

Digitalization of Land Certification: Legal Perspectives from Islamic, Positive, and Administrative Law

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Abstract

This research examines the digitalization of land certification from an integrative perspective between Islamic law, positive law, and state administration practices in Indonesia. Digital transformation in the land sector is a strategic urgency to address classic challenges such as agrarian conflicts, overlapping ownership, and administrative inefficiencies. However, the success of digitalization does not only depend on technical aspects, but also on the harmonization of the religious values of society, especially those based on Islamic law and the formal legal system of the state. Through a normative juridical approach, this study explores the meeting points and potential conflicts between the principles of *maqāṣid syarī'ah*, the principles of Indonesia law as stated in the Basic Agrarian Regulations (UUPA) and its derivative regulations, as well as the principles of good governance in public administration. The results of the study indicate that digitalization can increase legal certainty and efficiency, but still faces challenges such as the gap in digital infrastructure, legal and technological literacy of the community, and disharmony in regulations related to proof of rights, inheritance, and *waqf*. This research offers a three-dimensional legal integration model as a conceptual solution to realize effective, inclusive, and equitable digitalization of land certification, and is in line with the diversity of social and cultural values of the Indonesian people. This research

offers a multidisciplinary legal framework for digital land governance that bridges Islamic and secular law. It provides a model relevant for countries with plural legal systems or large Muslim populations, and serves as a reference for international agencies in formulating culturally responsive and legally coherent land digitalization policies.

Keywords: Digital Land Certification, Good Governance, Islamic Law, Legal Integration, Positive Law.

Introduction

Land certification is a crucial aspect in land administration that provides legal certainty for land owners.¹ In the context of Indonesia which has a complex land system, digitalization is an important breakthrough to overcome various problems such as overlapping ownership, agrarian conflicts, and inefficiencies in administrative processes.² Since the implementation of Law Number 5 of 1960 concerning Basic Agrarian Regulations (UUPA), the state has attempted to provide legal certainty through land registration. However, after more than six decades, the percentage of registered land in Indonesia is still relatively low compared to the total land area.³ Digital transformation in land administration has significant urgency, especially after the issuance of the Regulation of the Minister of Agrarian Affairs and Spatial Planning/Head of the National Land Agency Number 5 of 2020 concerning Electronic Land Services. Digitalization not only offers efficiency, transparency, and accountability, but also opens up opportunities to resolve long-rooted problems in the land certification system in Indonesia.⁴ On the other hand, the Indonesian people, who are predominantly Muslim, have special considerations in land practices based on Islamic law concerning

¹Alvin Dwi Arianto, "Differences in Land Registration Policies in Indonesia, Malaysia and Singapore: Effectiveness and Its Challenges" 2, no. 1 (2025): 348–61.

²Syaiful Ihsan Hilmi, "Implementation of Electronic Land Registration to Achieve Legal Certainty" 2, no. 1 (2025).

³Sri Hery Susilowati, "Farmers Aging Phenomenon and Reduction in Young Labor: Its Implications for Agricultural Development," *Agro Economic Research Forum* 34, no. 1 (2016): 35–55, <http://124.81.126.59/handle/123456789/7554>.

⁴Hashfi Sanjaya Maulana et al., "The Urgency of Electronic Certificates with AI-Based Monitoring for Efficient Land Registration and Mitigation of Land Mafia in Indonesia," no. 1 (2024): 1–9.

aspects of muamalah, such as the concept of land ownership,⁵ utilization,⁶ and transfer of rights.⁷

An interesting phenomenon to study is how the digitalization of land certification in Indonesia is faced with three different but intersecting legal dimensions, namely Islamic law, national positive law, and state administration practices.⁸ These three dimensions form a complex landscape in the implementation of land policies in Indonesia. The Complete Systematic Land Registration Program (PTSL) launched by the Indonesian government in 2017 through the Regulation of the Minister of Agrarian Affairs and Spatial Planning/National Land Agency (ATR/BPN) of Indonesia Number 6 of 2018, has accelerated land certification through a digital approach.⁹ However, there are significant challenges in its implementation. Data from the Ministry of ATR/BPN shows that by the end of 2023, of the approximately 126 million plots of land in Indonesia, only around 67% have been registered and have certificates.¹⁰ This shows that there are still gaps in the implementation of the land registration system in Indonesia. In addition, a report from the Agrarian Reform Consortium (KPA) noted that in 2022 there were 229 agrarian conflicts with an area of 531,937 hectares involving 208,113 heads of families.¹¹

