

Judicial System Digitalization: The Constitutionality of the E-Court System in Southeast Asia

Zumrotu Ruzayana^{1*}, Ulfa salsabila², Robiah Nuzul Hidayah⁴, Misbahul Firsha⁵

¹ Universitas Islam Negeri Sunan Kalijaga Yogyakarta, Indonesia. E-mail: zrayana98@gmail.com

² Universitas Islam Negeri Sunan Kalijaga Yogyakarta, Indonesia. E-mail: ulfaslsbl20@gmail.com

³ Universitas Islam Negeri Sunan Kalijaga Yogyakarta, Indonesia. E-mail: robiahhidayah01@gmail.com

⁴ Al-Imam Al-Syafi'i University Hadramaut Al-Mukalla, Yemen. E-mail: misbahulfirsha@gmail.com

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Abstract: This study aims to examine the constitutionality of the e-Court system as a form of judicial system digitalization in Indonesia and Malaysia. The research employs an empirical legal method by conducting in-depth interviews with judges, court staff, lawyers, and digital service users, as well as direct observations of e-Court implementation in selected judicial institutions across both countries. The primary objective is to understand how the digital transformation of court procedures aligns with constitutional principles such as access to justice, legal certainty, due process, and transparency. The findings indicate that in Indonesia, the e-Court system is largely viewed as constitutionally valid, rooted in the Supreme Court's authority and the national commitment to judicial reform. However, issues such as uneven digital infrastructure, limited public access, and procedural challenges still persist. In Malaysia, the e-Court system is part of broader administrative reforms and has received significant institutional support, yet concerns remain regarding its compatibility with constitutional guarantees, especially in ensuring equal treatment and procedural fairness for all litigants. The study concludes that while both systems reflect progressive efforts to modernize the judiciary, their long-term legitimacy depends on how well they integrate constitutional values into digital innovations. The academic contribution of this research lies in providing an empirical and comparative perspective on how constitutional principles are interpreted and applied in the digitalization of judicial processes in Southeast Asia, thereby enriching the discourse on law and technology in developing constitutional democracies.

Keywords: E-Court, Judicial Reform, Legal Technology, Southeast Asia

1. Introduction

The development of information technology has brought fundamental changes to almost all aspects of human life, including the fields of law and justice. Digital transformation is no longer merely an option, but has become an urgent institutional necessity, particularly in countries with high caseloads and large territories such as Indonesia and Malaysia. One tangible manifestation of this transformation is the implementation of an electronic court system (e-Court), which aims to improve access to justice, expedite the resolution of cases, and enhance the transparency and accountability of judicial institutions.¹ The complex geographical and demographic conditions in both countries are the main drivers for the need for a more adaptive, efficient, and public service-oriented judicial system that is equitable and inclusive. In Indonesia, judicial reform through digitalisation began formally when the Supreme Court issued Supreme Court Regulation (PERMA) No. 3 of 2018 on Electronic Case Administration in Courts.²

This regulation was subsequently updated with PERMA No. 1 of 2019 and most recently with PERMA No. 7 of 2022, which expands the scope of e-Court services, including e-Filing (electronic case registration), e-Payment (electronic payment of case fees), e-Summons (electronic summons), and e-Litigation (electronic trials). This system is supported by electronic court applications such as SIPP (Case Tracking

¹ Juliani Paramitha Yoesuf et al., "Optimization Of E-Litigation-Based Trial Implementation As A Strategy To Prevent Bribery And Gratification (Comparatory Study Of E-Litigation Implementation In Malaysia And Singapore)," *JURNAL ILMIAH LIVING LAW* 16, no. 1 (January 2024): 36–49, <https://doi.org/10.30997/jill.v16i1.11360>.

² Amran Suadi, "Court Decision Publication and Judicial Reform Based on Electronic Court and Its Implication to Public Trust in Indonesia," *The Journal of Social Sciences Research*, no. 64 (April 2020): 365–73, <https://doi.org/10.32861/jssr.64.365.373>.

Information System) and the Supreme Court's e-Court system, which are expected to address the public's demands for a more modern and efficient judicial system.³ Meanwhile, Malaysia began implementing its e-Court system earlier, in 2009, through a pilot project known as the E-Court System Blueprint, which was run under the direction of the Malaysian Federal Court. This system has continued to be strengthened through legal frameworks such as the Rules of Court 2012, Practice Directions of the Chief Justice, and internal regulations of the Court, enabling the electronic filing of cases, document management, and court proceedings.⁴

Applications such as e-Filing, Case Management System (CMS), and Court Recording and Transcription (CRT) have become integral parts of Malaysia's judicial system. The primary objective of adopting this technology is to ensure a faster, cost-effective, and administratively streamlined judicial process. However, behind these technological advancements lies a social phenomenon that cannot be ignored. The digitisation of the judicial process has altered the patterns of interaction between legal authorities and those seeking justice.⁵ On one hand, the e-Court system enables time and cost savings, as well as reducing corruption and data manipulation. On the other hand, this system also presents new challenges, such as the digital divide in access to information technology, limited digital literacy among those seeking justice, and potential violations of the principle of due process of law.⁶

The use of online trials, for example, raises questions about the validity of evidence collection, data confidentiality, and the ability of disputing parties to fully exercise their rights. These issues raise concerns that the e-Court system could create new forms of legal exclusion if it is not designed with strong principles of justice. In this context, legal studies on the e-Court system in Indonesia and Malaysia are still relatively limited, especially those using constitutional and comparative approaches. Most existing studies still focus on technical administrative aspects or the short-term impact on the efficiency of legal processes.⁷ There have been few in-depth studies examining the constitutional basis for the implementation of the e-Court system, as well as how its implementation impacts the protection of the fundamental rights of parties involved in the judicial process, including the right to a fair hearing, the right to legal assistance, and the right to legal information. However, these principles are part of constitutional guarantees that must not be ignored in the judicial reform process.⁸

In Indonesia, guarantees of fair and open justice are enshrined in Article 24 Paragraph (1) of the 1945 Constitution, which states that judicial power is an independent power to administer justice in order to uphold the law and justice, as well as Article 28D Paragraph (1), which guarantees every person's right to recognition, guarantees, protection, and certainty of fair law.⁹ In Malaysia, the principles of fair trial and the fundamental rights of citizens are guaranteed in the Federal Constitution of Malaysia, particularly in Articles 5 to 13, which contain the rights to freedom, equal treatment, and protection from abuse of power.

