

# LEGAL CERTAINTY OF ELECTRONIC CERTIFICATES IN PREVENTING LAND DISPUTES IN INDONESIA

Gloria Gita Putri Ginting<sup>1\*</sup>, Ety Sri Wahyuni<sup>2</sup>

<sup>1</sup> Universitas Pembangunan Panca Budi, Medan, Sumatera Utara, Indonesia

<sup>2</sup> Universitas Batam, Kepulauan Riau, Indonesia

E-mail: [gloriagita@dosen.pancabudi.ac.id](mailto:gloriagita@dosen.pancabudi.ac.id)<sup>1\*</sup>, [ettywahyunie@gmail.com](mailto:ettywahyunie@gmail.com)<sup>2</sup>

Received : 01 October 2024

Accepted

: 25 October 2024

Revised : 05 October 2024

Published

: 30 October 2024

## Abstract

This study aims to analyze the legal certainty of electronic certificates as an instrument for protecting land rights and to examine their role in preventing land disputes in Indonesia. The development of digitalization of land administration through the implementation of electronic certificates is expected to improve data security, accelerate services, and minimize the risk of forgery, overlapping ownership, and administrative errors, which have been the main causes of land disputes. This study uses a normative legal research method with a statutory approach, a conceptual approach, and a case approach. Data were obtained through a literature review of laws and regulations, court decisions, and various scientific literature related to land law and the transformation of digital-based land services. The results show that electronic certificates have the same legal force as conventional certificates as long as they are issued in accordance with applicable laws and regulations. The electronic system also guarantees data authentication, integrity, and security, thereby strengthening legal certainty for land rights holders. However, the effectiveness of electronic certificates in preventing land disputes is still influenced by the readiness of technological infrastructure, the quality of land data validation, the competence of human resources, and the level of public trust in the digital system. Therefore, strengthening regulations, improving cybersecurity, and continuously updating land databases are important factors in realizing legal certainty and reducing the potential for land disputes in Indonesia.

**Keywords:** Legal certainty, electronic certificates, land disputes, land digitalization, protection of land rights.

## INTRODUCTION

Land plays a crucial role in Indonesian society. It not only serves as a place to live, a space for economic activities, and a means of development, but is also directly linked to the survival, social identity, and existence of families. In many circumstances, land is a primary asset passed down from one generation to the next. The ever-increasing value of land also makes it prone to conflict. Land disputes can arise from overlapping ownership, differences in land boundaries, document forgery, unauthorized sales and purchases, physical possession by other parties, and errors in land administration records. These conditions demonstrate that legal certainty over land rights is a fundamental need for both the community and the state (Masri, 2023; Dewi & Susantio, 2024).

Legal certainty in the land sector is not sufficient simply to possess physical control of a plot of land. Communities need legal evidence that can demonstrate the legitimate rights holder, the location, area, boundaries, type of rights, and the history of the transfer of rights (Zamil et al, 2024; Putra & Winanti, 2024). Land title certificates have long served as proof of these rights, possessing strong evidentiary force. The existence of a certificate provides a sense of security to land rights holders when using, selling, pledging land to financial institutions, and defending their rights in the event of a lawsuit from another party. However, physical certificates still face a number of problems, such as the risk of loss, damage, forgery, manipulation, or use by unauthorized parties.

Land issues are often triggered not only by conflicts between rights holders but also by administrative weaknesses. Inconsistent physical and legal data can open the door to disputes (Silviana, 2021; Rosmidah et al, 2021). For example, the land area stated on the certificate does not match the actual situation on the ground, land boundaries are unclear, or more than one document claims ownership of the same plot of land. In such situations, communities must face lengthy evidentiary processes, significant legal costs, and uncertainty regarding the status of the land they control. These disputes can hinder investment, infrastructure development, business activities, and social order in the community.

Law Number 5 of 1960 concerning Basic Agrarian Principles has established land registration as a crucial instrument for ensuring legal certainty. Article 19 mandates the implementation of land registration throughout Indonesia to provide legal certainty to land rights holders. Land registration encompasses measurement, mapping, land bookkeeping, rights registration, transfer of rights, and the issuance of certificates of title. Thus, land registration serves not only as an administrative activity but also as a form of legal protection for the community.

