

Legal Certainty and People's Law Protection in Land Registration and Electronic Land Certificates in Indonesia

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Abstract

Land registration is a fundamental instrument in realizing legal certainty of land rights and legal protection for the people. However, the digitization of land registration does not automatically guarantee legal protection if it is not followed by the validity of physical and juridical data, the security of electronic systems, the protection of personal data, the readiness of human resources, and equal access for the community. This article analyzes the legal certainty of land registration and electronic land certificates as a means of legal protection for the people in Indonesia. This study uses normative juridical methods with legislative, conceptual, and analytical approaches. Primary legal materials include the UUPA, Government Regulation Number 24 of 1997, Government Regulation Number 18 of 2021, Ministerial Regulation of ATR/BPN Number 3 of 2023, the ITE Law, and the Personal Data Protection Law. The results of the study show that electronic land certificates have a strong normative basis as a land registration product, but their legal certainty depends on four main prerequisites: data accuracy, reliability of electronic systems, personal data protection, and recovery mechanisms in the event of administrative errors or system disruptions. This article offers a four-layered legal protection model, namely normative, administrative, technological, and remedial protection. The contribution of this research lies in the formulation of a framework for the protection of people's law in the electronic land registration system so that land digitization is not only an administrative innovation, but also an instrument of agrarian justice.



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INTRODUCTION

Land has a fundamental position in the lives of the Indonesian people. For the people, land is related to economic and social life, so the uncertainty of the legal status of land can contribute to conflicts, disputes, and issues of certainty of rights. Therefore, the certainty of land administration and the quality of land registration data are important elements in the protection of land rights (Alimuddin, 2021; Aditya et al., 2021).

In the national agrarian legal system, land registration is the main mechanism to realize legal certainty. Law Number 5 of 1960 concerning the Basic Regulation of Agrarian Principles or UUPA became the basis for the national agrarian basic law and came into effect on September 24, 1960. Through the principle of land registration, the state not only records the legal relationship between people and land, but also provides strong evidence regarding land rights. Thus, land registration functions as an administrative instrument as well as an instrument of legal protection. (Alimuddin, 2021; Aditya et al., 2021) (Alimuddin, 2021; Aditya et al., 2021)

The technical arrangements for land registration in Indonesia were developed through Government Regulation Number 24 of 1997 concerning Land Registration. The regulation

repealed Government Regulation Number 10 of 1961 and was later amended by Government Regulation Number 18 of 2021. This development shows that Indonesia's land law is not static, but continues to adapt to administrative needs, legal certainty, and social changes. In the modern context, one of the most important changes is the inclusion of information technology in land registration activities. (Aditya et al., 2021; Kusmiarto et al., 2021)

Land digitization has obtained a clearer normative basis through the Ministerial Regulation of the Minister of ATR/BPN Number 3 of 2023 concerning the Issuance of Electronic Documents in Land Registration Activities. This regulation emphasizes that land registration can apply information and communication technology through electronic systems. The Ministerial Regulation also revokes the Ministerial Regulation of the Minister of ATR/BPN Number 1 of 2021 concerning Electronic Certificates, so that the current legal regime regarding electronic land documents rests on the Ministerial Regulation of ATR/BPN Number 3 of 2023. (Alimuddin, 2021; Kusmiarto et al., 2021)

The urgency of this study is even stronger because electronic land certificates have become part of the transformation of land services. Studies on the readiness for digital transformation of land services in Indonesia show that digitalization is directed to produce faster, easier, and more reliable services, but still faces problems of data quality, technological infrastructure, cybersecurity, privacy, and system resilience (Kusmiarto et al., 2021).

However, digital transformation in land registration is not without problems. On the one hand, electronic certificates can strengthen document security, speed up services, reduce the risk of losing physical certificates, and narrow the space for forgery. On the other hand, electronic systems also present new risks, such as data migration errors, hacking, personal data leakage, digital access inequality, low community literacy, and vulnerability to poor groups or indigenous peoples that have not been fully reached by digital administration systems. (Kusmiarto et al., 2021; Aritonng & Busro, 2025)

This issue is becoming increasingly important because electronic land certificates are not just administrative documents. Electronic certificates contain legal data, physical data, identity data, and information of high economic value. Therefore, the regulation is not only related to agrarian law, but also to electronic information law and personal data protection. Law Number 11 of 2008 concerning Electronic Information and Transactions recognizes electronic information and/or electronic documents as well as their printed results as legal evidence. Meanwhile, Law Number 27 of 2022 concerning Personal Data Protection regulates the principles, types of personal data, data subject rights, data processing, obligations of data controllers and processors, data transfers, administrative sanctions, dispute resolution, and criminal provisions related to personal data protection. (Ariansyah et al., 2024; Kusmiarto et al., 2021).