³ Muhidin et al., "Digital Acceleration During Covid-19 Pandemic: How the Indonesian Constitutional Court Brings the Citizens Justice," *International Journal for Court Administration* 14, no. 2 (September 2023), <https://doi.org/10.36745/ijca.504>.

⁴ Natali Helberger, "The Rise of Technology Courts, or: How Technology Companies Re-Invent Adjudication for a Digital World," *Computer Law & Security Review* 56 (April 2025): 106118, <https://doi.org/10.1016/j.clsr.2025.106118>.

⁵ Taoufiq El Moussaoui, Chakir Loqman, and Jaouad Boumhidi, "Decoding Legal Processes: AI-Driven System to Streamline Processing of the Criminal Records in Moroccan Courts," *Intelligent Systems with Applications* 25 (March 2025): 200487, <https://doi.org/10.1016/j.iswa.2025.200487>.

⁶ Robert K. Fleck and F. Andrew Hanssen, "Courts, Legislatures, and Evolving Property Rules: Lessons from Eminent Domain," *Explorations in Economic History* 93 (July 2024): 101581, <https://doi.org/10.1016/j.eeh.2024.101581>.

⁷ Mitra Saadatian-Elahi et al., "Effectiveness of Integrated Vector Management on the Incidence of Dengue in Urban Malaysia: A Cluster-Randomised Controlled Trial," *The Lancet Infectious Diseases*, May 2025, [https://doi.org/10.1016/S1473-3099\(25\)00086-6](https://doi.org/10.1016/S1473-3099(25)00086-6).

⁸ Beliañá Annerly Herrera-Tapias et al., "Algorithmic Discrimination and Explainable Artificial Intelligence in the Judiciary: A Case Study of the Constitutional Court of Colombia," *Procedia Computer Science* 257 (2025): 1227–32, <https://doi.org/10.1016/j.procs.2025.03.164>.

⁹ Ridho Al Izzati et al., "Direct Elections and Trust in State and Political Institutions: Evidence from Indonesia's Election Reform," *European Journal of Political Economy* 85 (December 2024): 102572, <https://doi.org/10.1016/j.ejpoleco.2024.102572>.

Therefore, it is important to assess whether the e-Court systems implemented in both countries are truly in line with the existing constitutional framework.¹⁰

This study aims to critically examine the constitutionality and implementation of the e-Court systems in Indonesia and Malaysia through a comparative legal and empirical lens, focusing not only on the regulatory foundations of digital judicial reform but also on its real-world implications for the protection of constitutional rights such as access to justice, due process, and legal certainty. By integrating doctrinal analysis with field-based observations, the research highlights how digital transformation within the judiciary intersects with broader issues of institutional capacity, technological infrastructure, and socio-legal equity. The objective is to assess whether the current e-Court systems effectively balance technological advancement with constitutional commitments, particularly in diverse and unequal digital environments. In doing so, this study seeks to contribute to the theoretical and practical development of digital legal systems that are not only efficient and transparent, but also inclusive, participatory, and grounded in the principles of democratic accountability and the rule of law. The findings are expected to inform future judicial policies by offering evidence-based recommendations for improving regulatory coherence, strengthening procedural safeguards, and ensuring that digitalization enhances—not diminishes—the integrity of judicial processes.

2. Method

This study employed an empirical legal research design to examine the constitutionality and practical implementation of the e-Court system in Indonesia and Malaysia. Combining a sociological and case approach, the research sought to analyze how digital judicial transformation aligns with constitutional mandates and is operationalized in practice. The research targeted judges, court clerks, legal practitioners, court users, and IT personnel involved in the implementation of the e-Court system. Using purposive sampling, the study selected informants who had direct experience with the system, focusing on Supreme Court officials, constitutional law experts, and court staff in both countries. Research sites included the Yogyakarta District Court and Yogyakarta High Court in Indonesia, as well as the Sarawak High Court and the Kuching Court Complex in Malaysia. Data collection involved in-depth semi-structured interviews with 20 key informants, non-participant observations of daily court procedures involving the e-Court system, and a document study of relevant legal texts. The main legal sources analyzed included Indonesia's Supreme Court Regulation No. 3 of 2018 on e-Court, amendments to the Rules of Court 2012 in Malaysia, constitutional provisions from both countries, court decisions, academic legal literature, and expert commentaries on digital justice systems.

Fieldwork was conducted over a three-month period from October to December 2024. During this time, the researcher was physically present at selected court locations, observing administrative workflows, digital case filings, online hearings, and supporting infrastructure. Data collection instruments, such as interview guides and observation sheets, were developed based on existing theoretical frameworks of constitutional law and judicial reform. The data obtained were analyzed thematically, with coding based on key concepts such as procedural justice, transparency, equality before the law, and institutional adaptation. Legal and empirical data were interpreted in parallel to identify points of convergence and divergence between normative standards and field practices. To ensure the scientific accountability of the research, triangulation techniques were employed by cross-verifying data from interviews, observations, and legal documents. Source verification was also conducted through follow-up interviews and secondary data comparisons. This approach allowed for a comprehensive understanding of the extent to which the e-Court systems in Indonesia and Malaysia uphold constitutional principles while responding to the challenges of digital transformation in the judiciary.

¹⁰ Gracia, Majolica Fae Ocarina, and Ronaldo Sanjaya, "Eksistensi E-Court Untuk Mewujudkan Efisiensi Dan Efektivitas Pada Sistem Peradilan Indonesia Di Tengah Covid-19," *Jurnal Syntax Transformation* 2, no. 04 (April 2021): 496–507, <https://doi.org/10.46799/jst.v2i4.253>.