In practice, the land registration system in Indonesia has evolved gradually in accordance with community needs and technological developments. Government Regulation Number 24 of 1997 concerning Land Registration serves as a crucial foundation for land registration. This regulation stipulates that certificates are issued as proof of title to land rights holders. Certificates have strong evidentiary force regarding physical and legal data as long as the data aligns with those stated in the measurement certificate and land book. However, the evidentiary force of a certificate does not necessarily prevent disputes from arising. Disputes can still arise if there are procedural errors, forgery, administrative defects, or other evidence indicating the rights of another party.

The development of information technology has driven changes in public services, including land services. Digitization is one step to improve the quality of administration, expedite services, reduce the use of paper documents, and increase accuracy in data management (Maulana et al, 2024; Alam et al, 2023). In the land sector, digitalization is not only intended to replace physical certificates with electronic documents. Digitalization is also aimed at building a more integrated, traceable, secure, and easily verifiable land data system by authorized parties.

The electronic certificate policy gained a stronger foundation through Government Regulation Number 18 of 2021 concerning Management Rights, Land Rights, Apartment Units, and Land Registration. Article 84 of this regulation opens the possibility of organizing and implementing electronic land registration. The results of electronic land registration can include data, electronic information, and electronic documents. These data and electronic documents, including printed copies, are recognized as valid legal evidence and constitute an extension of valid evidence under applicable Indonesian procedural law. This provision demonstrates the state's recognition of the use of electronic documents in land administration.

Current regulations for electronic certificates no longer rely on Regulation of the Minister of Agrarian Affairs and Spatial Planning or the Head of the National Land Agency Number 1 of 2021. This regulation has been revoked and declared invalid. The applicable regulation is Regulation of the Minister of Agrarian Affairs and Spatial Planning or the Head of the National Land Agency Number 3 of 2023 concerning the Issuance of Electronic Documents in Land Registration Activities. This regulation governs the issuance of electronic documents for initial land registration, maintenance of land registration data, recording of data and information changes, and media transfer. The regulation also emphasizes the ministry's obligation to implement a reliable, secure, and accountable electronic system.

Electronic certificates can be understood as a modern form of proof of land rights issued and stored through an electronic land system. These certificates contain data regarding the subject of the right, the object of the right, the land area, the location of the land, the type of right, and other information related to the legal status of the land parcel (Juliyanti et al, 2023; Febrianti, 2021). The presence of data in the electronic system allows for faster inspection and verification processes. Land officers, land deed officials, banking institutions, and other interested parties can check the land status before any legal action is taken. This process is crucial to prevent unauthorized land sales, problematic transfers of rights, or the imposition of mortgages on land with unclear status.

From a dispute prevention perspective, electronic certificates hold significant potential. Electronic systems can create a more orderly administrative record because every data change can be recorded in the system. The history of land transfers, data updates, deletions, and encumbrances can be traced more systematically. This can minimize the possibility of duplicate documents, unauthorized data changes, or the use of old certificates after the transfer of rights. Furthermore, the use of electronic systems can help expedite the identification process in cases of data errors or suspected misuse of land documents.

However, the implementation of electronic certificates cannot be viewed as a single solution to eliminate all land disputes. Land disputes have broad roots. Many disputes arise from complex land ownership histories, unclear land boundaries, inheritance conflicts, recognition by indigenous communities, land control by other parties, and discrepancies between legal data and physical conditions on the ground. Electronic certificates can only be effective if the data entered into the system is correct, complete, and obtained through legal procedures. If the initial data is inaccurate, digitization will simply transfer errors from physical documents to the electronic system.

The legal certainty of electronic certificates is also related to data protection and system security. Electronic certificates contain critical information regarding the identity of rights holders and land objects (Wiryana, 2021; Kanza et al, 2024). Therefore, the system must be able to prevent unauthorized access, illegal data changes,

information leaks, and cyberattacks. Digital security is crucial because system disruptions can cause serious losses to rights holders. The public also needs assurance that electronic certificates can be accessed through a clear, easy-to-understand mechanism that does not pose difficulties for groups with limited technological capabilities.

