priviet lab.
RESEARCH & PUBLISHING

Priviet Social Sciences Journal

Volume 6
Issue 3 March, 2026

Article 8

09-03-2026

Implementation of electronic certificates and online land registration systems in realizing efficient land services

Wirda Ningsih Octavia

To cite this article: Octavia, W. N. (2026). Implementation of electronic certificates and online land registration systems in realizing efficient land services. *Priviet Social Sciences Journal, 6*(3), 82-90. https://doi.org/10.55942/pssj.v6i3.1625

To link to this article: https://doi.org/10.55942/pssj.v6i3.1625

Private Social Sciences Journal
E-ISSN 2798-866X
P-ISSN 2798-6314
https://doi.org/10.55942/pssj.v6i3.1625

Volume 6
Issue 3
March Edition 2026

Implementation of electronic certificates and online land registration systems in realizing efficient land services

Wirda Ningsih Octavia

Doctoral Study Program in Law, Faculty of Law, University of Lampung, Jl. Prof. Dr. Ir. Sumantri Brojonegoro, Gedong Meneng, Kec. Rajabasa, Kota Bandar Lampung, Lampung 35141, Indonesia
*e-mail: wirdaningsih872@gmail.com

Received 28 December 2025
Revised 19 February 2026
Accepted 05 March 2026

ABSTRACT

The digital transformation in Indonesia's land system marks a significant paradigm shift from manual systems to integrated electronic systems. This study examines the implementation of electronic certificates and online land registration systems in the context of sale and purchase deeds made by Land Deed Making Officials (PPAT). The main issues studied include: (1) how Indonesia's positive legal framework regulates the digital transformation of land sale and purchase deeds and electronic certificates; (2) legal challenges and obstacles in the implementation of land electronic systems, including aspects of legal certainty, data security, and protection of community rights; and (3) the ideal model for the implementation of digital transformation that can realize efficient land services without sacrificing legal certainty. The research uses a normative juridical method with a statute, case, and theoretical approach. The results of the study show that Indonesia's legal framework has accommodated digital transformation through the ITE Law, PP 24/1997 jo. PP 18/2021 on Land Registration, and other related regulations. However, implementation faces challenges in the form of gaps in technological infrastructure, human resource readiness, system standardization, and regulatory harmonization. The recommended ideal model is phased implementation with strengthened cybersecurity aspects, integrated digital validation, a reliable backup system, and comprehensive legal protection for the parties. Digital transformation must guarantee the principles of publicity, legal certainty, and the protection of human rights in land ownership.

Keywords: digital transformation; electronic certificates; legal certainty; land sale and purchase deed; online land registration; PPAT

1. INTRODUCTION

The development of information and communication technology has brought fundamental changes to various aspects of people's lives, including the land administration system in Indonesia. Digital transformation in the land sector is an inevitable necessity, along with the demands for efficiency, transparency, and accountability of public services. The land system, which has been based on manuals with physical documents, has begun to transform into an integrated electronic system, including in terms of making land sale and purchase deeds and issuing land rights certificates. The Land Deed Making Officer (PPAT), as a public official who is authorized to make authentic deeds regarding certain legal acts regarding land rights or ownership rights to flats, has a strategic role in this digital transformation. The sale and purchase deed made by the PPAT is a crucial document that is the basis for the transfer of land rights. In the digital era, the process of making deeds and registering the transfer of rights has undergone significant changes with the introduction of electronic systems that aim to speed up and simplify the land transaction process.

The Government of Indonesia, through the Ministry of Agrarian Affairs and Spatial Planning/National Land Agency (ATR/BPN), has developed various electronic systems to support land services, including the Land Office Computerization System (SKKP), Land Office Computerization (KKP), and the latest, the National Land Information and Management System (SIMTANAS). These systems are designed to integrate the entire land service process from application, processing, to the issuance of land rights certificates electronically. The implementation of electronic certificates and online land registration systems carries complex legal implications (Mustofa, 2020, p. 158). The process that originally took weeks or even months can be trimmed down to a matter of days. The costs that must be incurred by the community can also be more transparent and measurable. The costs that must be incurred by the community can also be more transparent and measurable. On the other hand, various legal issues arise related to the power of proof of electronic documents, data security, privacy protection, potential cybercrime, and legal certainty for land rights holders.