3. Result and Discussion

3.1. Implementation of the E-Court System as an Effort to Improve Accessibility and Transparency in the Judiciary

The digital transformation of judicial institutions in Indonesia and Malaysia is a response to fundamental challenges that have long been inherent in conventional judicial practices, such as limited access, high costs, lengthy case resolution times, and low transparency in legal processes.¹¹ In Indonesia, the initial milestone in judicial digitalisation was marked by the issuance of Supreme Court Regulation (PERMA) No. 3 of 2018 on Electronic Case Administration in Courts. This regulation was later updated to PERMA No. 1 of 2019 and PERMA No. 7 of 2022, expanding the scope of services from e-Filing to e-Court and e-Litigation, which include case fee payments, electronic summons, and online hearings. The implementation of e-Court aligns with the Supreme Court's roadmap towards a modern technology-based judicial system. Meanwhile, Malaysia has already adopted judicial digitalisation since the launch of the e-Court initiative by the Federal Court in 2009. This system has been strengthened through the Rules of Court 2012 and several Practice Directions issued by the Chief Justice of Malaysia.¹²

The implementation of Malaysia's e-Court includes an electronic case management system (CMS), electronic filing of lawsuits and documents (e-Filing), as well as scheduling and virtual hearings (e-Review and e-Hearing).¹³ Through this policy, Malaysia has become a pioneer in electronic court systems in Southeast Asia. This initiative is also in line with the principle of 'access to justice' within the framework of the Rule of Law adopted by the common law legal system. The implementation of e-Court has significantly reduced the physical and administrative barriers that have long prevented people from accessing justice. In Indonesia, since the introduction of e-Filing, people are no longer required to appear in person at the court office to file a case. This feature is particularly helpful for those seeking justice who live in remote areas or have limited mobility. Statistics from the Supreme Court show that between 2020 and 2023, there has been an increase of more than 1000% in the use of electronic services for case registration. In Malaysia, the e-Filing system has become a mandatory procedure for all civil cases and some criminal cases in the High Court and Court of Appeal.¹⁴ The availability of 24/7 online services provides flexibility in terms of time and efficiency in the process, particularly for lawyers and legal service users. This ease of access also contributes to faster case resolution, reduced administrative costs, and the strengthening of the principle of equality before the law.¹⁵

One of the important values of implementing the e-Court system is increased transparency and openness of legal information. In Indonesia, the integration of SIPP (Case Tracking Information System) with the Supreme Court Decision Directory allows the general public to access case status, trial schedules, and court decisions without hindrance.¹⁶ This system serves as a public oversight mechanism for court operations, preventing manipulative practices, and strengthening the accountability of judges and court officials. In Malaysia, the e-Court system provides real-time access to case developments through the official website of the Malaysian Court. Documents and decisions uploaded to the system are permanent and auditable, creating a digital trail useful for both internal and external oversight. As a result, this system

¹¹ Aaron Erlich, Nicholas Kerr, and Saewon Park, "Weaponizing Post-Election Court Challenges: Assessing Losers' Motivations," *Electoral Studies* 86 (December 2023): 102676, <https://doi.org/10.1016/j.electstud.2023.102676>.

¹² Wan Saman and Abrar Haider, "Electronic Court Records Management: A Case Study," *Journal of E-Government Studies and Best Practices*, April 2012, 1–11, <https://doi.org/10.5171/2012.925115>.

¹³ Bart Custers, "A Fair Trial in Complex Technology Cases: Why Courts and Judges Need a Basic Understanding of Complex Technologies," *Computer Law & Security Review* 52 (April 2024): 105935, <https://doi.org/10.1016/j.clsr.2024.105935>.

¹⁴ Muñoz Gielen Demetrio et al., "The Role of Jurisprudence in Public Value Capture in Urban Development: A Comparative Analysis from Dutch, English, Spanish and Colombian Courts," *Land Use Policy* 127 (April 2023): 106573, <https://doi.org/10.1016/j.landusepol.2023.106573>.

¹⁵ Ria Ambrocio Sagum et al., "Philippine Court Case Summarizer Using Latent Semantic Analysis," *Procedia Computer Science* 227 (2023): 474–81, <https://doi.org/10.1016/j.procs.2023.10.548>.

¹⁶ 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>.

reduces opportunities for corruption, strengthens judicial integrity, and builds public trust in the legal institution.¹⁷

The success of e-Court does not only depend on regulations and infrastructure, but also on the capacity of the human resources involved. In Indonesia, the Supreme Court actively conducts training for judges, court clerks, and court staff through the Research, Development, and Training Agency for Judicial Affairs (Badan Litbang Diklat Kumdil).¹⁸ Additionally, awareness campaigns are conducted for lawyers and the general public, involving professional organisations such as the Indonesian Advocates Association (PERADI) and the Indonesian Sharia Lawyers Association. Training modules cover technical use of the system, digital ethics, and data security standards.¹⁹ In Malaysia, the Judicial Academy of Malaysia collaborates with the Bar Council to organise various training sessions and seminars on the use of the CMS system and e-Filing. Training is conducted in a phased and continuous manner, both online and in person. However, the limited digital literacy of certain user groups, such as the elderly and rural communities, remains a challenge. Therefore, a community-based approach and the provision of digital help desks are essential.²⁰

The implementation of e-Court in the field still faces various obstacles. Technical obstacles include uneven internet connectivity, especially in remote, frontier, and disadvantaged (3T) areas in Indonesia. Some courts do not yet have adequate network infrastructure and hardware. These technical disruptions have resulted in delays in online court schedules and obstacles in the electronic case registration process.²¹ Additionally, social barriers such as cultural resistance to technology use, doubts about system security, and the mental unpreparedness of court officials also play a role. In Malaysia, technical challenges are more prevalent in Sharia Courts, particularly in Sabah and Sarawak, where the digitalisation process has not yet been optimised. Meanwhile, resistance from senior legal practitioners who are not yet accustomed to digital technology also hinders the acceleration of reforms.²²

The Surabaya District Court in Indonesia is one of the successful examples of e-Court implementation. With a high number of cases each year, this court has successfully implemented integrated electronic registration, e-Payment, and e-Litigation services. The key to its success lies in the synergy between court leadership, IT support, and other supporting staff. Similar success has been seen at the Jakarta Selatan Religious Court and the Bandung District Court, which have pioneered the use of online hearings.²³ Conversely, at the Biak District Court and the Tual District Court, the e-Court system has not been optimally implemented due to infrastructure limitations and technical support constraints. In Malaysia, the Kuala Lumpur Court and the Johor Bahru High Court have demonstrated high efficiency through the comprehensive use of CMS and e-Review. However, challenges still persist at district-level courts and Sharia Courts in remote areas. This case study indicates that the success of e-Court systems heavily depends on institutional readiness, human resource capacity, and equitable technological infrastructure support.²⁴ A multi-sectoral approach involving the central government, judicial institutions, technology

¹⁷ Fleck and Hanssen, "Courts, Legislatures, and Evolving Property Rules: Lessons from Eminent Domain."

