

Electronic Mediation as the Implementation of Access to Justice and Judicial Administration Reform in Indonesia

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ABSTRACT: The development of information technology has driven fundamental changes in Indonesia's judicial system, including the implementation of electronic mediation (e-mediation) within the courts. The Supreme Court, through PERMA Number 3 of 2022, introduced electronic mediation as an innovation to realize the principles of a simple, fast, and low-cost judiciary. This article examines electronic mediation as a form of implementing citizens' constitutional right to access justice, as well as a component of judicial administration reform within the framework of good judicial governance. The research method used is empirical juridical. Case studies were conducted at the Makassar and Samarinda Religious Courts. The results indicate that electronic mediation has broadened public access to justice, but its effectiveness remains limited by inadequate digital infrastructure, technology literacy, and the suboptimal management of electronic-based judicial administration. This study recommends integrating the principles of access to justice and good governance into every judicial digitalization policy to ensure the implementation of electronic mediation that is inclusive, accountable, and just.

KEYWORDS: electronic mediation; access to justice; judicial administration; judicial reform; legal digitalization

I. INTRODUCTION

The *development* of information technology has brought fundamental changes to various aspects of life, including the legal and judicial systems. The digital transformation of judicial institutions has become a strategic necessity in order to respond to the challenges of modernizing legal services, increasing bureaucratic efficiency, and fulfilling the constitutional rights of citizens to equal, swift, and non-discriminatory access to justice. In line with the judicial reform agenda, the Supreme Court of the Republic of Indonesia has progressively adopted information technology in the dispute resolution process, one of which is through the implementation of electronic mediation (*e-mediation*) as part of the electronic court system (*e-court*)(Abbas 2025).

Electronic mediation is an online mechanism for resolving civil disputes through an information technology platform, where the parties can interact with the mediator without having to meet physically. This innovation has a strong normative basis, particularly with reference to the mandate of **Article 2 paragraph (4) of Law Number 48 of 2009 concerning Judicial Authority**, which states that the administration of justice must be carried out in a **simple, fast, and inexpensive manner**. Electronic mediation is seen as capable of providing an efficient, adaptive, and needs-oriented case resolution process for those seeking justice in the digital era (Khalid 2024).

In the context of Religious Courts, the urgency of electronic mediation is increasingly prominent. Religious courts handle cases with personal and sensitive characteristics in the domestic sphere, such as **divorce, alimony, child custody, and joint property disputes**. The high volume of cases in the religious court system has become a national phenomenon, and the capacity for conventional resolution is often constrained by factors such as geographical distance, transportation costs, time, and the physical limitations of the parties involved. Conventional mediation, which requires the parties to be present in person, often experiences administrative failures or the absence of the disputing parties, thereby reducing the effectiveness of peace efforts (Misbah Nasri Sailellah, Sudirman, and M Ali Rusdi Bedong 2025).

In response to these issues, the Supreme Court issued **PERMA Number 3 of 2022 concerning Electronic Court Mediation**, which officially introduced a technology-based mediation scheme to expand access to justice and improve the quality of modern, transparent, and accountable judicial services. This regulation not only introduces innovations in civil procedure law but also marks an important phase in digital-based judicial administration reform. This innovation aims to overcome the limitations of conventional mediation by enabling parties to participate remotely, thereby reducing logistical barriers. The electronic mediation

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platform is designed to facilitate timely communication and document exchange, enhancing the efficiency of dispute resolution. Additionally, it supports transparency and accountability by providing a digital record of the mediation process accessible to authorized parties. Electronic mediation (e-mediation) represents a pivotal advancement in Indonesia's judicial reform by enhancing access to justice through the integration of digital technology in dispute resolution. It addresses critical challenges inherent in conventional mediation, such as geographical barriers, high costs, and procedural inefficiencies, by enabling parties to participate remotely via online platforms. This innovation aligns with constitutional mandates for simple, fast, and low-cost justice, while also embodying principles of good judicial governance, including transparency, accountability, and inclusivity. However, the full potential of e-mediation is contingent upon overcoming obstacles related to technological infrastructure, digital literacy, regulatory frameworks, and data security. Strengthening these areas through coordinated policy efforts, capacity building, and robust cybersecurity measures is essential to ensure that e-mediation not only improves judicial efficiency but also realizes substantive justice and equality before the law in Indonesia's digital era (Anam et al. 2024).