Another interesting aspect is how digitalization affects traditional practices in land registration which are still strongly imbued with religious values, especially in areas with a Muslim majority population.¹² In some areas,

⁵ K Komaruddin, 'Fairness in the Distribution of Land Ownership in Indonesia Based on Islamic Law Perspective', *Ijtihad: Jurnal Wacana Hukum Islam Dan Kemanusiaan*, 20.2 (2020), pp. 211–34, doi:10.18326/ijtihad.v20i2.211-234.

⁶ I Hayati, F Djamil, and B Edyar, 'Utilization of Land Pawning Objects in Minangkabau in The Perspective of The Scholars of Schools of Thought', *Al-Istinbath: Jurnal Hukum Islam*, 7.2 (2022), pp. 597–616, doi:10.29240/jhi.v7i2.5457.

⁷ Zuman Malaka, 'Land Ownership in the Concept of Indonesian Positive Law, Customary Law and Islamic Law,' *Al-Qanun: Journal of Islamic Legal Thought and Reform* 21, no. 1 (2018): 103–27, <https://doi.org/10.15642/alqanun.2018.21.1.103-127>.

⁸ Muhammad Jufri Dewa et al., "Implementation of The New Separation Theory of Power in the State Institutional System in Indonesia" 6, no. 2 (2024): 432–48.

⁹ Aqsa Rajasa and Slamet Suhartono, "Legal Certainty of Complete Systematic Land Registration (Ptsl) in Madiun Regency," *YUSTISIA MERDEKA: Scientific Journal of Law* 9, no. 1 (2023): 40–47, <https://doi.org/10.33319/yume.v9i1.220>.

¹⁰ Nasridal Patria, "Procurement Competence of Goods/Services for State Civil Apparatus (ASN) in the West Sumatra Provincial Government," *MEA Scientific Journal (Management, Economics, & ...* 5, no. 1 (2021): 253–73, file:///C:/Users/Administrator/Downloads/870-Article Text-2474-1-10-20210204.pdf.

¹¹ Winny Sanjaya, "The Impact of the One Map Policy in the Land Sector on Certificates as Proof of Land Ownership Rights in Indonesia," *LITRA: Journal of Environmental, Spatial, and Agrarian Law* 2, no. 2 (2023): 215–31, <https://doi.org/10.23920/litra.v2i2.1291>.

¹² Syamraeni Hidayatus, Sholichah Adam, and Hafidz Al, "Transformation of Religious Values in the Digital Era: Literature Analysis Based on the Purpose of Hifz Al-' Aql

communities still rely on belief systems and customary laws influenced by Islamic law in land management, such as the concept of waqf,¹³ grants, and inheritance which have specific provisions in Islamic law.¹⁴ Studies on the digitalization of land certification have been carried out from various perspectives. Technical aspects of the implementation of land information systems,¹⁵ Economic impact of digitalization of land services.¹⁶ In the legal dimension, the positive legal aspects in the digitalization of land certification,¹⁷ Islamic legal perspective on land ownership in the digital era.¹⁸

However, there is a significant research gap in a comprehensive analysis that integrates the three dimensions of Islamic, positive, and state administrative law in the context of land certification digitalization. Most previous studies focus on individual dimensions of land certification: for example, legal certainty and institutional readiness;¹⁹ regulatory synchronization under the Omnibus Law;²⁰ and administrative challenges in implementation. However, in practice, Islamic, positive, and administrative law dimensions intersect and mutually shape the formulation and execution of digital land certification policies in Indonesia. The novelty of this study lies in

of Human Life, Including in Terms of Understanding and Practice of Values Between Religious Values and the Digital Era. The Results of Research from Effendi, Lukma,” 2024, 93–109.

¹³ M Huda and A P Supriyadi, ‘Productive Waqf Law Reform: A Solution to Support Indonesian Local Economy amid Contemporary Global Recession’, *MILRev: Metro Islamic Law Review*, 4.1 (2025), pp. 319–59, doi:10.32332/milrev.v4i2.10210.