In addition to system security, the evidentiary aspect is crucial in assessing the legal certainty of electronic certificates. Recognition of electronic documents has been legally based in the Electronic Information and Transactions Law. Law Number 1 of 2024, as the second amendment to Law Number 11 of 2008, continues to recognize electronic information and electronic documents as valid legal evidence as long as they are used in an electronic system in accordance with applicable provisions. This recognition strengthens the position of electronic certificates in administrative processes and legal evidence.

Legal certainty regarding electronic certificates is not solely determined by the existence of regulations. Legal certainty also requires consistent implementation by land officials, thorough data validation, procedural transparency, and an easily accessible objection resolution mechanism for the public. The public must have the opportunity to review land data, submit objections to data errors, and obtain explanations if there is a change in land status. In this context, electronic certificates must be positioned as part of an accountable public service system, not simply as a form of administrative transition from paper to digital.

Based on this description, a discussion of the legal certainty of electronic certificates is crucial because this policy lies at the intersection of land law, state administrative law, information technology, and the protection of public rights. Electronic certificates offer the potential to strengthen orderly land administration and prevent disputes through more integrated, easily verifiable data with a clear track record of changes. However, their implementation still requires regulatory readiness, system security, data validity, apparatus capacity, and public understanding. Therefore, this article discusses the legal certainty of electronic certificates in preventing land disputes in Indonesia, specifically regarding the legal basis, evidentiary strength, benefits, and challenges of their implementation.

## **METHOD**

This research employs normative legal research methods with legislative, conceptual, and case-based approaches. The normative legal method was chosen because the research focuses on the regulation, evidentiary power, legal protection, and legal certainty of electronic certificates in the land registration system. The research does not measure public perceptions through surveys or interviews, but rather examines the legal norms governing the issuance, use, security, verification, and dispute resolution related to electronic land documents. The primary focus of the research is directed at the alignment of electronic certificate regulations with the principles of legal certainty, legal protection, prudence, and orderly land administration. Legal certainty in this research is understood as a situation where land rights holders receive clarity regarding their rights status, rights holders, land objects, land boundaries, data change history, and the evidentiary power of electronic documents in the event of a dispute.

The legislative approach is used to examine the hierarchy, substance, and interrelationships of regulations governing land registration and the implementation of the electronic system. The primary legal materials used include Law Number 5 of 1960 concerning Basic Agrarian Regulations, Government Regulation Number 24 of 1997 concerning Land Registration, Government Regulation Number 18 of 2021 concerning Management Rights, Land Rights, Apartment Units, and Land Registration, Law Number 11 of 2008 concerning Electronic Information and Transactions and its amendments, and Regulation of the Minister of Agrarian Affairs and Spatial Planning or the Head of the National Land Agency Number 3 of 2023 concerning the Issuance of Electronic Documents in Land Registration Activities. The selection of Ministerial Regulation Number 3 of 2023 is important because it serves as the basis for regulating the issuance of electronic documents in land registration activities and revokes Ministerial Regulation Number 1 of 2021 concerning Electronic Certificates. Therefore, the term "electronic certificate" in the research title remains the legal issue, while the normative analysis refers to the current legal framework for electronic land documents.

A conceptual approach was used to analyze the concepts of legal certainty, legal protection, electronic evidence, the validity of electronic documents, data security, and the prevention of land disputes. This approach is necessary because the transformation from physical certificates to electronic documents not only involves changes in storage media but also raises new issues regarding data authentication, rights holder identity, official authorization, changes to land data, information access, and the responsibilities of electronic system administrators. The conceptual analysis was conducted by examining the views of agrarian law experts, state administrative law experts, and cyber law experts regarding legal certainty and the validity of electronic documents. The concept of legal certainty was then used as an analytical tool to assess whether the electronic certificate system is able to provide procedural clarity, protection for rights holders, guarantee data integrity, and a correction mechanism for administrative errors or data

manipulation. A case study approach was used to identify patterns of land disputes that could potentially be prevented through the implementation of electronic certificates. The cases studied include disputes over multiple ownership, overlapping land parcels, certificate forgery, discrepancies between physical and legal data, transfer of rights without the rights holder's consent, errors in recording changes in rights, and disputes resulting from weaknesses in land administration. Relevant court decisions will be selected based on their relevance to proving land rights, the validity of land data, the responsibility of land officials, and the protection of rights holders in good faith. The analysis of these decisions is not intended to count the number of disputes, but rather to identify the legal and administrative factors that cause them to arise. The research then compares the factors causing these disputes with features found in electronic systems, such as continuous recording of data changes, document authentication, access control, audit trails, and centralized and integrated data storage.