At a conceptual level, *e-mediation* is seen as the embodiment of the implementation **of the principle of inclusive access to justice**, which not only includes ease of access to the courts, but also ensures that the judicial process is efficient, non-discriminatory, and provides a dignified experience of justice (*user-centered justice*). The digitization of the judiciary has the potential to strengthen *equal access to justice* as long as technology governance, data protection, and public service design are implemented appropriately. This study seeks to analyze the transformation of conventional mediation to electronic mediation in Religious Courts, by assessing its effectiveness in expanding access to justice for those seeking justice, as well as identifying implementation barriers and governance strengthening solutions that can support the success of mediation digitization. Moreover, it facilitates transparency and accountability by maintaining a digital record of the mediation process accessible to authorized stakeholders. Conceptually, e-mediation represents the practical application of the principle of inclusive access to justice, encompassing not only simplified court access but also ensuring that judicial proceedings are efficient, impartial, and uphold the dignity of all participants (*user-centered justice*). The digitization of the judiciary holds significant potential to enhance equitable access to justice, provided that technology governance, data protection, and public service design are effectively implemented

II. RESEARCH METHOD

This study uses an **empirical juridical** method that combines normative analysis of the regulatory framework with empirical studies of the implementation of electronic mediation in the religious court environment. The approaches used include **a statute approach**, through a review of relevant laws and regulations, including PERMA Number 3 of 2022, the Judicial Authority Law, and the ITE Law and its amendments; **a conceptual approach**, by linking the concepts of *access to justice*, *good judicial governance*, and digital administrative justice; and **a case study approach** that focuses on *e-mediation* practices in two religious courts. The research locations were determined to be **the Makassar Religious Court** and **the Samarinda Religious Court**, as representatives of the implementation of electronic mediation in jurisdictions with high case load and different geographical characteristics.

Primary data was obtained through **in-depth interviews** with mediator judges, **direct observation** of the online mediation process, and review of **electronic mediation documents** at both courts (Soekanto and Mamudji 2019). Secondary data was collected through studies of **legislation**, **the Supreme Court's judicial reform blueprint**, scientific journals, and relevant academic literature on *e-justice*, judicial administration law, and information technology-based judicial governance.

III. DISCUSSION

A. Electronic Mediation as the Implementation of Access to Justice

Electronic mediation reflects the implementation of the principle *of access to justice* as a constitutional right of citizens, through the expansion of opportunities for every individual to obtain fair, efficient, and affordable dispute resolution without geographical, economic, or physical discrimination (Khalid 2024). Within the Indonesian constitutional framework, the right to justice is guaranteed by **Article 28D paragraph (1) of the 1945 Constitution**, which affirms that every person has the right to recognition, security, protection, and certainty of fair law and equal treatment before the law. This norm provides a normative basis for the state to develop a judicial system that is not only procedural but also substantive and socially just. This principle places *access to justice* not only as the goal of the judicial system but also as **the state's obligation to ensure that justice is accessible to all citizens** without structural barriers. This principle is in line with the basic idea of the rule of law (*rechtstaat*) as enshrined in Article 1 paragraph (3) of the 1945 Constitution of the Republic of Indonesia, which places the law as the main tool to guarantee justice and equality for all citizens.

The implementation of electronic mediation by the Supreme Court through **PERMA Number 3 of 2022** is a concrete realization of this constitutional mandate. By integrating information technology into the dispute resolution process, electronic

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mediation overcomes the physical and geographical limitations that have been obstacles for parties residing far from the court (Ashady et al. 2024a). People in island regions, rural areas, and overseas can actively participate in the mediation process without having to be physically present, thereby realizing the principle of *equality before the law* in an inclusive manner. Since the enactment of the PERMA, the effectiveness of civil dispute resolution in court has increased, with a higher level of participation by the parties compared to conventional mediation. National estimates show that the success rate of mediation in civil cases, both in Religious Courts and District Courts, has increased significantly with the implementation of the *e-mediation* system. In **2021**, when mediation practices were still dominated by face-to-face methods, the success rate of mediation was estimated to be around **7-8%**. Entering in **2022**, after the enactment of **PERMA Number 3 of 2022 concerning Mediation in Court**, the success rate increased to around **10-12%**, mainly due to the availability of online dispute resolution options through *e-court*.