The legal framework governing digital transformation in land systems is not yet fully comprehensive. Although there has been Law Number 11 of 2008 jo. Law Number 19 of 2016 concerning Information and Electronic Transactions (ITE Law), Government Regulation Number 24 of 1997 concerning Land Registration, which has been amended by Government Regulation Number 18 of 2021, as well as various other technical regulations, harmonization between regulations and implementation in the field still faces various obstacles. An in-depth study is needed to ensure that digital transformation does not reduce legal certainty and the protection of people's land rights. This research is important considering that land has a very strategic function in the lives of the Indonesian people, both from economic, social, and cultural aspects. Land is not only an economic asset but also concerns the livelihood of the people and the sovereignty of the country. Therefore, any changes in the land administration system must be carefully studied from a legal perspective to ensure the maintenance of legal certainty, justice, and the protection of human rights, especially land rights, as guaranteed in the constitution. Based on the above background, the problems to be studied in this study are formulated as follows: How does Indonesia's positive legal framework regulate digital transformation in the creation of land sale and purchase deeds by PPAT and the issuance of electronic certificates in the online land registration system? What are the legal challenges and obstacles in the implementation of digital transformation of the land system, especially related to legal certainty, data security, the validity of electronic documents, and the protection of the rights of people who hold land right?And whatt is the ideal model for the implementation of digital transformation of land sale and purchase deeds and electronic certificates that are able to realize efficient land services without sacrificing legal certainty and protection of people's rights?

2. METHODOLOGY

This study uses a normative legal research method that examines laws as norms or das sollen. Normative legal research is conducted by examining literature materials or secondary data consisting of

primary, secondary, and tertiary legal materials. The focus of this study is to analyze positive legal principles, legal principles, legal doctrines, and comparative laws related to digital transformation in the Indonesian land system. This research uses three main approaches, namely: First, the statute approach, which is an approach that is carried out by examining all laws and regulations related to the digital transformation of the land system. The regulations under review include the 1945 Constitution of the Republic of Indonesia, Basic Agrarian Law, ITE Law, Government Regulation on Land Registration, Regulation of the Minister of ATR/Head of BPN, and other relevant technical regulations. This approach is used to understand the positive legal framework that governs digital transformation in the land system. Second, the case approach, which involves examining cases related to the application of electronic systems in land that have been decided by the court or are developing in the community. This study applies a normative legal research method, positioning law as a system of norms (das sollen) to examine regulatory ambiguity in the land digitization process in Indonesia.

3. RESULT AND DISCUSSION

3.1. Legal Framework for Digital Transformation of Land Sale and Purchase Deeds and Electronic Certificates

The constitutional basis for the digital transformation of the land system can be traced from Article 33 paragraph (3) of the 1945 Constitution of the Republic of Indonesia, which states that the earth, water, and natural resources contained in it are controlled by the state and used for the greatest prosperity of the people. In this context, the state has the authority to regulate and organize the designation, use, supply, and maintenance of the earth, water, and space, and the natural resources contained therein. The implementation of an efficient land administration system through digital transformation is the implementation of the state's authority. From a philosophical perspective, digital transformation is in line with the theory of legal development proposed by Mochtar Kusumaatmadja, which emphasizes that the law must be able to keep up with the development of society. The law should not be static but must be dynamic according to the needs of the community. In the era of the industrial revolution 4.0 and society 5.0, the public demands fast, easy, transparent, and accountable public services. The digital transformation of the land system is a response to these demands (Natika, 2024, p. 11).

The legal framework for digital transformation in Indonesia's land system is built through a hierarchy of interrelated laws and regulations. Law Number 5 of 1960 concerning the Basic Regulation of Agrarian Principles (UUPA) as the main basis of Indonesian agrarian law has given the government the authority to organize land registration throughout the territory of the Republic of Indonesia. Article 19 of the UUPA states that to ensure legal certainty by the government, land registration is held throughout the territory of the Republic of Indonesia in accordance with the provisions regulated by government regulations. The implementation of land registration as mandated by the UUPA is further regulated in Government Regulation Number 24 of 1997 concerning Land Registration, which was later amended by Government Regulation Number 18 of 2021. PP 18/2021 is a regulation that explicitly accommodates digital transformation in the land registration system.