Previous research has discussed electronic certificates from various angles, including the implementation of electronic certificates as a guarantee of legal certainty (Alimuddin, 2021), the legal force of electronic certificates in proving civil procedure law (Khasanah, 2021), and the position of electronic certificates as evidence in court (Yudistara & Santoso, 2024). However, these studies still leave gaps. Most studies tend to focus on the validity of electronic certificates, the strength of proof, or the readiness of digital transformation. Studies on data quality and readiness of digital services show that the issues of completeness, consistency, accuracy, data integrity, cybersecurity, privacy, and system resilience are still important aspects in the transformation of land services (Kusmiarto et al., 2021). Therefore, this article seeks to connect legal certainty, data validity, system security, personal data protection, public access, and rights restoration mechanisms in one integrated legal protection framework. The novelty of this study lies in its formulation of a four-layered legal protection model (normative, administrative, technological, and remedial) that has not been proposed in previous studies,

while the objective is to analyze the legal certainty of land registration and electronic land certificates as a means of legal protection for the people in Indonesia.

METHOD

This research uses a normative juridical method because the object of study is legal norms, legal principles, land law doctrine, and legal policies regarding land registration and electronic certificates. Normative juridical research was chosen because the main problem of this article is not to measure community behavior quantitatively, but to assess the consistency of norms, adequacy of regulation, and legal implications of the transformation of land certificates from physical to electronic forms. (Kusmiarto et al., 2021)

The approach used consists of three approaches. First, the legislative approach, which is to examine regulations relevant to land registration and electronic documents, including the UUPA, Government Regulation Number 24 of 1997, Government Regulation Number 18 of 2021, Regulation of the Minister of ATR/BPN Number 3 of 2023, Law Number 11 of 2008 concerning Electronic Information and Transactions and its amendments, and Law Number 27 of 2022 concerning Personal Data Protection. Second, the conceptual approach, namely analyzing the concepts of legal certainty, legal protection, land registration, strong evidence, electronic administration, and land rights. Third, an analytical approach, namely connecting legal norms with practical issues in the application of electronic certificates.

In order for this research to be replicated, the research stages are carried out as follows. First, the researcher inventories primary legal materials through a database of official regulations, especially regulations related to agrarian affairs, land registration, electronic documents, and personal data protection. Second, the researcher collects secondary legal materials in the form of journal articles, research results, and scientific publications with the keywords "electronic land certificates", "electronic land registration", "legal certainty of electronic certificates", "legal protection of electronic certificate holders", and "protection of land personal data". Third, the researcher classified legal issues into four units of analysis, namely: the basis of the authority to issue electronic certificates, the power of proof, data security and integrity, and the mechanism for the protection and restoration of people's rights.

The analysis technique used is prescriptive-qualitative analysis. The analysis is carried out by reading legal norms systematically, then assessing whether these norms are adequate to ensure legal certainty and protection of people's laws. This research does not use interviews or field surveys so that the results are normative-prescriptive. These limitations are realized as the limit of the scope of research, but it does not reduce its academic relevance because the focus of this article is to build a legal framework that can be used as the basis for the next empirical research.

RESULT AND DISCUSSION

Land registration is the basis for legal certainty of land rights

The results of the study show that the legal certainty of land rights in Indonesia is rooted in the land registration system. Land registration serves to record physical data and juridical data on land parcels, including location, boundaries, area, status of rights, rights holders, as well as the history of transfer and assignment of rights. Through land registration, the legal relationship between the subject of rights and land objects obtains administrative recognition from the state. (Aditya et al., 2021; Alimuddin, 2021)

Legal certainty in land registration has two dimensions. First, the objective dimension, namely certainty regarding the land object, field boundaries, area, location, and land status. Second, the subjective dimension, which is certainty about who the legal rights holder is and the type of rights attached to the land parcel. These two dimensions must be present at the same

time. Certificates that are true in name but wrong in terms of boundaries do not provide adequate legal certainty. On the other hand, physical data that is correct but not supported by valid juridical data can also cause disputes. (Aditya et al., 2021)