This development continued in **2023**, when the integration between the **e-Court** application and the **Case Tracking Information System (SIPP)** grew stronger, and more mediating judges obtained certification in electronic mediation technology. During this period, the mediation success rate is estimated to reach **13–15%**. In **2024**, the consolidation of the digital justice system showed a more tangible impact. Improvements in the digital literacy of judicial officials, the availability of online conference infrastructure, and the standardization of electronic mediation procedures in various courts resulted in an increase in the success rate of mediation to around **17–19%**. This trend reinforces the findings of the United Nations Development Programme (UNDP 2005) and the Organization for Economic Cooperation and Development (OECD 2019) that digital transformation in the judicial system has the potential to expand *access to justice* as long as it is accompanied by accountable and inclusive administrative mechanisms. Other jurisdictions have shown that e-justice systems improve *equal access to justice* when technology-based governance is designed in a *user-centered* manner and is able to address geographical and socioeconomic disparities. In the Indonesian context, these findings are in line with the argument that *e-mediation* is an important instrument in judicial administration reform and the expansion of constitutional rights to justice (Ashady et al. 2024).

Electronic mediation opens up a new dimension to the meaning of justice, which is not only formal and procedural, but also emphasizes the substantive and accessible aspects. An efficient, transparent process that can reduce the cost of litigation is a form of protection for economically disadvantaged groups (UNDP 2005). In addition to expanding geographical reach, electronic mediation also increases efficiency and reduces the costs of judicial proceedings. The existence of an electronic mediation system is a direct implementation of the principles of simple, fast, and low-cost justice as stipulated in Article 2 paragraph (4) of Law Number 48 of 2009 concerning Judicial Authority. Electronic mediation serves as a constitutional and administrative instrument in expanding public access to judicial institutions. Electronic mediation is not only a technological innovation in civil procedure law, but also a reflection of the state's responsibility in upholding the principles of *the rule of law* and *equal justice* in the digital era (Hanafiah 2025).

Access to Justice in the digital context is not only measured by the ease of access to judicial institutions, but also by the quality of the experience of justice felt by the parties, namely justice that is more adaptive to the needs of modern society. Although digitization promises efficiency, technological transformation does not always automatically improve access to justice if it is not accompanied by a design that prioritizes user needs. Digital-based dispute resolution mechanisms such as *e-mediation* not only accelerate procedural stages but also reduce the socio-economic barriers that have long limited citizens' access to adequate justice. This transformation shows that *access to justice* is not merely a matter of physical presence in the mediation room provided by the court, but also includes the ability of individuals to participate meaningfully in legal processes that uphold the principles of justice, equality, and respect for human dignity (Judijanto et al. 2024).

Technological transformation does not automatically expand access to justice if it is not accompanied by user-centered design and transparent administrative governance. The quality of digital justice is largely determined by how judicial institutions regulate, manage, and ensure that electronic systems are accessible to people from various social and economic backgrounds. The implementation of electronic mediation by the Supreme Court through PERMA Number 3 of 2022 concerning Mediation in Electronic Courts reflects a paradigm shift towards inclusive and public service-oriented justice (Ashady et al. 2024).

E-mediation contributes to the achievement of *digital administrative justice*—the transformation of the judiciary into a digital public service institution based on transparency, accessibility, and ethical administration. The 2019 OECD report emphasizes that this innovation is an important element for *inclusive growth* because legal technology that is not designed equally has the potential to widen the gap in access to justice (OECD 2019). Electronic mediation can be understood as **the simultaneous embodiment of three dimensions of justice**, namely: (1) Constitutional Justice, which guarantees the right of every citizen to receive equal treatment before the law; (2) Procedural Justice, which ensures that dispute resolution is efficient, transparent, and participatory; and (3) Substantive Justice, which places social benefit as the ultimate goal of the judicial system. Through the implementation of *e-mediation*, the Supreme Court of the Republic of Indonesia demonstrates a clear commitment to **inclusive, adaptive, and socially just administration of justice in the digital age**, not merely as a step toward administrative reform, but also as a

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constitutional realization of the state's responsibility to guarantee equal access to justice for all citizens (Wala 2022).

