Journal of Information Management Data Insights.[2-3].

[69] Marrow (n 27).[48].

[70] *ibid*.[43].

[71] *ibid*.[43].

patterns and relationships that may not be clear. Due to this complexity, it can be difficult to discern how an AI system arrived at a specific decision. The decision-making process is based on sophisticated calculations and data processing that are not readily understandable by humans.[72]

The capacity of arbitrators to conduct research and understand cases is a crucial aspect of ensuring the integrity and fairness of arbitration processes when integrating AI. Arbitrators often rely on their legal expertise, analytical skills, and experience to assess the complexities of each case. AI can serve as a valuable assistant by automating routine tasks, such as organizing case documents, identifying relevant rules, theory and doctrines. However, the information provided by AI is not immune to errors or biases. This is why AI cannot replace the knowledge, skills and analytical thinking of arbitrators.

To overcome those problems, before using AI tools on arbitration proceedings, the arbitral institutions, arbitrators and the parties should all understand how the tools work, the data they rely on, and the risks involved in their use. Understanding how AI tools operate helps ensure that they are used correctly, and their outputs are reliable. If stakeholders are familiar with the underlying algorithms and data sources, they can better assess the validity of the AI's recommendations or analyses. AI tools can be complex and opaque. By understanding their functionality and data inputs, stakeholders can foster greater transparency, which is vital for maintaining trust in the arbitration process. This transparency helps ensure that all parties are confident that the technology is being used fairly and consistently. However, AI systems can inadvertently introduce or perpetuate biases present in the training data or algorithms. Understanding these risks allows stakeholders to scrutinize AI outputs for potential biases and take steps to mitigate them, ensuring a fair arbitration process.[73]

[72] Tammy Xu, 'AI Makes Decisions We Don't Understand. That's a Problem' (*Built In*, 2021) <https://builtin.com/artificial-intelligence/ai-right-explanation> accessed 31 August 2024.

[73] Haesler (n 7).

Future Prospects for AI Integration in Indonesian Arbitration

The integration of AI technologies may be permitted by Law No. 30 of 1999's general provisions on arbitration procedures and principles, even though the law does not specifically regulate the use of AI in arbitration. This is provided that the technologies adhere to the current legal framework and do not compromise the core principles of arbitration. Some general provisions within Law No. 30 of 1999 could be interpreted as potentially accommodating the use of AI in arbitration, though they do not specifically address AI. These include:

i. Article 1(1): Defines arbitration as a method of resolving disputes outside the court system. This broad definition allows for the inclusion of various methods and technologies, potentially including AI, as long as they align with the principles of arbitration.
ii. Article 19: Outlines the procedures for the appointment and functions of arbitrators. While it does not mention AI, the use of AI tools for case management or decision support could be integrated into the arbitration process as long as it does not compromise the arbitrator's role.
iii. Article 36: Addresses the enforcement of arbitral awards. If AI is used in a manner that impacts the content or delivery of the award, this article would still apply to ensure that such awards are enforced in accordance with Indonesian law.
iv. Article 59: Provides for the arbitration agreement and the procedural rules to be followed. AI could be employed to assist in managing procedural aspects or in drafting and analyzing arbitration agreements, provided it is in line with the agreed-upon rules.

The transformative potential of AI in arbitration is immense.[74] In the next decade, significant advancements are expected, such as AI serving as co-pilots for document management and legal research, assisting legal professionals in managing documents and conducting in-depth research more effectively.[75] In-house chatbots powered by generative AI will become more reliable, providing instant legal assistance and streamlining communication within legal teams. Automating arbitration hearings through AI will become more prevalent, offering

[74] Michael Haenlein and Andreas Kaplan, 'A Brief History of Artificial Intelligence: On the Past, Present, and Future of Artificial Intelligence' (2019) 61 California Management Review.[23].