¹⁴ Tarmizi Tarmizi and Asni Zubair, ‘Tolerance of Islamic Law Towards the Customary Inheritance System in Indonesia,’ *Adhki: Journal of Islamic Family Law* 4, no. 2 (2023): 131–47, <https://doi.org/10.37876/adhki.v4i2.98>.

¹⁵ Sukmo Pinuji, ‘Integration of Land Information System and Spatial Data Infrastructure in the Framework of Realizing One Map Policy,’ *BHUMI: Jurnal Agraria Dan Pertanahan* 2, no. 1 (2016): 48, <https://doi.org/10.31292/jb.v2i1.31>.

¹⁶ Kurnia Rheza Randy Adinegoro, ‘Analysis of Digital Transformation of Public Land Services: Electronic Mortgage Rights at the Ministry of Agrarian Affairs and Spatial Planning,’ *Journal of Public Administration* 19, no. 1 (2023): 26–49, <https://doi.org/10.52316/jap.v19i1.135>.

¹⁷ Gandi Assidiqih and Indri Fogar Susilowati, ‘Legal Review of Electronic Land Certificates as Evidence of Land Ownership in Indonesia,’ *Novum: Jurnal Hukum*, no. Salam 2020 (2021): 57–72.

¹⁸ Fuad Luthfi et al., ‘CHALLENGES AND REGULATIONS IN DIGITAL ASSET INHERITANCE: COMPARATIVE STUDY OF POSITIVE LAW AND ISLAMIC LAW,’ 2024, 2212–25.

¹⁹ Donna Yanti and others, ‘Legal Certainty Dynamics of Land Rights in Electronic Transactions and the Implementation of Digital Land Certificates in Indonesia,’ *Rivayat: Educational Journal of History and Humanities*, 8 (2025), pp. 1471–78, doi:10.24815/jr.v8i2.45449.

²⁰ Iwan Permadi, Diah Maharani, and Md Ahmad, ‘LEGAL PERSPECTIVES ON DIGITALISING LAND CERTIFICATES: Analyzing Synchronization and Harmonization in Indonesia’s Job Creation Law,’ *Jurisdic: Jurnal Hukum Dan Syariah*, 15 (2025), pp. 337–79, doi:10.18860/j.v15i2.28859.

the integrative approach that connects the principles of Islamic law on ownership and transfer of land rights with the provisions of national positive law and state administrative practices within the framework of digitalization. This study also offers a new perspective on how digital technology can bridge the gap between the formal legal system and the religious value system that is still firmly held by the majority of Indonesian society.²¹

This study investigates the digitalization of land certification in Indonesia by examining its implementation at the intersection of Islamic law, positive law (UUPA and its derivatives), and evolving state administrative practices (e.g., PTSL and the electronic land system). Using a normative juridical approach, it analyzes how these three legal dimensions interact identifying harmonies and tensions to assess their impact on legal certainty, especially in a society that still values religious and customary land norms. The research then proposes an integrated model of Islamic ownership principles, statutory land registration provisions, and digital administrative procedures to bridge the gap between formal law and community values. Theoretically, it enriches scholarship on legal pluralism and digital public services; practically, it guides policymakers, the Ministry of ATR/BPN, legal practitioners, and the public in crafting culturally responsive, efficient, and equitable digital land certification systems.

This research adopts a normative legal (doctrinal) approach to examine how Islamic law, positive law, and state administrative practice converge in Indonesia's digital land certification. Emphasizing deductive analysis, it interprets legal norms from Qur'anic and ḥadīth texts to the Basic Agrarian Law (Law No. 5/1960), Government Regulation No. 24/1997, the E-Transactions Law (Law No. 11/2008 + 19/2016), and ATR/BPN regulations on PTSL alongside ministerial decrees and international instruments. Secondary data were gathered through systematic library research in both print and digital repositories, official ATR/BPN portals, and MUI fatwa databases. To ground the doctrinal analysis in practice, the implementation of PTSL and the electronic land system was observed, and contemporary scholarly opinions on digital land transactions were reviewed

A qualitative-descriptive analysis classified materials under the three legal dimensions, then applied comparative and critical techniques to identify points of alignment, tension, and regulatory gaps. The findings were synthesized into a conceptual framework for integrated, culturally sensitive digital certification. This research is informed by theories of legal certainty, maqāṣid al-sharī'ah (*ḥiḍ al-māl*), Friedman's legal system model, e-

²¹Herlambang P Wiratraman et al., "Revisiting Law and Social Justice in Digital Transformation" 52, no. November (2023): 280–91.

government,²² legal pluralism,²³ and legal effectiveness, ensuring both theoretical rigor and operational clarity for international readers.