Some important provisions related to digitalization in GR 18/2021 include the following: (a) Article 1, number 19, which defines an electronic certificate as a certificate of land rights issued and stored in an electronic format; (b) Article 82, which regulates the issuance and delivery of electronic certificates; and (c) Article 89, which gives electronic certificates the same legal force as conventional certificates. In the context of the PPAT deed, Government Regulation Number 24 of 2016 concerning Amendments to Government Regulation Number 37 of 1998 concerning PPAT Position Regulation regulates the authority, obligations, and prohibitions of PPAT. Although this regulation does not comprehensively regulate electronic deeds, it provides space for the development of digitalization while maintaining the principles of deed authenticity. Regulation of the Minister of Agrarian and Spatial Planning/Head of the National Land Agency Number 7 of 2019 concerning the Second

Amendment to the Regulation of the Minister of Agrarian and Spatial Planning/Head of the National Land Agency Number 3 of 1997 concerning Provisions for the Implementation of Government

Regulation Number 24 of 1997 has accommodated the use of electronic systems in the land registration process. The general legal basis regarding electronic transactions and documents is regulated in Law Number 11 of 2008 concerning Information and Electronic Transactions, as amended by Law Number 19 of 2016 (ITE Law). The ITE Law recognizes electronic documents as legal evidence. Article 5 paragraph (1) of the ITE Law states that electronic information and/or electronic documents and/or their printed results are valid legal evidence. Article 11 of the ITE Law regulates electronic signatures that have legal force and legal consequences, provided they meet certain requirements. To ensure the security of electronic systems, the government has issued Government Regulation Number 71 of 2019 concerning the Implementation of Electronic Systems and Transactions. This government regulation regulates the implementation of electronic systems by state administrators, including the obligation of electronic system operators to provide protection for the availability, integrity, authentication, confidentiality, and accessibility of personal data. In the context of land, ATR/BPN as an electronic system operator must meet security standards as stipulated in PP 71/2019.

Furthermore, the protection of personal data in the land electronic system must also refer to Law Number 27 of 2022 concerning Personal Data Protection (PDP Law). The PDP Law regulates the rights of personal data owners, the obligations of controllers and processors of personal data, as well as sanctions for violations of personal data protection. Land data, including the identity of the owner, the location of the land, and the economic value of the land, is personal data that must be protected in accordance with the provisions of the PDP Law (Jayanti & Hardjo, 2025, p. 368). 368). One of the crucial aspects of digital transformation is the power of electronic document proof. In Indonesian civil procedure law, evidence is regulated in Article 164 of the Civil Code and Article 1866 of the Civil Code which includes written evidence (including authentic deeds and deeds under hand), witness evidence, suspicions, confessions, and oaths. An authentic deed as stipulated in Article 1868 of the Civil Code is a deed made in the form specified by law by or in the presence of a public official authorized for it at the place where the deed was made.

In the context of digitalization, the question arises as to whether electronic documents can be categorized as authentic deeds. The ITE Law provides a legal basis for the fact that electronic documents have valid evidentiary power (Juliani, 2024, p. 177). 177). However, to be categorized as an authentic deed, an electronic document must meet several requirements: (a) be made by or in the presence of an authorized official; (b) have a certified electronic signature; (c) use electronic systems that meet safety and reliability standards; (d) can be proven to be authentic and integrity. Article 11 paragraph (1) of the ITE Law states that electronic signatures have legal force and legal consequences as long as they meet the requirements: (a) the data for making electronic signatures related only to the signatories; (b) the data of electronic signature generation at the time of the electronic signing process is only within the power of the signer; (c) any changes to the electronic signature that occur after the time of signing are known; (d) any changes to the electronic information associated with such electronic signature after the time of signing are known; (e) there is a certain method used to identify who the signatory is; and (f) there is a certain way to show that the signatory has consented to the relevant electronic information.

In practice, the implementation of electronic signatures on land sale and purchase deeds still faces various technical and legal challenges. A reliable public key infrastructure (PKI), a trusted electronic certification provider (PSrE), and a strong verification and authentication mechanism are required. As a public official who makes a sale and purchase deed, the PPAT must be equipped with an electronic certificate issued by the PSrE that is recognized by the government.