The research data sources consist of primary legal materials, secondary legal materials, and tertiary legal materials. Primary legal materials include laws and regulations, court decisions, and official documents from land agencies related to electronic land registration. Secondary legal materials include books, scientific journals, legal articles, research results, scientific papers, and expert opinions discussing land law, legal certainty, administrative law, electronic system security, and digital evidence. Tertiary legal materials include legal dictionaries, legal encyclopedias, regulatory indexes, and other supporting sources that assist researchers in understanding the concepts and terminology used. The selection of legal materials was conducted purposively, selecting sources relevant to the issues of legal certainty regarding electronic certificates and land dispute prevention. The legal materials used were also prioritized from official, up-to-date sources that directly relate to the research object.

The legal materials were collected through literature review. Researchers collected, identified, classified, and reviewed various regulations and literature related to electronic certificates. The first stage involved an inventory of all regulations related to land registration, electronic documents, electronic systems, and data protection. The second stage involved sorting regulations based on their status, substance, and relevance to the research. The third stage involved reviewing court decisions and scientific literature to identify legal issues arising in land practices. The fourth stage involved compiling an analysis matrix containing legal issues, legal basis, potential forms of disputes, prevention instruments, and forms of legal protection available to land rights holders.

The analysis of legal materials was conducted qualitatively using descriptive, analytical, and prescriptive methods. Descriptive analysis was used to describe the regulation of electronic certificates, the procedures for issuing electronic documents, the position of electronic documents in land registration, and the potential for disputes that could arise. Prescriptive analysis was used to formulate arguments regarding the form of strengthening legal certainty necessary for electronic certificates to function as a dispute prevention instrument. During the analysis process, researchers interpreted legal provisions through grammatical, systematic, and teleological interpretations. Grammatical interpretation was used to understand the meaning of terms in regulations. Systematic interpretation was used to examine the relationship between land law and electronic information law. A teleological interpretation is used to understand the purpose of establishing an electronic land registration system, namely to create orderly, secure, and accurate services and provide legal protection to the public.

The results of the subsequent analysis are compiled to address two main focuses. First, the position and legal certainty of electronic certificates within the land registration system. Second, how electronic certificates can prevent land disputes through data accuracy, traceability of rights changes, document security, and increased accountability in land administration. Government Regulation Number 18 of 2021 remains a crucial foundation because it regulates land registration and is still in effect. Using this method, the research is expected to produce systematic legal arguments regarding the need for strengthened regulations, data security, administrative oversight, and protection mechanisms for rights holders in the implementation of electronic certificates in Indonesia.

## **RESULTS AND DISCUSSION**

Based on an analysis of electronic land registration regulations, electronic certificates have legal standing as proof of land rights. This legal certainty is based on Government Regulation Number 18 of 2021 concerning Management Rights, Land Rights, Apartment Units, and Land Registration. This regulation opens the way for electronic land registration, including the storage of physical data, legal data, and the issuance of electronic certificates. Furthermore, Regulation of the Minister of Agrarian Affairs and Spatial Planning or the Head of the National Land Agency Number 3 of 2023 regulates the issuance of electronic documents in land registration activities. With this legal basis, electronic certificates are understood not merely as the digitization of physical documents, but as land administration products that have legal force as long as they are issued through legal procedures.

The legal certainty of electronic certificates can be seen from three main aspects: certainty regarding the land object, the rights holder, and the history of legal actions regarding the land. The electronic system enables the Land Office to store integrated data on land parcels, including location, area, boundaries, type of rights, and the identity of the rights holder. This data is stored in a land database so that changes in ownership, encumbrances, parcel divisions, mergers, and transfers of rights can be recorded more orderly (Adinegoro, 2023; Sapardiyono & Pinuji, 2022). This is crucial because land disputes often arise from discrepancies between community documents, data at the Land Office, and the state of land ownership in the field. Electronic certificates can reduce these discrepancies if the data collection and validation process is carried out accurately from the outset.