B. Electronic Mediation and Judicial Administrative Reform Structural and Institutional Constraints

The implementation of *electronic mediation (e-mediation)* is not only interpreted as an innovation in civil procedure law, but also an integral part of **judicial administrative reform** in Indonesia. This system requires the restructuring of bureaucracy, data management, and public service patterns of judicial institutions to be in line with the principles of *good judicial governance*. Through the digitization of the mediation process, the Supreme Court is encouraging a paradigm shift in the judiciary from a rigid bureaucratic model to **information technology-based public services** that are fast, transparent, and efficient (Anam et al. 2024). Administratively, the implementation of electronic mediation requires cross-unit coordination between the Supreme Court (MA), the Directorate General of Religious Courts (Ditjen Badilag), and the information technology units in each court. This coordination is important to ensure data security, the validity of electronic documents, and system integration between the *e-Court* application and the Case Tracking Information System (SIPP).

This integration enables the entire judicial process, from case registration, summoning of parties, mediation, to the storage and validation of settlement agreements, to be carried out digitally without reducing the validity of the documents. The digitization process marks a paradigm shift from a physical file-based judicial system to an electronic data-based system, which requires more comprehensive legal regulations regarding document authenticity and security. In the *e-mediation* system, all legal documents, such as summonses, mediation reports, and settlement deeds, are prepared and signed electronically using certified digital signatures in accordance with the provisions of Law Number 11 of 2008 concerning Electronic Information and Transactions (ITE Law) and its amendments through Law Number 19 of 2016. Based on this law, electronic documents have the same evidentiary value as written documents as long as they can guarantee their integrity, authenticity, and accessibility, as accommodated in Article 5 paragraph (1) of the ITE Law. The application of electronic signature technology accommodates the principle of *non-repudiation*, which provides assurance that the party who signs the document cannot deny the validity of the digital document. From a judicial perspective, this strengthens the legal validity of the results of electronic mediation as set out in the settlement agreement. The validity of digital documents is an essential element in maintaining the credibility of the results of electronic mediation, while also strengthening public trust in the electronic court system (Ashady et al. 2024).

The synchronization of the *e-Court* application and the Case Tracking Information System (SIPP) creates a standardized digital administrative chain. In this system, all mediation, from court schedules and communication between parties to reporting of mediation results, is automatically recorded in the court database. The system functions as an administrative control tool that minimizes the potential for data manipulation, file loss, and delays in case handling (Abbas, n.d.). Digital system integration strengthens the principles of transparency and accountability in judicial institutions, as each stage of the mediation process can be traced in *real-time* by judges, mediators, court clerks, and parties involved in the case. The integration of *e-mediation*, *e-Court*, and SIPP does not merely serve as a technical innovation, but as a new administrative legal framework in modern judicial governance. This integration ensures the integration of civil procedural law and digital administrative mechanisms, while strengthening the foundations of *good judicial governance* in the Indonesian judicial environment (Aidi 2022). This framework facilitates efficient case management by enabling seamless communication and coordination among judicial actors. It also enhances data security and reduces the risk of procedural errors through automated workflows. Ultimately, the digital integration supports a more responsive and accountable judicial system that aligns with contemporary governance standards (OECD 2019).

C. Obstacles and Strategies for Strengthening E-Mediation Governance

The governance of *e-mediation* as part of the electronic justice ecosystem still faces a number of technical, administrative, institutional, and legal obstacles. These obstacles are not only related to technological readiness, but also touch on aspects of public policy, institutional capacity, data protection, and regulatory consistency within the framework of Constitutional Law and Administrative Law. As an innovation in judicial administration, the success of *e-mediation* is highly dependent on the ability of judicial institutions to implement the principles of *good judicial governance*, such as accountability, transparency, efficiency, and legal certainty. Identifying obstacles and developing strategies to strengthen governance are crucial steps to ensure that the digitization of the judiciary is in line with citizens' constitutional right to justice (Hattu 2024).