3.2. Legal Challenges and Obstacles to Digital Transformation Implementation

Although a legal framework for digital transformation exists, its implementation still faces various problems related to legal certainty. The first problem relates to the harmonization and synchronization of regulations. Various laws and regulations governing land, electronic transactions, personal data protection, and government administration have not been fully integrated. There is a legal gap and disharmony between regulations that have the potential to cause legal uncertainty. For example, PP 18/2021 on Land Registration has regulated electronic certificates, but PP 24/2016 on PPAT Position Regulations has not explicitly regulated electronic deeds (Busroh, 2017, p. 227). This raises the question of whether the sale

and purchase deed made by PPAT can be fully in electronic form or whether it still requires physical documents as a backup. This ambiguity has the potential to cause disputes in the future.

The second problem relates to the validity and evidentiary power of electronic documents in judicial practice. Although the ITE Law has granted recognition of electronic documents as legal evidence, in practice, many judges do not have a deep understanding of the characteristics and mechanisms of electronic document verification (Divaresky & Yusuf, 2025). This can cause inconsistencies in court decisions related to land disputes involving electronic documents. The third problem pertains to standard operating procedures (SOPs) that are not uniform in all land offices. Digital transformation requires the standardization of systems and procedures to ensure consistency and legal certainty. However, in practice, there are still differences in implementation between land offices, especially between those in urban and remote areas with limited technological infrastructure (Marzuki, 2017).

Data security is one of the biggest challenges in the implementation of land electronic systems. Land data contains sensitive information with high economic value, making it vulnerable to becoming a target of cybercrime. Security threats that may occur include the following: (a) system break-ins (hacking) to alter or steal land data; (b) ransomware attacks that encrypt data and demand ransoms; (c) falsification of electronic documents; (d) digital identity theft; and (e) data manipulation by internal persons (insider threats). Criminal cases involving the falsification of land documents have often occurred in conventional systems. In the digital era, the modus operandi of crimes can develop to become more sophisticated. Electronic certificate forgery, land database manipulation, and man-in-the-middle attacks on online transactions are real threats that must be anticipated. Unfortunately, cybersecurity systems in many government agencies, including land offices, are inadequate to deal with these threats.

Security issues are also related to personal data protection. Land data includes the landowner's personal information, including the NIK, address, and financial information. Personal data leaks can cause losses to landowners and can potentially be misused for criminal purposes. The PDP Law regulates the obligation of data controllers to protect personal data; however, its implementation in the land sector still requires more detailed technical arrangements. Backup systems and disaster recovery are also important concerns. Electronic systems have the risk of data loss due to hardware damage, cyberattacks, or natural disasters. A robust backup system with data replication in multiple locations is needed to ensure that land data remains safe and can be recovered in the event of a disaster. However, an adequate backup infrastructure requires significant investment, and not all land offices have a reliable backup system.

Digital transformation in the land system faces the challenge of the digital divide, which is still wide in Indonesia. Not all regions have adequate information technology infrastructure. Many remote, disadvantaged, and outermost areas still lack stable internet access. This has the potential to create inequality in access to land services between people in urban areas and those in remote areas. The digital divide is not only about infrastructure but also about people's digital literacy (Kusmiyati et al., 2023, p. 33). 33). Many people, especially the older generation and people in rural areas, are not familiar with digital technology. They have difficulty using the online system to access land services. If the electronic system is implemented without considering the aspect of digital literacy, it is feared that it will cause social exclusion where certain segments of society cannot access their rights to land services.

Accessibility issues are also related to device availability and cost. Not all people have smartphones or computers that can be used to access online systems. The cost of internet quota is also still a burden for low-income people. Digital transformation is supposed to make it easier and lower the cost of accessing services, but if not managed properly, it can actually create new barriers for the poor (Nasir et al., 2025, p. 884). Not all land office employees have adequate competence in the field of information technology. A comprehensive training and capacity-building program is needed to ensure that apparatus can manage electronic systems properly. Without adequate human resource readiness, electronic systems will not run optimally and have the potential to cause mistakes that are detrimental to society. Without adequate human resource readiness, the electronic system will not run optimally and even has the potential to cause mistakes that are detrimental to society.