[75] Evans (n 43).[23].

real-time assistance and ensuring smooth proceedings.[76] Furthermore, automation of workflows will redefine how arbitration is conducted, making processes more efficient and reducing manual intervention.[77] The concept of AI arbitrators, although still in its infancy, could become a reality, providing unbiased and data- driven decisions in arbitration cases.[78]

Along with its rapid development, the existence of AI should be strengthened legally by making laws that specifically regulate AI. This is also the urgency of making an AI Bill, which will later become a foundation for supporting human activities. The existence of regulations relating to AI is to be a direction for the future so that AI can be used to assist humans in solving problems, one of which is to resolve disputes through arbitration. Currently, arbitration is regulated by the Arbitration Law. In the Law, there are no rules governing the implementation of AI in arbitration or it can be said that the Arbitration Law does not accommodate the implementation of AI. The electronic system provider basically organizes the implementation of AI. This means that the AI organizer has responsibility for the AI product it makes.[79] In the case of AI organizers in disseminating their AI products, they must comply with applicable laws related to AI, for example the ITE Law and PSTE Regulation.

In terms of the implementation of AI in arbitration, there need to be regulations governing AI specifically in advance to strengthen the legal basis related to AI, for instance, the protection of arbitral confidentiality and privacy. This is because the current regulations do not explicitly regulate AI in the legislation. Then, when the implementation of AI has a robust legal basis through legislation, other sectors in utilizing AI can refer to these regulations, including in terms of dispute resolution through arbitration. Arbitration Law can refer to AI foundation regulations to support the implementation of AI in arbitration.

[76] Solhchi (n 33).[73].
[77] *ibid.*
[78] *ibid.*
[79] Putra (n 64).[287].

This research advocates for parties and arbitrators to preemptively agree on the principles governing the use of AI during arbitration proceedings. Incorporating these principles, particularly regarding confidentiality, into procedural rules can enhance the transparency and legitimacy of the arbitration process. This proactive approach can also help establish necessary safeguards and prevent prolonged procedural disputes. Furthermore, it is imperative for arbitral institutions, arbitrators, and parties to thoroughly understand the functioning, data dependencies, and potential risks associated with AI tools before their utilization in arbitration. This comprehensive understanding is crucial for mitigating risks and ensuring that AI's integration into arbitration proceeds smoothly and effectively.[80]

Conclusion

This study underscores the significant potential of artificial intelligence (AI) to revolutionize arbitration processes by enhancing efficiency, accuracy, and impartiality. Despite these promising benefits, the research identifies substantial obstacles including legal, ethical, and technological challenges that must be addressed to fully integrate AI into arbitration. While the integration of AI in arbitration presents numerous opportunities, it also comes with challenges that need to be addressed. On the one hand, AI enhances the efficiency, accuracy, and fairness from document review to legal research. Automating routine tasks reduces the time and cost associated with arbitration and AI-driven insights enable more informed and strategic decision-making. On the other hand, AI tools can sometimes produce bias arising out of the arbitrators' legal interpretations, or inaccurate results, impacting the fairness of the arbitration process. Over-reliance on AI may reduce human oversight and the nuanced understanding that experienced arbitrators bring to the table. The analysis of AI adoption in Indonesian arbitration reveals a need for legal reforms to ensure that AI tools are compatible with existing legal frameworks. Additionally, increased technological literacy among legal professionals and

[80] Ammar Zafar, 'Balancing the Scale: Navigating Ethical and Practical Challenges of Artificial Intelligence (AI) Integration in Legal Practices' (2024) 4 Discover Artificial Intelligence.

the establishment of robust ethical guidelines are essential for the responsible deployment of AI in arbitration.

This paper suggests the importance of more specific and comprehensive regulations. Such regulations should encompass technological, ethical, and legal aspects to ensure AI's safe and trustworthy utilization. Proper regulation is expected to mitigate the risks of AI misuse and ensure that AI use across various sectors, including arbitration, to ensure the safe, fair, and effective integration of AI into the arbitration process. Overall, despite the significant potential for AI implementation in arbitration in Indonesia, more detailed and specific regulations are crucial to address the challenges and risks that may arise from using this technology. By doing this, Indonesia's arbitration community can effectively harness AI's transformative power to enhance the arbitration process.

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