In terms of dispute prevention, electronic certificates provide benefits through easier verification of document authenticity. With physical certificates, the potential for forgery, duplication, alteration of content, or the use of expired certificates remains. Electronic systems help minimize these risks because the primary data is stored in the official system of the Ministry of Agrarian Affairs and Spatial Planning or the National Land Agency. The community, land deed officials, banks, and other interested parties can verify the status of land rights through available mechanisms. This allows for more careful land purchase and sale transactions because buyers can ensure that the land is not blocked, confiscated, pledged, or in dispute. The use of electronic documents also strengthens the evidentiary process in the event of future disputes.

However, the existence of electronic certificates does not automatically eliminate land disputes. Disputes can still arise if the initial data entered into the system is incorrect, land boundaries have not been agreed upon, there are customary rights claims, or there is abuse of authority in the rights issuance process. Therefore, the quality of physical and legal data is a key element in ensuring legal certainty. The Land Office must carefully examine documents, measure land plots, publish data, and verify the applicant's identity. The public must also be given the opportunity to file objections if any land data is inconsistent. This process is crucial so that digitalization does not simply transfer errors from physical documents to the electronic system.

Another challenge lies in personal data protection and cybersecurity. Electronic certificates contain critical information regarding the identity of the rights holder, the location of the land, and the history of the transfer of rights. If the system is not properly protected, this data has the potential to be misused by irresponsible parties (Elora, 2024; Aprilia & Mubarak, 2024). Therefore, the government must ensure system security, access restrictions, user activity recording, and data recovery mechanisms in the event of a disruption. Furthermore, improving the capacity of land officials and public understanding is also necessary to ensure the correct and equitable use of electronic services. Thus, electronic certificates play a crucial role in establishing legal certainty and preventing land disputes in Indonesia. Their success depends on data accuracy, procedural transparency, system security, and consistent oversight. Electronic certificates can be an effective legal protection instrument if their issuance is based on valid data and accountable land services.

Beyond technical aspects, the legal certainty of electronic certificates must be understood through their evidentiary power. Electronic documents are recognized as valid legal evidence. This recognition provides the basis for the use of electronic information in administrative processes and transaction audits. However, the evidentiary power of electronic certificates remains dependent on data integrity, clarity of document origin, and the system's ability to display the history of document issuance and changes. Therefore, every data update must be recorded in an orderly manner so that it can be traced in the event of objections from rights holders, heirs, buyers, or other parties.

Dispute prevention also requires a link between land data and the service processes carried out by authorized officials. Land Deed Officials, notaries, banking institutions, and prospective buyers need to obtain verification access according to their authority. This access must not be freely available because land information concerns the economic interests and personal data of rights holders. A good system must distinguish between parties merely verifying land status and those authorized to change data. This restriction can prevent unauthorized data changes, unauthorized use of identities, and misuse of information for fraudulent transactions.

The analysis shows that electronic certificates will be effective if implemented in conjunction with improvements in land administration at the field level. Land measurements must be carried out carefully, boundary markings must involve adjacent landowners, and data must be made publicly accessible. This step is especially important in areas with a history of customary land ownership, undivided inheritance, or underhand transactions. In such situations, disputes arise not solely due to the lack of certificates, but also because the legal relationships between the parties have not been clearly documented. Digitalization should strengthen this evidentiary process, not eliminate it.

Dispute prevention also needs to be supported by administrative resolution of objections before issues escalate into court proceedings. The Land Office should provide user-friendly complaint channels, clear examination deadlines, and written explanations of the outcome of complaint handling. This mechanism can help the public correct erroneous data early on. If objections are resolved quickly and transparently, the social and economic costs of disputes can be reduced. Responsive service also increases public trust in the digital transformation of land administration.

Ultimately, electronic certificates should not be positioned merely as a replacement for paper certificates. Electronic certificates should be viewed as part of a reformed land governance system that demands accurate data, transparent procedures, privacy protection, and accountability. The success of this policy is measured by the reduction in disputes, increased orderliness of transactions, and the ease with which communities obtain protection for their land rights. With this approach, electronic certificates have the potential to strengthen legal certainty.