Digital transformation must ensure the protection of people's land rights, as guaranteed in the constitution. One concern is the potential for land-rights violations due to system errors or manipulation

of electronic data. In conventional systems, physical documents can be tracked and verified for authenticity, although this requires time and cost. In electronic systems, if data manipulation occurs and is not detected, it can lead to ownership disputes that are detrimental to legitimate landowners. The principle of publicity in agrarian law requires that everyone can easily find out the legal status of a piece of land. Electronic systems should make it easier for people to access land information. However, excessive disclosure of information can threaten the privacy of landowners and open up opportunities for crimes, such as fraud or extortion.

A balance is needed between the principle of publicity and the protection of privacy. Dispute resolution mechanisms must also be adapted to the digital era. Land disputes involving electronic documents require a different approach and evidentiary mechanism than conventional disputes. The court must be equipped with human resources and infrastructure capable of conducting digital forensics to verify the authenticity and integrity of electronic documents. Without this capacity, the judicial process will face difficulties in resolving disputes involving electronic documents. The consumer protection aspect is also relevant in the context of digital land services. The public as a service user must be protected from possible losses due to system errors, service interruptions, or data misuse. There must be a clear compensation mechanism if the community suffers losses due to the failure of the electronic system. Unfortunately, existing regulations do not specifically regulate liability and compensation in the context of electronic land services.

3.3. Ideal Model of Digital Transformation of Land Systems

Based on the analysis of the existing legal framework (thesis) and various challenges faced (antithesis), an ideal model for the implementation of digital transformation of the land system can be formulated that is able to realize efficient services without sacrificing legal certainty and protection of people's rights. This ideal model must be built on the following basic principles: first, the principles of legal certainty and protection of rights. Electronic systems must be able to provide the same or better legal certainty guarantees than conventional systems (Rizal et al., 2025). Every transaction and electronic document must have a clear audit trail (audit trail) so that its authenticity can be tracked and verified. The system must be equipped with multiple layers of security to prevent data manipulation. Blockchain technology can be considered one of the solutions to ensure the immutability and transparency of land data.

Second, digital accessibility and inclusion principles. Digital transformation should not create social exclusion. Electronic systems must be designed with user interfaces that are easy to understand by all groups, including those with low digital literacy. Alternative access must be provided for people who do not have digital devices or Internet access. Land offices must continue to provide face-to-face (offline) services as a complement to online services. Digital literacy and community education programs must be an integral part of digital transformation implementation. Third, security and data protection principles. Given the sensitivity of land data, the system must have very high security standards. Implementation must refer to international security standards, such as ISO 27001 on information security management systems. End-to-end data encryption, multifactor authentication, regular security audits, and penetration testing are required. The backup system must use disaster recovery technology with real-time data replication in multiple datacenters located in different locations.

Fourth, transparency and accountability. Electronic systems must be transparent in terms of procedures, costs, and processing times. The public must be able to track the status of their applications in real-time. Every action in the system should clearly record who did, when, and what was done. This is important to prevent the abuse of authority and facilitate internal and external supervision. Fifth, interoperability and integration. The electronic land system must be integrated with other government systems, such as the population administration system, taxation system, banking system, and judicial system. Interoperability between systems will increase efficiency and reduce data redundancy. However, this integration must be performed while paying attention to security and data privacy aspects.

The implementation of digital transformation must be carried out gradually and measurably. The first stage is the preparation stage, which includes the following: (a) refinement of regulations to close legal

gaps and harmonize regulations; (b) adequate development of technological infrastructure; (c) development of application systems that meet the needs; (d) training of human resources of the apparatus and related stakeholders; and (e) socialization and education to the community. This stage of preparation is crucial and should not be rushed. Rushing implementation without careful preparation will actually cause more problems. The second stage is the pilot project stage. Electronic systems cannot be directly implemented throughout Indonesia simultaneously. It is necessary to conduct trials in several pilot areas that represent various regional characteristics (urban, rural, and remote). This trial aims to identify technical and non-technical issues that may arise. Feedback from the trial is used to improve the system before nationwide rollout. The duration of the trial must be adequate, at least 6–12 months, to identify various potential problems.