¹⁸ Luca Belli, Water B. Gaspar, and Shilpa Singh Jaswant, "Data Sovereignty and Data Transfers as Fundamental Elements of Digital Transformation: Lessons from the BRICS Countries," *Computer Law & Security Review* 54 (September 2024): 106017, <https://doi.org/10.1016/j.clsr.2024.106017>.

¹⁹ Chae M. Jaynes, Jacqueline G. Lee, and Richard K. Moule, "Testing Racial and Ethnic Differences in the Correlates of Court Legitimacy," *Journal of Criminal Justice* 94 (September 2024): 102252, <https://doi.org/10.1016/j.jcrimjus.2024.102252>.

²⁰ Charlotte Omane Kwakye-Nuako et al., "An Exploration of Litigants' Interactions with Court Actors in Ghanaian Courts," *Forensic Science International: Mind and Law* 4 (December 2023): 100119, <https://doi.org/10.1016/j.fsimpl.2023.100119>.

²¹ Ekaterina Martynova and Andrey Shcherbovich, "Digital Transformation in Russia: Turning from a Service Model to Ensuring Technological Sovereignty," *Computer Law & Security Review* 55 (November 2024): 106075, <https://doi.org/10.1016/j.clsr.2024.106075>.

²² Guilherme Lambais and Henrik Sigstad, "Judicial Subversion: The Effects of Political Power on Court Outcomes," *Journal of Public Economics* 217 (January 2023): 104788, <https://doi.org/10.1016/j.jpubeco.2022.104788>.

²³ Matthieu Chemin, Paul Kimalu, and Simon Newman-Bachand, "Courts, Crime and Economic Performance: Evidence from a Judicial Reform in Kenya," *Journal of Public Economics* 231 (March 2024): 105035, <https://doi.org/10.1016/j.jpubeco.2023.105035>.

²⁴ Bradley P. Lindsey, Sophie McDonnell, and William J. Moser, "Do United States Tax Court Judge Attributes Influence the Resolution of Corporate Tax Disputes?," *Journal of Accounting and Public Policy* 42, no. 6 (November 2023): 107156, <https://doi.org/10.1016/j.jaccpubpol.2023.107156>.

providers, and civil society organisations is necessary to ensure that judicial digitalisation proceeds in an inclusive and equitable manner.²⁵

3.2. The E-Court System in Maintaining Constitutional Principles and Protecting Litigation Rights

Evaluating the protection of equal rights to justice in the use of the e-Court system is a fundamental aspect of ensuring that the digitization of the judiciary is not merely an administrative transformation, but also a means of realizing the principle of non-discrimination in access to justice. In Indonesia, data from the Supreme Court shows that since the launch of the e-Court system in 2018, there has been a significant increase in the use of digital services, with more than 700,000 cases registered online by the end of 2024.²⁶ The sharpest increase occurred during the COVID-19 pandemic, which indirectly forced the judicial system to adapt to technology to ensure the continuity of legal processes.²⁷ However, this quantitative success does not fully reflect the success in terms of quality of access. A study by the Institute for Judicial Independence (LeIP) revealed that vulnerable groups such as low-income communities, the elderly, and people with disabilities still face serious obstacles in utilizing e-Court services. These obstacles include limited access to digital devices, uneven internet infrastructure, and low digital literacy among these communities. Similar issues have also been observed in Malaysia. According to the 2023 Annual Report of the Federal Court, approximately 85% of cases in urban areas have been processed through the e-Justice system, but courts in eastern regions such as Sabah and Sarawak remain behind due to limitations in digital infrastructure, including a shortage of trained IT personnel and unstable internet networks. Both countries, with different legal systems but based on similar constitutional principles, face relatively similar challenges in ensuring that the digital justice system truly reaches all segments of society.²⁸ Protecting the right to equal justice within the e-Court framework is not sufficient merely by providing technological access; it also requires affirmative policies, digital literacy training, and the provision of special support facilities for vulnerable groups. Without these measures, the e-Court system risks widening the legal access gap and threatening the principle of substantive justice guaranteed by the constitution.²⁹

Privacy protection and data security in digital judicial systems have become increasingly relevant, especially with the growing use of e-Court platforms. In Indonesia, Law No. 27 of 2022 on Personal Data Protection provides a general legal foundation for safeguarding litigants' data. However, the absence of technical guidelines from the Supreme Court regarding data encryption, breach notification, and secure data storage renders the e-Court system vulnerable to misuse and cyber threats. Sensitive legal documents transmitted electronically risk exposure without adequate safeguards.³⁰ In comparison, Malaysia's PDPA 2010 more clearly mandates data controllers to implement protective measures within the e-Kehakiman system, including encryption and access controls. Despite this, a 2023 report by the Malaysian Bar Council highlighted gaps in enforcement and lack of training among court staff. Both countries thus face similar challenges: strong normative frameworks exist, but practical implementation

²⁵ Gracious Kesuma Prinstama Perangin Angin, Nurlaily, and Triana Dewi Seroja, "Justice Modernization in the Digital Divide of Indonesian Society: A Challenge," *Awang Long Law Review* 6, no. 1 (November 29, 2023): 206–15, <https://doi.org/10.56301/awl.v6i1.1009>.

²⁶ Firdaus Firdaus et al., "Modernization of Religious Courts: An Analysis of the Effectiveness of Mediation Through E-Court in Resolving Divorce Cases in Padang," *Al-Qadha : Jurnal Hukum Islam Dan Perundang-Undangan* 11, no. 2 (November 2024): 251–70, <https://doi.org/10.32505/qadha.v11i2.9650>.