## **CONCLUSION**

The implementation of electronic certificates is a crucial part of land administration reform in Indonesia. Their introduction not only transforms certificate storage media from physical to digital but also improves the state's approach to ensuring data integrity, title histories, and services to land rights holders. This change is also aimed at creating a more accountable and public-service-oriented land administration. The legal certainty of electronic certificates is fundamentally based on the normative recognition of electronic documents in land registration activities, the authority of the Ministry of Agrarian Affairs and Spatial Planning or the National Land Agency to issue them, and the use of a system capable of maintaining data integrity and traceability. Regulations regarding electronic certificates also govern the replacement of certificates, land books, measurement letters, and floor plans with electronic documents, as well as the storage of land registration histories in a database. Based on this, electronic certificates hold the position of proof of title and must be treated legally as long as they are issued through proper procedures and the data conforms to the legal and physical conditions of the land parcel.

In preventing land disputes, electronic certificates can provide tangible benefits through more orderly data updates, easier tracking of changes in rights, and faster verification services. Digital systems reduce reliance on manual filing, which is susceptible to damage, loss, confusion, or falsification. Every change to land data can be documented as a history, allowing interested parties to assess the basis for the transfer of rights, the status of encumbrances, and the accuracy of the information before making a transaction. Electronic certificate verification also helps rights holders, prospective buyers, Land Deed Officials (PPAT), banks, and land officials obtain initial information more efficiently. This can reduce the risk of problematic land sales, duplicate certificate issuance, document manipulation, and disputes arising from data discrepancies.

However, electronic certificates do not automatically eliminate all potential disputes. Disputes can still arise if the initial data entered is inaccurate, land boundaries are unclear, the land ownership history is problematic, or there are unresolved claims from other parties. The threat of data leaks, cyberattacks, misuse of access, and the public's lack of understanding of digital services also need to be addressed. Therefore, legal certainty cannot be achieved solely through technology. Legal certainty must be supported by careful verification of physical and legal data, oversight by land officials, protection of personal data, and accessible complaint and dispute resolution mechanisms.

The government needs to strengthen land data integration between land offices, regional governments, Land Deed Officials (PPAT), courts, banks, and related agencies within their respective jurisdictions. This integration must be accompanied by uniform data validation standards, regular audits, authority-based access control, and data recovery in the event of system disruptions. The Ministry of Agrarian Affairs and Spatial Planning (ATR) or the National Land Agency (BPN) also needs to expand outreach through land offices, villages, sub-districts, and community organizations to ensure the public understands the procedures for issuing, replacing, checking, and protecting their accounts and personal data.

Furthermore, the government needs to provide support services for those lacking digital skills to ensure that the electronic certificate transformation does not create unequal access. Law enforcement must be firm against data falsification, account misuse, and acts that alter land information without authorization. With transparent, secure, accurate implementation that favors the protection of rights holders, electronic certificates can be an effective instrument for strengthening legal certainty and preventing land disputes in Indonesia.