In this context, land certificates are the final product of the land registration process. Therefore, the legal force of a certificate is not only determined by the form of the document, but also by the validity of the registration process that precedes it. Both physical certificates and electronic certificates depend on the accuracy of data collection, document verification, field measurement, data announcement, rights bookkeeping, and issuance of proof of rights. Thus, the digitization of certificates should not be understood as a substitute for substantive validation, but rather as a means to strengthen such validation. (Aditya et al., 2021; Khasanah, 2021)

Electronic land certificates have a normative basis in the Indonesian legal system

Electronic land certificates have legal legitimacy because they are issued within the framework of national land registration. The Minister of ATR/BPN Number 3 of 2023 specifically regulates the issuance of electronic documents in land registration activities and emphasizes that land registration can apply information and communication technology through electronic systems. Thus, electronic certificates are not documents outside the land law system, but rather an electronic form of state-recognized land administration products. (Alimuddin, 2021; Aritonng & Busro, 2025)

From the legal perspective of electronic information, the validity of electronic certificates is also strengthened by the ITE Law. Article 5 of the ITE Law recognizes electronic information and/or electronic documents as well as their printed results as valid legal evidence. This recognition is important because electronic land certificates must be able to be used in administrative services, legal transactions, proof, and dispute resolution. (Khasanah, 2021; Yudistiara & Santoso, 2024)

However, the normative basis needs to be read systematically. Electronic certificates are not only subject to agrarian law and electronic information law, but must also be subject to the principle of personal data protection. Law Number 27 of 2022 regulates the rights of data subjects, data processing, the obligations of data controllers and processors, as well as dispute resolution mechanisms and sanctions. Therefore, the Ministry of ATR/BPN as the operator of electronic systems in land registration must ensure that land data is processed legally, accurately, safely, proportionately, and responsibly. (Ariansyah et al., 2024; Aritonng & Busro, 2025)

Electronic certificates strengthen legal protection when physical and juridical data are valid

Electronic certificates have the potential to strengthen legal protection for the people through several mechanisms. First, electronic certificates reduce the risk of loss, damage, or falsification of physical documents. Second, electronic systems allow for faster and structured tracking of land data history. Third, digital security features such as electronic signatures, QR codes, authentication, and verification systems can strengthen document integrity. Fourth, data integration can speed up land services, including certificate checking, data maintenance, transfer of rights, and the imposition of dependents' rights. (Alimuddin, 2021; Khasanah, 2021)

However, this potential can only be realized if the data entered into the electronic system is correct and has been verified. If the physical or juridical data migrated to the electronic system contains errors, then the electronic certificate will only digitize the error. In such a situation, technology does not solve legal problems, but can actually accelerate the spread of incorrect data. Therefore, electronic certificates must be preceded by careful data validation, data cleaning, synchronization of physical and juridical data, and objection mechanisms for the public. (Aditya et al., 2021; Kusmiarto et al., 2021)

The findings are in line with research that places electronic certificates as part of a series of land registrations and emphasizes the importance of the quality of administrative processes and the power of electronic document proof (Khasanah, 2021; Alimuddin, 2021).

People's legal protection requires system security and personal data protection

Electronic land certificates contain highly sensitive information. This information includes the identity of the right holder, the location of the land parcel, the type of right, the area of the land, the history of transition, and the status of the encumbrance. Therefore, the protection of people's law in the electronic certificate system is not only related to the recognition of land rights, but also related to the security of personal data and the security of electronic systems. (Ariansyah et al., 2024; Kusmiarto et al., 2021)

System security is an important concern in the digitalization of land administration. Research on the readiness for land service transformation in Indonesia shows that there are problems with completeness, suitability, consistency, accuracy, duplication, and integrity of data, as well as the need to improve aspects of cybersecurity, privacy, and system resilience (Kusmiarto et al., 2021).

The protection of personal data is an important element because the holder of land rights is the subject of the data. As a data subject, the people have the right to know how their data is processed, stored, used, protected, and corrected in the event of an error. The state should not treat land data as mere internal administrative data, because the data is directly related to citizens' property rights, economic rights, and constitutional rights. (Ariansyah et al., 2024)

Legal protection model in electronic land registration

Based on the results of the analysis, the protection of people's law in the electronic land registration system can be formulated into four layers of protection.