Discussion

Conceptualization of Land Certification Digitalization in Three Legal Dimensions

The digitalization of land certification in Indonesia is at the intersection of three legal dimensions that influence and interact with each other²⁴. In the perspective of Islamic law, the concept of land ownership is based on the principle that Allah SWT is the true owner of everything, while humans are only given the mandate to manage and utilize it in accordance with sharia provisions.²⁵ This principle is reflected in the concept of *ihya al-mawat* (bringing dead land to life), *haqq al-intifa* (right of utilization), and *istikhlaf* (management as a caliph).²⁶ Digitalization in this context can be seen as a *wasilah* (means) to achieve *maqāṣid* syar'ies, especially in property protection (*charity*) through the guarantee of legal certainty in land ownership. From the perspective of positive Indonesian law, the digitalization of land certification is an implementation of the mandate of the UUPA and its derivative regulations which aim to provide a guarantee of legal certainty in land registration.²⁷ Article 19 of the UUPA explicitly affirms the government's obligation to organize land registration, which was then operationalized through PP No. 24 of 1997 concerning Land Registration. Digital transformation in this context is an integral part of the state's efforts to realize orderly land administration as mandated in laws and regulations.²⁸

²² Parul Gupta and others, 'Trust, Risk, Privacy and Security in e-Government Use: Insights from a MASEM Analysis', *Information Systems Frontiers*, 27.3 (2025), pp. 1089–105, doi:10.1007/s10796-024-10497-8.

²³ Y Sopyan, 'Urgency of Legal Pluralism Study for Students of Sharia and Law Faculty After Changes of Academic Degree', *De Jure: Jurnal Hukum Dan Syariah*, 12.2 (2024), pp. 156–75, doi:10.18860/j-fsh.v12i2.10186.

²⁴ Muhammad Japar et al., "Analysis of Community Readiness in the Implementation of the Electronic Land Certification Program: A Review of Legal Sociology," *Rechtsregel: Journal of Legal Studies*, no. 1 (2024): 81–90, <https://doi.org/10.32493/rjih.v7i1.43502>.

²⁵ Habib Dolgun, 'Property Rights According to the Quran and Sunnah and Their Economic Implications for Contemporary Societies', *ISRA INTERNATIONAL JOURNAL OF ISLAMIC FINANCE*, 8 (2016), pp. 93–121.

²⁶ Sri Wahyuni, 'The Expediency Principle of Inanimate Land: A Study of *Ihya*' al-Mawat in Classical Fiqh and Land Reform in Indonesian Agrarian Law', *Al-Maṣāhib: Jurnal Perbandingan Hukum*, 12 (2024), pp. 70–94, doi:10.14421/al-mazaahib.v12i1.3663.

²⁷ Arie Lestario and Erlina Erlina, "Land Registration System That Provides Legal Protection for Land Title Certificate Holders in Indonesia," *Notary Law Journal* 1, no. 1 (2022): 1–30, <https://doi.org/10.32801/nolaj.v1i1.1>.

²⁸ Rana Tatsbita Noer and Harry Nugroho, "DIGITAL TRANSFORMATION OF LAND REGISTRATION: CHALLENGES AND EFFECTIVENESS OF

Meanwhile, from the perspective of state administration, the digitalization of land certification is a manifestation of bureaucratic reform and the application of good governance principles in public services. The implementation of e-government in the land sector is aimed at increasing efficiency, transparency, and accountability of services, as well as reducing the practices of corruption, collusion, and nepotism which are often obstacles in conventional land administration processes.²⁹ The interaction of these three legal dimensions forms a complex but complementary conceptual framework in understanding the digitalization of land certification in Indonesia.³⁰ Interestingly, these three dimensions are not always in conflict, but often reinforce each other. The principle of *maṣlahah* (benefit) in Islamic law, for example, is in line with the principle of benefit in positive law and efficiency in state administration. Digitalization, in this context, becomes an instrument that facilitates the harmonization of the three legal dimensions in land certification practices in Indonesia.