²⁷ Dian Latifiani et al., "The Revitalizing Indonesia's Religious Courts System: The Modernization Impacts and Potentials of E-Court," *Jurnal Hukum* 40, no. 1 (June 2024): 1, <https://doi.org/10.26532/jh.v40i1.32279>.

²⁸ Giovanni De Gregorio, "Democratising Online Content Moderation: A Constitutional Framework," *Computer Law & Security Review* 36 (April 2020): 105374, <https://doi.org/10.1016/j.clsr.2019.105374>.

²⁹ Tristan Casey and Elisabeth Wilson-Evered, "Predicting Uptake of Technology Innovations in Online Family Dispute Resolution Services: An Application and Extension of the UTAUT," *Computers in Human Behavior* 28, no. 6 (November 2012): 2034–45, <https://doi.org/10.1016/j.chb.2012.05.022>.

³⁰ Xavier Tracol, "Legislative Genesis and Judicial Death of a Directive: The European Court of Justice Invalidated the Data Retention Directive (2006/24/EC) Thereby Creating a Sustained Period of Legal Uncertainty about the Validity of National Laws Which Enacted It," *Computer Law & Security Review* 30, no. 6 (December 2014): 736–46, <https://doi.org/10.1016/j.clsr.2014.09.008>.

and institutional capacity remain limited. Strengthening privacy protocols and ensuring judicial actors understand their responsibilities are key to upholding trust and fairness in digital legal processes.³¹

The e-Court system must uphold the principles of due process of law and legal certainty to ensure fair and equitable legal proceedings. These principles encompass the right to timely and proper case notifications, equal opportunity for defense, and procedural clarity.³² In Indonesia, Supreme Court Regulation (Perma) No. 1 of 2019 has laid the groundwork for electronic litigation, but its implementation remains uneven. Many district courts, particularly outside Java, still struggle with unstable internet connections, limited IT infrastructure, and insufficient technical support. This inconsistency can hamper the rights of parties, especially in time-sensitive cases.³³ In Malaysia, the e-Justice system includes features such as automated email notifications and centralized case management tools. However, a 2023 study from the University of Malaya found ongoing complaints from legal practitioners regarding technical glitches especially delays in document uploads and misalignment with hearing schedules. Such issues pose a risk to the right of defense and undermine confidence in the digital legal process. Both countries highlight the need for standardized technical protocols and continued capacity-building to ensure that digital systems do not compromise fundamental legal guarantees.³⁴

The existence of effective oversight and remedial mechanisms is vital for ensuring the accountability, responsiveness, and integrity of the e-Court system. In Indonesia, supervisory authority is held by the Supreme Court's Supervisory Agency (Badan Pengawasan MA), which is responsible for handling complaints and monitoring judicial performance. However, the system still lacks a fully integrated online reporting mechanism. Most public grievances must be submitted manually, through physical letters or in-person visits, which reduces accessibility and delays resolution.³⁵ This gap diminishes public trust in the digital justice process. In contrast, Malaysia has made more advanced strides with the e-Kehakiman portal, which features an online feedback and complaint submission system. Users can directly report technical issues, administrative problems, or procedural inconsistencies. Nevertheless, a 2022 audit report from the Malaysian Bar noted that many complaints were not followed up promptly, raising concerns about the system's responsiveness and the enforcement of corrective actions. For both countries, enhancing the effectiveness of these oversight tools through real-time reporting, transparent follow-up tracking, and independent evaluations is crucial to protect litigants' rights and reinforce institutional legitimacy in the digital era.³⁶

The potential for discrimination and injustice arising from technological barriers remains a persistent structural challenge in the implementation of digital judicial systems. Despite advancements in e-Court initiatives, significant gaps in digital access and literacy continue to marginalize certain communities. The 2023 Legal Accessibility Index Survey by LIPI revealed that approximately 42% of respondents in rural Indonesia were unfamiliar with the use of the e-Court platform, underscoring a clear digital divide between urban and rural populations. This gap not only limits participation in legal processes but also undermines

³¹ Andreas Rahmatian, "Comparative Law in a Global Context. The Legal Systems of Africa and Asia by Werner Menski [2nd Edn, Cambridge University Press, Cambridge, 2006, Xx+674 Pp, ISBN 0-521-85859-3, £85 (h/Bk); ISBN 0-521-67529-4, £43 (p/Bk)]," *International and Comparative Law Quarterly* 57, no. 2 (April 2008): 475–76, <https://doi.org/10.1017/S0020589308000286>.

³² Xavier Tracol, "The Two Judgments of the European Court of Justice in the Four Cases of Privacy International, La Quadrature Du Net and Others, French Data Network and Others and Ordre Des Barreaux Francophones et Germanophone and Others: The Grand Chamber Is Trying Hard," *Computer Law & Security Review* 41 (July 2021): 105540, <https://doi.org/10.1016/j.clsr.2021.105540>.

³³ Zulfia Hanum Alfi Syahr, Novian Uticha Sally, and Muhamad Zaky Albana, "The Bailiff's Services in the Electronic Judicial Era in Indonesia," *Transforming Government: People, Process and Policy* 17, no. 3 (October 2023): 317–27, <https://doi.org/10.1108/TG-01-2023-0014>.

³⁴ Eti Yusnita, Yuswalina, and Muhammad Toriq, "Embracing E-Court Innovation: Advancing Maslahah Mursalah in Indonesia's Religious Courts," *Nurani: Jurnal Kajian Syari'ah Dan Masyarakat* 24, no. 2 (December 29, 2024): 506–23, <https://doi.org/10.19109/nurani.v24i2.24744>.

³⁵ Mario Procopiuck, "Information Technology and Time of Judgment in Specialized Courts: What Is the Impact of Changing from Physical to Electronic Processing?," *Government Information Quarterly* 35, no. 3 (September 2018): 491–501, <https://doi.org/10.1016/j.giq.2018.03.005>.