Table 1. Four-Layered Legal Protection Model

Protection Layer	Forms of Protection	Functions for the People
Normative protection	Regulations in the UUPA, PP 24/1997, PP 18/2021, Ministerial Regulation of ATR/BPN 3/2023, ITE Law, and PDP Law	Provide the legal basis for issuance, recognition, use, and proof of electronic certificates
Administrative protection	Verification of physical and judicial data, identity validation, data announcement, data correction, and recording of changes in rights	Guarantee that the data in the electronic certificate is in accordance with the legal and physical circumstances of the land
Technological protection	E-signatures, authentication, QR codes, encryption, security audits, and access security	Prevent forgery, manipulation, illegal access, data leaks, and system damage
Remedial protection	Data correction, administrative objections, civil lawsuits, state administrative lawsuits, compensation, and official liability	Provide redress in the event of errors, disputes, or rights violations

This model shows that legal protection cannot stop at the issuance of electronic certificates. Legal protection must work from the stage of data collection, validation, issuance, use, security, and recovery in the event of an error. Thus, electronic certificates can only be called a means of legal protection if all layers of protection run effectively. (Kusmiarto et al., 2021; Aritonng & Busro, 2025)

The digitization of land certificates marks a paradigm shift in land registration law. In the conventional system, legal certainty tends to be understood as certainty over physical documents. People feel safe when holding certificates in paper form. However, in electronic systems, legal certainty has shifted to data-based certainty. This means that legal protection is no longer primarily determined by the mastery of physical documents, but by the validity,

integrity, security, and traceability of data in electronic systems. (Kusmiarto et al., 2021; Rodima-Taylor, 2021)

This shift has important implications. Electronic certificates can strengthen legal certainty if land data is stored in a system that is secure, accurate, and verifiable. However, if the system is unreliable, data is invalid, or public access is limited, electronic certificates can actually create a new form of uncertainty. Therefore, land modernization must be understood as a modernization of legal governance, not merely the digitization of documents. (Kusmiarto et al., 2021; Aditya et al., 2021)

In the theory of legal certainty, the law must be predictable, clear, consistent, and enforceable. Electronic certificates meet the aspect of formal certainty because they already have a regulatory basis in the Ministerial Regulation of ATR/BPN Number 3 of 2023 and are supported by the recognition of electronic documents in the ITE Law. However, material legal certainty is only achieved if the people really get a guarantee that their rights are not lost due to data errors, system disruptions, or misuse of information. (Khasanah, 2021; Yudistiara & Santoso, 2024)

From the perspective of legal protection, electronic certificates have two main functions. First, the preventive function, which is to prevent disputes and rights violations. This function is realized through data validation, system security, document authentication, and proportional information disclosure. Second, the repressive function, which is to provide a settlement mechanism in the event of disputes, errors, or losses. This function is realized through data correction, administrative objections, settlement of land disputes, lawsuits to the court, and accountability of officials or institutions. (Aritonng & Busro, 2025; Khasanah, 2021)

Research on the legal power of electronic certificates shows that the characteristics of electronic documents, including ensuring integrity and authentication, are important aspects of proof. These findings are relevant to the preventive function of electronic certificates in reducing the risk of forgery and strengthening document verification (Khasanah, 2021).

Thus, electronic certificates should be placed as part of a whole system of legal protection. It is not enough for the state to state that electronic certificates are legitimate; the state must also ensure that the people are able to use, verify, protect, and defend their rights in the electronic system.

One of the main challenges of electronic certificates is the inequality of digital access. Not all people have the same ability, devices, internet networks, or literacy to access electronic land services. Poor people, the elderly, people in remote areas, and indigenous communities have the potential to experience greater barriers in utilizing electronic systems. (Kusmiarto et al., 2021; Zain & Santoso, 2025)

If these obstacles are not anticipated, land digitalization can create a paradox of legal protection. Policies intended to strengthen protection can actually weaken the position of vulnerable groups because they do not have adequate access to the system. Therefore, the implementation of electronic certificates must be accompanied by offline services, community assistance, public education, and assistance mechanisms for vulnerable groups. (Zain & Santoso, 2025; Aritonng & Busro, 2025)

In this context, the principle of agrarian justice must be the basis for land digitalization. Electronic certificates should not only benefit groups that already have access to technology, but should be an instrument to expand legal certainty for all people. Thus, the success of electronic certificates is not only measured by the number of certificates issued, but also by the extent to which the policy reduces inequality in legal protection. (Kusmiarto et al., 2021)