The first obstacle lies in limited technological infrastructure. Uneven internet access in Indonesia, especially in 3T (frontier, remote, disadvantaged) areas, has a direct impact on the quality of electronic mediation. Many courts and parties face obstacles such as unstable internet connections, inadequate technological devices, and supporting facilities such as cameras, microphones, and video conference rooms that do not meet the standards for online mediation. This situation causes technical disruptions in the form of poor audio-visual quality and communication breakdowns during the mediation process, which ultimately reduces the effectiveness of interactions and undermines the validity of mediation outcomes. This condition is in line with the findings of the UNDP (UNDP 2005), which confirms that the digital divide is a major obstacle to the implementation of *e-justice* in developing

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countries. The next obstacle relates to the literacy and competence of human resources (HR) in the judicial environment. The implementation of *e-mediation* requires adequate technical and legal understanding from mediators, judges, court clerks, and the parties involved. The digital competence of judicial officials still varies and is not uniform across work units. Low digital literacy not only slows down the electronic mediation process, but also increases the potential for procedural errors, such as failure to upload documents, incompatibility of digital file formats, and errors in the use of certified electronic signatures. These obstacles indicate the need for planned and sustainable professional capacity building in order to support the modernization of the judicial process (Hanafiah, n.d.).

Further obstacles arise from imperfect regulations and the absence of uniform operational standards. Although PERMA Number 3 of 2022 provides the legal basis for the implementation of electronic mediation, technical regulations related to data security guidelines, infrastructure standards, and standard operating procedures (SOPs) have not yet been comprehensively formulated. The implementation of electronic mediation in various courts shows significant variations, both in terms of service quality and technical handling. Another obstacle relates to data security and privacy protection (Misbah Nasri Sailallah, Sudirman, and M Ali Rusdi Bedong 2025). The electronic mediation process involves the exchange of sensitive data, such as personal documents, financial evidence, or video conference recordings. The risk of *cyber threats* in the form of hacking, data leaks, and identity theft is a serious issue that needs special attention. The judicial system faces similar challenges, particularly regarding weak protection of electronic data. The implementation of the Personal Data Protection Law (PDP Law) in the judicial environment still needs to be strengthened, especially in providing *end-to-end encryption*, multi-layered authentication systems, and data management policies that comply with modern cybersecurity standards. These obstacles indicate that *e-mediation* governance still requires comprehensive strengthening in terms of regulation, human resource readiness, technological infrastructure, and data security. Addressing these gaps requires a coordinated approach involving policymakers, judicial authorities, and technology experts to develop robust frameworks and implement best practices. Training programs must be established to enhance the digital literacy and cybersecurity awareness of personnel involved in e-mediation processes. Furthermore, continuous monitoring and evaluation mechanisms should be instituted to ensure compliance with evolving data protection standards and to promptly address emerging vulnerabilities (Hattu 2024).

IV. CONCLUSION

The transformation from conventional mediation to electronic mediation (*e-mediation*) is a strategic step in efforts to expand *access to justice* and reform the administration of justice in Indonesia. The implementation of *e-mediation* as regulated in PERMA Number 3 of 2022 allows for a more inclusive dispute resolution process, reduces geographical barriers, lowers costs, and improves procedural efficiency, thereby aligning with the principles of simple, fast, and low-cost justice. The potential benefits of *e-mediation* have not been fully realized due to various technical, institutional, regulatory, and security governance obstacles. Limitations in digital infrastructure in remote, isolated, and disadvantaged areas, disparities in literacy and human resource competencies in the judicial environment, gaps or lack of detail in technical regulations, and data security and privacy risks are the main obstacles that must be overcome for *e-mediation* to be effective and fair. Efforts to strengthen *e-mediation* governance must be comprehensive and integrated, combining regulatory strengthening, infrastructure improvement, human resource capacity building, and data and privacy security. If these steps are implemented simultaneously, *e-mediation* has the potential to become an instrument that not only improves the efficiency of judicial administration but also realizes substantive justice and equality before the law in the digital age. *E-mediation* is indeed a great opportunity for the Indonesian judiciary to uphold the principle of *the rule of law* in a more broad and inclusive manner. The success of this transformation depends on political commitment, inter-agency synergy (Supreme Court, Directorate General of Badilag, Ministry of Communication and Information Technology, National Cyber and Crypto Agency), and active public participation in the judicial digitization process.