³⁶ El Moussaoui, Loqman, and Boumhidi, "Decoding Legal Processes: AI-Driven System to Streamline Processing of the Criminal Records in Moroccan Courts."

the principle of equal access to justice.³⁷ Similarly, Malaysia faces comparable challenges. The Digital Inclusion Survey conducted by the Malaysian Communications and Multimedia Commission reported that 26% of residents in regions outside Peninsular Malaysia, such as Sabah and Sarawak, still lack reliable internet connectivity. These limitations restrict their ability to engage effectively with the e-Judiciary system.³⁸ Without targeted policy interventions such as expanding digital infrastructure, improving legal tech education, and providing alternative access models such disparities will continue to perpetuate inequality within the justice system, contradicting the foundational goal of inclusive legal reform.³⁹

A comparison of constitutional norms between Indonesia and Malaysia shows similarities in guaranteeing constitutional rights to a fair legal process. Article 28D paragraph (1) of the 1945 Constitution states that every person has the right to recognition, guarantees, protection, and certainty of fair law.⁴⁰ Meanwhile, the Federal Constitution of Malaysia in Article 5 (1) guarantees the right of every person to personal freedom,⁴¹ which cannot be taken away except according to the law. These two norms form the normative basis for the implementation of the e-Court system, but there are no derivative regulations that explicitly regulate constitutional standards in digital processes. Therefore, there is a need for the development of progressive regulations and legal interpretations to ensure that every step of judicial digitization remains grounded in the principles of the rule of law, substantive justice, and the protection of human rights.

4. Conclusion

The digital transformation of judicial systems, as evidenced through the comparative analysis of Indonesia and Malaysia, illustrates both the promises and perils of legal digitalization in the context of constitutional governance. This study reveals that the implementation of the e-Court system has tangibly improved administrative efficiency, judicial transparency, and public accessibility, particularly in metropolitan areas where infrastructural capacity and digital familiarity are relatively advanced. However, this modernization also reveals asymmetries in terms of infrastructural readiness, legal safeguards, and digital literacy, which threaten to reproduce or even exacerbate existing socio-legal inequalities. In Indonesia, the e-Court initiative benefits from relatively robust normative frameworks and institutional alignment with constitutional principles such as access to justice and due process, yet disparities in rural connectivity and procedural consistency remain unresolved. In contrast, Malaysia's trajectory—while technologically progressive and aligned with broader e-Government strategies—exhibits ongoing challenges in embedding procedural fairness, particularly with regard to the rights of marginalized litigants and the safeguarding of constitutional guarantees in digital adjudication. Both systems face critical tests in ensuring the resilience of core constitutional values such as legal certainty, non-discrimination, and the right to be heard in an era where technological innovation is increasingly driven by algorithmic logic and data infrastructures. As such, digitalization in the judiciary cannot be evaluated solely on metrics of operational success or service delivery speed, but must also be judged on the extent to which it upholds normative legal principles and responds to the contextual realities of diverse user groups. The findings of this study underscore the need for sustained institutional reflexivity, regulatory agility, and participatory legal design in crafting digital court systems that are not only technologically advanced but also constitutionally grounded and socially inclusive.

This research provides a normative and forward-looking framework for evaluating digital judicial reforms in Southeast Asia and beyond. As artificial intelligence, blockchain, and predictive analytics begin to

³⁷ Herrera-Tapias et al., "Algorithmic Discrimination and Explainable Artificial Intelligence in the Judiciary: A Case Study of the Constitutional Court of Colombia."

³⁸ Straton Papagianneas, "Automating Intervention in Chinese Justice: Smart Courts and Supervision Reform," *SSRN Electronic Journal*, 2023, <https://doi.org/10.2139/ssrn.4383929>.

³⁹ Jaynes, Lee, and Moule, "Testing Racial and Ethnic Differences in the Correlates of Court Legitimacy."

⁴⁰ Angin, Nurlaily, and Seroja, "Justice Modernization in the Digital Divide of Indonesian Society: A Challenge."

⁴¹ Wahyu Widodo, Toebagus Galang, and Sapto Budoyo, "The Effectiveness of the E-Court Management System in Semarang Courts in Semarang City," *INFORMATION MANAGEMENT AND COMPUTER SCIENCE* 4, no. 1 (January 2, 2021): 26–30, <https://doi.org/10.26480/imcs.01.2021.26.30>.

reshape the contours of legal reasoning and court administration, there is a pressing need for governance models that combine technological innovation with democratic legitimacy and rights-based oversight. This study demonstrates that sustainable digital transformation in the judiciary cannot be achieved merely through infrastructure upgrades or procedural automation; it requires a continuous process of legal adaptation, stakeholder consultation, and empirical validation to ensure that new systems do not unintentionally compromise the very values they intend to enhance. In particular, the research highlights the significance of embedding constitutional review mechanisms within digital system development, strengthening data protection standards—especially in sensitive domains like family and sharia law—and addressing structural impediments such as digital illiteracy and rural marginalization. Moreover, the comparative findings call for an expanded research agenda that includes longitudinal and multi-level analysis of court performance, user experience, and the systemic effects of digital adjudication on judicial behavior and public trust. Future judicial reforms must not only seek to optimize court efficiency but also fortify institutional legitimacy by anchoring technological advancement within a constitutional and human rights framework. Ultimately, the e-Court system should be viewed not merely as a tool of administrative modernization, but as a transformative legal infrastructure whose success depends on its capacity to reinforce democratic accountability, protect procedural fairness, and promote equitable access to justice in an increasingly digital and interconnected legal landscape.

Declarations

Author Contributions Statement

Zumrotu Ruzayana acted as the lead author and corresponding author, leading the research design, data analysis, and manuscript writing. Ulfa Salsabila, Syarifah Salimah Nailulmuna, Robiah Nuzul Hidayah, and Misbahul Firsha contributed to data collection and analysis and assisted in literature review and research material preparation.

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The datasets generated and analyzed during this study are available from the corresponding author upon reasonable request.

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The authors declare that they have no known financial or personal conflicts of interest that could have influenced the work reported in this paper.