Electronic certificates indicate that land law can no longer stand alone. Electronic land registration is at the intersection between agrarian law, state administrative law, electronic

information law, evidentiary law, personal data protection law, and cybersecurity law. Therefore, the solution cannot be sectoral. (Rodima-Taylor, 2021; Kusmiarto et al., 2021)

Agrarian law answers questions about the types of rights, the subject of rights, the object of land, and the legal relationship between rights holders and land. State administrative law answers questions about the authority of officials, issuance procedures, correction of decisions, and administrative responsibilities. Electronic information law answers questions about the validity of electronic documents, electronic signatures, and digital proof. Personal data protection law answers questions about the rights of data subjects, the obligations of data controllers, and lawful data processing.

Therefore, the legal protection model for electronic certificates must be integrative. Without integration, a liability gap will arise. For example, if a data error occurs, the question may arise whether the problem is a land dispute, administrative error, electronic system disruption, or personal data breach. To avoid these uncertainties, clear operational standards are needed regarding problem classification, authorized institutions, resolution deadlines, and forms of redress for the community. (Kusmiarto et al., 2021; Rodima-Taylor, 2021)

Practically, this research has several implications. First, the government needs to ensure that the transfer of physical to electronic certificate media is carried out after the validation of physical and juridical data. Media transfer should not only be a document scanning activity, but should be a momentum for cleaning and updating land data. (Aditya et al., 2021; Kusmiarto et al., 2021)

Second, the Ministry of ATR/BPN needs to strengthen a data correction mechanism that is easy, cheap, fast, and transparent. The people must be able to file objections if there is a mistake in name, area, limit, rights status, or transition history. The correction mechanism must have a time limit and results that can be accounted for. (Aritonng & Busro, 2025)

Third, the security of electronic systems must be carried out on an ongoing basis through security audits, penetration tests, access control, encryption, recording of system activities, and independent supervision. System security should not be treated as a momentary action at the beginning of implementation, but should be a permanent obligation. (Kusmiarto et al., 2021)

Fourth, the protection of personal data must be part of the system design from the beginning. The principle of privacy by design needs to be applied in electronic land registration, so that the data collected, stored, and shared is truly in accordance with legal needs and does not open room for abuse. (Ariansyah et al., 2024)

Fifth, the government needs to expand legal literacy and digital literacy in land. The public must understand what electronic certificates are, how to verify their authenticity, how to protect digital access, and how to file objections if problems occur. Without this literacy, electronic certificates risk becoming legally valid instruments but not fully usable by the people. (Widyawati, 2025)

CONCLUSION

This article concludes that land registration remains the main foundation for legal certainty of land rights in Indonesia. Electronic land certificates are a continuation of the national land registration system which obtained a normative basis through the Minister of ATR/BPN Number 3 of 2023 and strengthened by the recognition of electronic documents in the ITE Law. However, the legal certainty of electronic certificates is not only determined by the existence of regulations, but also by the quality of data, the reliability of electronic systems, personal data protection, public access, and the effectiveness of recovery mechanisms.

The main findings of this study show that electronic land certificates can be a means of legal protection for the people if they meet four prerequisites. First, physical and juridical data must be valid. Second, electronic systems must be secure, reliable, and audited regularly. Third,

the personal data of rights holders must be protected according to the principles of personal data protection. Fourth, the public must have an easily accessible correction and recovery mechanism in the event of errors, disputes, or losses.

The scientific contribution of this article lies in the formulation of a four-layer legal protection model, namely normative, administrative, technological, and remedial protection. This model shows that electronic certificates are not just a change in the form of documents from paper to digital, but a paradigm shift from document-based certainty to data-based certainty. In practical terms, this article recommends that land digitization be carried out in a careful, inclusive, safe, and people-oriented manner, so that electronic certificates truly become an instrument for legal protection and agrarian justice in Indonesia.

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CONFLICT OF INTEREST

The author emphasizes that there are no personal, commercial, or financial conflicts of interest that have the potential to affect the objectivity of the findings of this study.

AUTHOR'S CONTRIBUTION

All authors contribute equally at every stage of research, from the idea of ideas and concepts, the collection and analysis of data, to the writing and editing of the final manuscript.

AI USAGE STATEMENT

In the preparation of this manuscript, the author makes limited use of Artificial Intelligence (AI), only to check grammar and refine the use of language. AI is not involved in data collection, substantive analysis, or drawing research conclusions.

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