## REFERENCES

- Adinegoro, K. R. R. (2023). Tantangan Implementasi Sertipikat Tanah Elektronik di Kementerian Agraria dan Tata Ruang/Badan Pertanahan Nasional Republik Indonesia. *Jurnal Ilmu Kenotariatan*, 4(2), 130.
- Alam, A., Sriwidodo, J., & Halim, A. N. (2023). Kepastian Hukum Pendaftaran Tanah Melalui Pejabat Ppat Secara Online Penggunaan Aplikasi Kementrian Agraria Dan Tata Ruang/Badan Pertanahan Nasional (Bpn). *Sentri: Jurnal Riset Ilmiah*, 2(9), 3576-3588.
- Aprilia, A., & Mubarak, A. (2024). Tinjauan Hukum terhadap Implementasi Sertifikasi Tanah Elektronik di Indonesia. *Almufi Jurnal Sosial dan Humaniora*, 1(2), 44-51.
- Dewi, R. A. R. M., & Susantio, C. (2024). Penggunaan sertifikat elektronik untuk meningkatkan efisiensi pendaftaran tanah dalam upaya pencegahan mafia tanah. *Jurnal Syntax Admiration*, 5(9), 3382-3392.
- Elora, D. (2024). Problematika Pelaksanaan Alih Media Sertipikat Menjadi Sertipikat Elektronik. *Cendekia: Jurnal Hukum, Sosial Dan Humaniora*, 2(3), 762-773.
- Febrianti, S. (2021). Perlindungan Hukum Terhadap Pemegang Sertipikat Hak Atas Tanah Elektronik. *Indonesian Notary*, 3(3), 9.
- Juliyanti, N. K. E. D., Dharsana, I. M. P., & Ujianti, N. M. P. (2023). Perlindungan Hukum Terhadap Pemegang Sertifikat Tanah Digital Dikaitkan Dengan Keamanan Data Pribadi. *Jurnal Preferensi Hukum*, 4(1), 91-96.
- Kanza, M., Sudirman, M., & Djaja, B. (2024). Peran dan Tanggung Jawab PPAT terhadap Pendaftaran Hak Atas Tanah dalam Proses Penerbitan Sertifikat Tanah Secara Elektronik. *JISPENDIORA Jurnal Ilmu Sosial Pendidikan Dan Humaniora*, 3(3), 234-248.
- Kementerian Agraria dan Tata Ruang atau Badan Pertanahan Nasional Republik Indonesia. 2023. Peraturan Menteri Agraria dan Tata Ruang atau Kepala Badan Pertanahan Nasional Nomor 3 Tahun 2023 tentang Penerbitan Dokumen Elektronik dalam Kegiatan Pendaftaran Tanah.
- Masri, E. (2023). Kebijakan penerbitan sertipikat elektronik pada sistem pendaftaran tanah di Indonesia untuk mewujudkan kepastian hukum. *Krtha Bhayangkara*, 17(1), 157-174.
- Maulana, H., Nugraha, N., Arinda, R., Fikri, M., & Wahanisa, R. (2024). Urgensi Sertifikat Elektronik dengan Pemantauan Berbasis AI untuk Efisiensi Pendaftaran Tanah dan Mitigasi Mafia Tanah di Indonesia. *Journal Customary Law*, 2(1), 9.
- Putra, R. A., & Winanti, A. (2024). Urgensi dan kendala dalam penerbitan dokumen sertifikat tanah elektronik pasca peraturan Menteri ATR/BPN nomor 3 tahun 2023. *Jurnal Usm Law Review*, 7(2), 835-852.
- Republik Indonesia. 1960. Undang Undang Nomor 5 Tahun 1960 tentang Peraturan Dasar Pokok Pokok Agraria.
- Republik Indonesia. 1997. Peraturan Pemerintah Nomor 24 Tahun 1997 tentang Pendaftaran Tanah.
- Republik Indonesia. 2008. Undang Undang Nomor 11 Tahun 2008 tentang Informasi dan Transaksi Elektronik.
- Republik Indonesia. 2021. Peraturan Pemerintah Nomor 18 Tahun 2021 tentang Hak Pengelolaan, Hak Atas Tanah, Satuan Rumah Susun, dan Pendaftaran Tanah.
- Republik Indonesia. 2024. Undang Undang Nomor 1 Tahun 2024 tentang Perubahan Kedua atas Undang Undang Nomor 11 Tahun 2008 tentang Informasi dan Transaksi Elektronik.
- Rosmidah, R., Siregar, E., & Pebrianto, D. Y. (2021). Sosialisasi E-Sertifikat Tanah Dalam Rangka Mewujudkan Kepastian Hukum Di Indonesia. *Jurnal Karya Abdi Masyarakat*, 5(3), 62-69.
- Sapardiyono, S., & Pinuji, S. (2022). Konsistensi perlindungan hukum kepemilikan dan hak atas tanah melalui sertipikat tanah elektronik. *Widya Bhumi*, 2(1), 54-64.
- Silviana, A. (2021). Urgensi sertipikat tanah elektronik dalam sistem hukum pendaftaran tanah di Indonesia. *Administrative Law and Governance Journal*, 4(1), 51-68.
- Wiryana, L. H. (2021). Analisis Swot Sertifikat Elektronik Terhadap Penyelesaian Sengketa Pertanahan Di Indonesia. *Jurnal Hukum Adigama*, 4(2), 4392-4410.
- Zamil, Y. S., Eprilia, F. F., Firdaus, H., Maharso, T., & Rizal, N. (2024). Pemberantasan Mafia Tanah di Indonesia: Dalam Mewujudkan Keadilan dan Kepastian Hukum Bagi Pemilik Tanah. *Jurnal USM Law Review*, 7(3), 1305-1322.