The third stage is the gradual implementation stage. After a successful trial, implementation is carried out in stages, starting with areas that have good infrastructure and human resource readiness. Gradual implementation allows for continuous adjustment and improvement. In this stage, the electronic system runs parallel to the conventional system (hybrid system) (Wahab & Arsyad, 2015, p. 14). People are given the option to use online or offline services according to their preferences and abilities. The fourth stage is the continuous improvement stage. Once the system is running, periodic evaluations must be carried out to measure effectiveness, efficiency, and user satisfaction. Based on the evaluation results, continuous system improvements are carried out. Based on the results of the evaluation, continuous system improvements are carried out. Digital transformation is not a project that has an end point, but is a process that continues to evolve according to technological developments and societal needs.

From a technical perspective, the land electronic system must be built with a robust and scalable architecture. The system must be able to handle large transaction volumes and can be developed as needed in the future. Cloud computing can be a solution for system flexibility and scalability. However, given the sensitivity of land data, the use of cloud must be with a private cloud or hybrid cloud model with a data center located in Indonesia to comply with data protection regulations. The system must use the latest technology in terms of security, such as (a) a public key infrastructure (PKI) for digital signatures and encryption; (b) biometric authentication to ensure the identity of the user; (c) blockchain or distributed ledger technology to ensure data immutability; (d) artificial intelligence for anomaly detection and fraud prevention; and (e) security information and event management (SIEM) for real-time monitoring of security threats. Investing in security technology is not cheap; however, it is a non-negotiable investment given the high value and sensitivity of land data.

The network infrastructure must also support stable internet connectivity with adequate bandwidth. For areas not yet covered by the Internet network, satellite technology or other alternative connectivity solutions can be used. The government must collaborate with telecommunication providers to ensure the availability of infrastructure throughout Indonesia. In terms of applications, the system must have a user-friendly interface that is accessible on various devices (desktops, tablets, and smartphones). The application must support multiple languages for regions with strong regional languages. Accessibility features for people with disabilities must also be available in accordance with the principle of inclusive design. To ensure legal certainty, it is necessary to strengthen and improve regulations. Several aspects that need to be regulated in more detail include strict regulations of PPAT electronic deeds. It is necessary to revise the PPAT Position Regulation to explicitly regulate the authority of PPAT to make electronic deeds, technical requirements for electronic deeds, verification and validation procedures, and sanctions for abuse. Electronic deeds must have the same legal force as conventional deeds, with certain conditions that are technologically guaranteed. Second, the regulation of liability and compensation. There should be clarity regarding who is responsible in the event of a loss due to an electronic system failure. This may be the state through the BPN, a system provider vendor, or a shared liability. There must be a fast and fair compensation mechanism for disadvantaged communities. The establishment of a special compensation fund can be considered to anticipate loss claims.

Third, arrangements for dispute resolution. A specific dispute resolution mechanism is needed for land disputes involving electronic documents. The establishment of a specialized court or special chamber with competence in digital evidence can be considered. Alternative dispute resolution methods, such as

mediation and arbitration, can also be developed as faster and cheaper alternatives. Fourth, arrangements for standardization and interoperability. Clear technical standards are needed for data formats, communication protocols, and interfaces between systems. This standard is important to ensure that systems developed by different vendors can work well together. Adopting international standards, such as those of ISO, W3C, or OASIS, can be a solution. Fifth, regulations for audits and oversight. There must be an independent institution that conducts audits and oversees land electronic systems. Audits should consider technical, legal, and compliance aspects. The results of the audit should be made public to ensure transparency and accountability.

4. CONCLUSION

Based on the above discussion, it can thus be concluded that Indonesia's positive legal framework has accommodated digital transformation in the land system through various regulations, such as the ITE Law, PP 18/2021 concerning Land Registration, the PDP Law, and other related regulations. The constitutional and philosophical foundation of digital transformation has also been strong, with the mandate of Article 33 paragraph (3) and Article 28D paragraph (1) of the 1945 Constitution of the Republic of Indonesia. Electronic documents, including electronic certificates and electronic deeds, have been recognized to have legal force as long as they meet certain requirements.

The implementation of digital transformation still faces various significant challenges and obstacles, including the following: (a) problems of legal certainty due to imperfect harmonization of regulations; (b) data security threats and cybercrime; (c) the digital gap and accessibility that is unequal between regions and between community groups; (d) the uneven readiness of technological infrastructure and human resources; and (e) the problem of protecting people's rights and dispute resolution mechanisms that are not adaptive to digital technology. The ideal model for the implementation of digital transformation of the land system must be built on the principles of legal certainty, accessibility, data security, transparency, and interoperability. Implementation must be carried out in stages of preparation, trial, gradual implementation, and continuous evaluation. The technical aspect must use the latest technology with high safety standards. Strengthening regulations is needed to regulate in detail about PPAT electronic deeds, liability, dispute resolution, and system standardization. The development of human resource capacity, both apparatus and the community, is the key to the success of digital transformation.