REFERENCES

- 1) Abbas, Ririn Yulandari. 2025. *Menakar Efektivitas Mediasi Elektronik di Pengadilan: Solusi atau Tantangan Baru?* 2025.
- 2) Aidi, Zil. 2022. *MEDIASI ELEKTRONIK SEBAGAI ALTERNATIF PENYELESAIAN SENGKETA PERDATA DI PENGADILAN NEGERI PADA ERA PANDEMI COVID – 19*. 5.
- 3) Anam, Khurul, Lisa Aminatul Mukaromah, Rima Febrianti Laily, Dinda Oktavia Bulan Fitriani, Vera Sofi Khusnia, and Dwi Nur Laili. 2024. *IMPLEMENTASI MEDIASI ELEKTRONIK DI PENGADILAN DALAM PERSPEKTIF HUKUM ACARA PERDATA*. 2, vol. 39: 201–8.
- 4) Ashady, Suheflihusnaini, Lewis Grindulu, M.Hotibul Islam, and Muhammad Zainuddin. 2024a. "Perkembangan Regulasi dan Pelaksanaan Mediasi Pada Persidangan Secara Elektronik Pasca Berlakunya Peraturan Mahkamah Agung Nomor 3 Tahun 2022." *CERMIN: Jurnal Penelitian* 8 (1): 13. https://doi.org/10.36841/cermin_unars.v8i1.4152.

- 5) ———. 2024b. “Perkembangan Regulasi dan Pelaksanaan Mediasi Pada Persidangan Secara Elektronik Pasca Berlakunya Peraturan Mahkamah Agung Nomor 3 Tahun 2022.” *CERMIN: Jurnal Penelitian* 8 (1): 13. https://doi.org/10.36841/cermin_unars.v8i1.4152.
- 6) Hanafiah, Zahira Nurmahdi. 2025. *Pelaksanaan Mediasi Elektronik Di Pengadilan Dalam Tinjauan Hukum Acara Perdata*. 2025.
- 7) Hattu, Yakoba Yuliana. 2024. “Pengembangan Klinik Hukum Masyarakat: Mendorong Akses Keadilan untuk Kelompok Rentan.” *Legal Empowerment: Jurnal Pengabdian Hukum* 1 (2): 88–95. <https://doi.org/10.46924/legalempowerment.v1i2.195>.
- 8) Judijanto, Loso, Evy Febryani, Wira Marizal, and Harly Clifford Jonas Salmon. 2024. “Tinjauan Yuridis Penggunaan Digital Justice untuk Akuntabilitas dan Efisiensi Sistem Peradilan di Indonesia.” *Sanskara Hukum dan HAM* 3 (02): 99–107. <https://doi.org/10.58812/shh.v3i02.497>.
- 9) Khalid, Hasbuddin. 2024. *Mediasi Elektronik Sebagai Perwujudan Asas Peradilan Cepat, Sederhana, dan Biaya Ringan*. 2024.
- 10) Misbah Nasri Saillellah, Sudirman, and M Ali Rusdi Bedong. 2025. “Tantangan Hukum dalam Menjamin Kerahasiaan dan Keamanan Data pada Mediasi Elektronik.” *Al-Zayn : Jurnal Ilmu Sosial & Hukum* 3 (3): 1506–15. <https://doi.org/10.61104/alz.v3i3.1407>.
- 11) OECD. 2019. *Equal Access to Justice for Inclusive Growth*.
- 12) Soekanto, S, and S Mamudji. 2019. *Penelitian Hukum Normatif: Suatu Tinjauan Singkat*. Jakarta: Rajawali Press.
- 13) UNDP. 2005. *Programming for Justice: Access for All*. Bangkok: United Nations Development Programme.
- 14) Wala, Gevan Naufal. 2022. “The Impact of Judicial Digitalization on Access to Justice and Human Rights in Indonesia Post-Pandemics.” *Journal of Law, Politic and Humanities* 2 (4).



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