Additional Information

Correspondence and requests for materials should be addressed to zrayana98@gmail.com

ORCID

Zumrotu Ruzayana  <https://orcid.org/0009-0008-2529-9519>

Ulfa Salsabila  <https://orcid.org/0009-0001-9481-4114>

Robiah Nuzul Hidayah  <https://orcid.org/0009-0004-3565-9494>

Misbahul Firsha  <https://orcid.org/0009-0002-9211-7494>

References

- Angin, Gracious Kesuma Prinstama Perangin, Nurlaily, and Triana Dewi Seroja. "Justice Modernization in the Digital Divide of Indonesian Society: A Challenge." *Awang Long Law Review* 6, no. 1 (November 29, 2023): 206–15. <https://doi.org/10.56301/awl.v6i1.1009>.
- Belli, Luca, Water B. Gaspar, and Shilpa Singh Jaswant. "Data Sovereignty and Data Transfers as

- Fundamental Elements of Digital Transformation: Lessons from the BRICS Countries." *Computer Law & Security Review* 54 (September 2024): 106017. <https://doi.org/10.1016/j.clsr.2024.106017>.
- Casey, Tristan, and Elisabeth Wilson-Evered. "Predicting Uptake of Technology Innovations in Online Family Dispute Resolution Services: An Application and Extension of the UTAUT." *Computers in Human Behavior* 28, no. 6 (November 2012): 2034–45. <https://doi.org/10.1016/j.chb.2012.05.022>.
- Chemin, Matthieu, Paul Kimalu, and Simon Newman-Bachand. "Courts, Crime and Economic Performance: Evidence from a Judicial Reform in Kenya." *Journal of Public Economics* 231 (March 2024): 105035. <https://doi.org/10.1016/j.jpubeco.2023.105035>.
- Custers, Bart. "A Fair Trial in Complex Technology Cases: Why Courts and Judges Need a Basic Understanding of Complex Technologies." *Computer Law & Security Review* 52 (April 2024): 105935. <https://doi.org/10.1016/j.clsr.2024.105935>.
- Demetrio, Muñoz Gielen, Blanc Clavero Francisco, James Corbet Burcher, and Pinilla Juan Felipe. "The Role of Jurisprudence in Public Value Capture in Urban Development: A Comparative Analysis from Dutch, English, Spanish and Colombian Courts." *Land Use Policy* 127 (April 2023): 106573. <https://doi.org/10.1016/j.landusepol.2023.106573>.
- Erich, Aaron, Nicholas Kerr, and Saewon Park. "Weaponizing Post-Election Court Challenges: Assessing Losers' Motivations." *Electoral Studies* 86 (December 2023): 102676. <https://doi.org/10.1016/j.electstud.2023.102676>.
- Firdaus, Firdaus, Titi Martini Harahap, Rika Sasralina, Syamsurizal, and Teddy Rahmat Zhuliansyah. "Modernization of Religious Courts: An Analysis of the Effectiveness of Mediation Through E-Court in Resolving Divorce Cases in Padang." *Al-Qadha : Jurnal Hukum Islam Dan Perundang-Undangan* 11, no. 2 (November 2024): 251–70. <https://doi.org/10.32505/qadha.v11i2.9650>.
- Fleck, Robert K., and F. Andrew Hanssen. "Courts, Legislatures, and Evolving Property Rules: Lessons from Eminent Domain." *Explorations in Economic History* 93 (July 2024): 101581. <https://doi.org/10.1016/j.eeh.2024.101581>.
- Gracia, Majolica Fae Ocarina, and Ronaldo Sanjaya. "Eksistensi E-Court Untuk Mewujudkan Efisiensi Dan Efektivitas Pada Sistem Peradilan Indonesia Di Tengah Covid-19." *Jurnal Syntax Transformation* 2, no. 04 (April 2021): 496–507. <https://doi.org/10.46799/jst.v2i4.253>.
- Gregorio, Giovanni De. "Democratising Online Content Moderation: A Constitutional Framework." *Computer Law & Security Review* 36 (April 2020): 105374. <https://doi.org/10.1016/j.clsr.2019.105374>.
- Helberger, Natali. "The Rise of Technology Courts, or: How Technology Companies Re-Invent Adjudication for a Digital World." *Computer Law & Security Review* 56 (April 2025): 106118. <https://doi.org/10.1016/j.clsr.2025.106118>.
- Herrera-Tapias, Belifia Annery, Diego Hernández Guzmán, Neuro Jose Zambam, Luciana Turatti, Ferney Asdrúbal Rodríguez, Sandro Fröhlich, Marcio Ricardo Staffen, et al. "Algorithmic Discrimination and Explainable Artificial Intelligence in the Judiciary: A Case Study of the Constitutional Court of Colombia." *Procedia Computer Science* 257 (2025): 1227–32. <https://doi.org/10.1016/j.procs.2025.03.164>.
- Izzati, Ridho Al, Teguh Dartanto, Daniel Suryadarma, and Asep Suryahadi. "Direct Elections and Trust in State and Political Institutions: Evidence from Indonesia's Election Reform." *European Journal of Political Economy* 85 (December 2024): 102572. <https://doi.org/10.1016/j.ejpoleco.2024.102572>.
- Jaynes, Chae M., Jacqueline G. Lee, and Richard K. Moule. "Testing Racial and Ethnic Differences in the Correlates of Court Legitimacy." *Journal of Criminal Justice* 94 (September 2024): 102252. <https://doi.org/10.1016/j.jcrimjus.2024.102252>.
- Kwakye-Nuako, Charlotte Omane, Feikoab Parimah, Makafui Jonas Davour, Kenneth Owusu Ansah, Abigail Adade, Prince Adih, and Audrey Nyameye Ross. "An Exploration of Litigants' Interactions with Court Actors in Ghanaian Courts." *Forensic Science International: Mind and Law* 4 (December 2023): 100119. <https://doi.org/10.1016/j.fsimpl.2023.100119>.
- Lambais, Guilherme, and Henrik Sigstad. "Judicial Subversion: The Effects of Political Power on Court