Ethical Approval

Not Applicable

Informed Consent Statement

Not Applicable

Authors' Contributions

Not Applicable

Disclosure Statement

No potential conflict of interest was reported by the author(s).

Data Availability Statement

The data presented in this study are available on request from the corresponding author due to privacy reasons.

Funding

This research received no external funding.

Notes on Contributors

Wirda Ningsih Octavia
Wirda Ningsih Octavia is affiliated with Doctoral Study Program in Law, Faculty of Law, University of Lampung Bandar Lampung.

REFERENCES

Busroh, F. F. (2017). Konseptualisasi Omnibus Law dalam Menyelesaikan Permasalahan Regulasi Pertanahan. Arena Hukum, 10(2), 227–250. https://doi.org/10.21776/ub.arenahukum.2017.01002.4

Divaresky, R., & Yusuf, H. (2025). Efektivitas Penggunaan Bukti Elektronik dalam Pembuktian Perkara Pidana di Pengadilan Negeri. Jurnal Intelek dan Cendikiawan Nusantara, 2(5), 9555–9568. https://jicnusantara.com/index.php/jicn/article/view/5406

Jayanti, R. K., & Hardjo, D. (2025). Perlindungan Hukum Sertipikat Elektronik yang Hilang dalam Database Brankas Elektronik pada Aplikasi Sentuh Tanahku. UNES Law Review, 8(2), 368–384. https://review-unes.com/law/article/view/2481

Juliani, A. D. (2024). Penyusunan Akta Perjanjian Elektronik dalam Hukum Keperdataan: Peran Notaris dan Tanggung Jawab Hukum. Officium Notarium, 4(2), 177–201. https://doi.org/10.20885/JON.vol4.iss2.art2

Kusmiyati, R., Ginting, R., & Thariq, M. (2023). Digitalisasi Birokrasi dalam Meningkatkan Pelayanan Publik (Peluang dan Tantangannya). Komunikologi: Jurnal Pengembangan Ilmu Komunikasi dan Sosial, 7(1), 33–46. http://dx.doi.org/10.30829/komunikologi.v7i1.16596

Marzuki, P. M. (2017). Legal Research. Kencana Prenada Media Group.

Mustofa, F. C. (2020). Evaluation of the development of land information systems at the Ministry of Agrarian and Spatial Planning/National Land Agency. Bhumi: Jurnal Agraria dan Pertanahan, 6(2), 158–171. https://jurnalbhumi.stpn.ac.id/index.php/JB/article/view/412

Nasir, M., Azizah, U. N., Afandi, R., Alfikri, Y., Ramadhani, N., & Rosalina, L. (2025). Implementation of information technology to improve accessibility and connectivity in Nagari Pasilihan. Jurnal Imiah Pengabdian Pada Masyarakat (JIPM), 2(4), 884–899. https://garuda.kemdiktisaintek.go.id/documents/detail/5250835

Natika, L. (2024). Transformasi Pelayanan Publik di Era Digital: Menuju Pelayanan Masa Depan yang Lebih Baik. The World of Public Administration Journal, 6(1), 1–11. https://doi.org/10.37950/wpaj.v6i1.2040

Rizal, A. F., Istijab, I., & Ariesta, W. (2025). Tinjauan Yuridis Terhadap Pendaftaran Tanah Dengan Penerapan Sertifikat Elektronik Berdasarkan Peraturan Menteri ATR/BPN No. 1 Tahun 2021 Tentang Sertifikat Elektronik. Indonesian Journal of Islamic Jurisprudence, Economic and Legal Theory, 3(3), 2362–2370. https://doi.org/10.62976/ijijel.v3i3.1278

Wahab, R. A., & Arsyad, A. (2015). Studi Implementasi E-Government di Daerah Perbatasan. Pekommas Journal, 18(1), 1–14. https://jkd.komdigi.go.id/index.php/pekommas/article/view/255