- Outcomes." *Journal of Public Economics* 217 (January 2023): 104788. <https://doi.org/10.1016/j.jpubeco.2022.104788>.
- Latifiani, Dian, Nur Arif Nugraha, Anis Widyawati, Akhmad Khalimy, Muhammad Iqbal Baiquni, Asmarani Ramli, and Pratama Herry Herlambang. "The Revitalizing Indonesia's Religious Courts System: The Modernization Impacts and Potentials of E-Court." *Jurnal Hukum* 40, no. 1 (June 2024): 1. <https://doi.org/10.26532/jh.v40i1.32279>.
- Lindsey, Bradley P., Sophie McDonnell, and William J. Moser. "Do United States Tax Court Judge Attributes Influence the Resolution of Corporate Tax Disputes?" *Journal of Accounting and Public Policy* 42, no. 6 (November 2023): 107156. <https://doi.org/10.1016/j.jaccpubpol.2023.107156>.
- Martynova, Ekaterina, and Andrey Shcherbovich. "Digital Transformation in Russia: Turning from a Service Model to Ensuring Technological Sovereignty." *Computer Law & Security Review* 55 (November 2024): 106075. <https://doi.org/10.1016/j.clsr.2024.106075>.
- Moussaoui, Taoufiq El, Chakir Loqman, and Jaouad Boumhidi. "Decoding Legal Processes: AI-Driven System to Streamline Processing of the Criminal Records in Moroccan Courts." *Intelligent Systems with Applications* 25 (March 2025): 200487. <https://doi.org/10.1016/j.iswa.2025.200487>.
- Muhidin, Eman Suparman, Indra Perwira, and M. Guntur Hamzah. "Digital Acceleration During Covid-19 Pandemic: How the Indonesian Constitutional Court Brings the Citizens Justice." *International Journal for Court Administration* 14, no. 2 (September 2023). <https://doi.org/10.36745/ijca.504>.
- 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>.
- Papagianneas, Straton. "Automating Intervention in Chinese Justice: Smart Courts and Supervision Reform." *SSRN Electronic Journal*, 2023. <https://doi.org/10.2139/ssrn.4383929>.
- Procopiuck, Mario. "Information Technology and Time of Judgment in Specialized Courts: What Is the Impact of Changing from Physical to Electronic Processing?" *Government Information Quarterly* 35, no. 3 (September 2018): 491–501. <https://doi.org/10.1016/j.giq.2018.03.005>.
- Rahmatian, Andreas. "Comparative Law in a Global Context. The Legal Systems of Africa and Asia by Werner Menski [2nd Edn, Cambridge University Press, Cambridge, 2006, Xx+674 Pp, ISBN 0-521-85859-3, £85 (h/Bk); ISBN 0-521-67529-4, £43 (p/Bk)]." *International and Comparative Law Quarterly* 57, no. 2 (April 2008): 475–76. <https://doi.org/10.1017/S0020589308000286>.
- Saadatian-Elahi, Mitra, Muriel Rabilloud, Tim W R Möhlmann, Carole Langlois-Jacques, Farah Diana Ariffin, Marit Farenhorst, Mad-Hélénie Elsensohn, et al. "Effectiveness of Integrated Vector Management on the Incidence of Dengue in Urban Malaysia: A Cluster-Randomised Controlled Trial." *The Lancet Infectious Diseases*, May 2025. [https://doi.org/10.1016/S1473-3099\(25\)00086-6](https://doi.org/10.1016/S1473-3099(25)00086-6).
- Sagum, Ria Ambrocio, Patrick Anndwin C. Clacio, Rey Edison R. Cayetano, and Airis Dale F. Lobrio. "Philippine Court Case Summarizer Using Latent Semantic Analysis." *Procedia Computer Science* 227 (2023): 474–81. <https://doi.org/10.1016/j.procs.2023.10.548>.
- Saman, Wan, and Abrar Haider. "Electronic Court Records Management: A Case Study." *Journal of E-Government Studies and Best Practices*, April 2012, 1–11. <https://doi.org/10.5171/2012.925115>.
- Suadi, Amran. "Court Decision Publication and Judicial Reform Based on Electronic Court and Its Implication to Public Trust in Indonesia." *The Journal of Social Sciences Research*, no. 64 (April 2020): 365–73. <https://doi.org/10.32861/jssr.64.365.373>.
- Syahr, Zulfia Hanum Alfi, Novian Uticha Sally, and Muhamad Zaky Albana. "The Bailiff's Services in the Electronic Judicial Era in Indonesia." *Transforming Government: People, Process and Policy* 17, no. 3 (October 2023): 317–27. <https://doi.org/10.1108/TG-01-2023-0014>.
- Tracol, Xavier. "Legislative Genesis and Judicial Death of a Directive: The European Court of Justice Invalidated the Data Retention Directive (2006/24/EC) Thereby Creating a Sustained Period of Legal Uncertainty about the Validity of National Laws Which Enacted It." *Computer Law & Security Review* 30, no. 6 (December 2014): 736–46. <https://doi.org/10.1016/j.clsr.2014.09.008>.
- . "The Two Judgments of the European Court of Justice in the Four Cases of Privacy International, La Quadrature Du Net and Others, French Data Network and Others and Ordre Des Barreaux

- Francophones et Germanophone and Others: The Grand Chamber Is Trying Hard." *Computer Law & Security Review* 41 (July 2021): 105540. <https://doi.org/10.1016/j.clsr.2021.105540>.
- Widodo, Wahyu, Toebagus Galang, and Sapto Budoyo. "The Effectiveness of the E-Court Management System in Semarang Courts in Semarang City." *INFORMATION MANAGEMENT AND COMPUTER SCIENCE* 4, no. 1 (January 2, 2021): 26–30. <https://doi.org/10.26480/imcs.01.2021.26.30>.
- Yoesuf, Juliani Paramitha, Mulyono, Siti Nur Intihani, Efridani Lubis, Muhammad Fahrudin, and Sinta Elviyanti. "Optimization Of E-Litigation-Based Trial Implementation As A Strategy To Prevent Bribery And Gratification (Comparatory Study Of E-Litigation Implementation In Malaysia And Singapore)." *JURNAL ILMIAH LIVING LAW* 16, no. 1 (January 2024): 36–49. <https://doi.org/10.30997/jill.v16i1.11360>.
- Yusnita, Eti, Yuswalina, and Muhammad Toriq. "Embracing E-Court Innovation: Advancing Masalah Mursalah in Indonesia's Religious Courts." *Nurani: Jurnal Kajian Syari'ah Dan Masyarakat* 24, no. 2 (December 29, 2024): 506–23. <https://doi.org/10.19109/nurani.v24i2.24744>.