Implementation of Land Certification Digitalization Program in Indonesia

The implementation of digitalization of land certification in Indonesia has experienced significant developments in the last decade.³¹ The Complete Systematic Land Registration Program (PTSL) launched in 2017 is an important milestone in accelerating the digitalization of land administration in Indonesia.³² This program aims to provide legal certainty and legal protection for community land rights in a certain, simple, fast, smooth, safe, fair, equitable, and open, as well as accountable manner.

From 2017 to 2023, the implementation of the Complete Systematic Land Registration (PTSL) programme in Indonesia has demonstrated consistent progress, marked by a high level of achievement across all years. Beginning with a target of 5 million parcels in 2017 and increasing

IMPLEMENTING THE SENTUH TANAHKU APPLICATION IN THE ERA OF SOCIETY 5.0” 1, no. 6 (2024): 250–61.

²⁹ Hayk Khachatryan and others, ‘Landscape Aesthetics and Maintenance Perceptions: Assessing the Relationship between Homeowners’ Visual Attention and Landscape Care Knowledge’, *Land Use Policy*, 95 (2020), p. 104645, doi:<https://doi.org/10.1016/j.landusepol.2020.104645>.

³⁰ Edwin Khristian, Herman Karamoy, and Novi Swandari Budiarmo, ‘Risk Management Analysis in Realizing Good Corporate Governance (Case Study at PT Angkasa Pura I (Persero))’, *Journal of Accounting and Auditing Research “GOODWILL”* 12, no. 2 (2021): 112–28.

³¹Ezi Syafitri, Jatmiko Yogopriyatno, and Abdul Aziz Zulkhakim, ‘Readiness for the Implementation of Electronic Certificate Issuance Services at the BPN Regional Office of Bengkulu Province’, 2024, 196–215.

³² Anne T Byrne and others, ‘A Factor-Income Approach to Estimating Grassland Protection Subsidy Payments to Livestock Herders in Inner Mongolia, China’, *Land Use Policy*, 91 (2020), p. 104352, doi:<https://doi.org/10.1016/j.landusepol.2019.104352>.

incrementally each year to reach 14 million in 2023, the realisation figures closely matched the targets, ranging from 93.13% to 98.97%, with a brief decline in 2020 attributable to the COVID-19 pandemic. Correspondingly, the government steadily increased the programme's budget allocation, from IDR 1.75 trillion in 2017 to IDR 4.1 trillion in 2023, underscoring its sustained commitment to advancing land registration efforts. This upward trend indicates that the implementation of the PTSL programme has been largely successful in meeting its objectives. The temporary dip in achievement during the pandemic did not significantly hinder the overall trajectory, and the steady increase in budget allocation highlights the government's strong dedication to accelerating the digitalisation of land certification in Indonesia.³³

In addition to PTSL, the Ministry of ATR/BPN has also developed various digital platforms to support the digitalization of land certification, including the National Land Management Information System (SIMTANAS), Computerized Land Office (KKP), and Electronic Land Services (e-Land Services). These platforms are integrated into a digital ecosystem that allows the public to access land services online, from land registration to checking land information. However, the implementation of land certification digitalization in Indonesia still faces various challenges. The disparity in digital infrastructure between urban and rural areas is a major obstacle to equalizing access to digital land services.³⁴ In addition, the relatively low digital literacy of the community, especially in rural and remote areas, also hampers the optimization of the use of digital platforms in the land certification process.³⁵

Harmonization and Potential Conflict in Three Dimensions of Law

Analysis of the implementation of digitalization of land certification in Indonesia reveals points of harmonization and potential conflicts between the three legal dimensions that are the focus of this research:³⁶

First, there is harmony between the principles of *maṣlaḥah* in Islamic law with the aim of land registration in Indonesian positive law, especially in providing legal certainty for land owners. Digitization of land certification that accelerates and simplifies the registration process is in line with the concept of *maṣlaḥ* which emphasizes the realization of benefit and the avoidance of

³³ Byrne and others, 'A Factor-Income Approach to Estimating Grassland Protection Subsidy Payments to Livestock Herders in Inner Mongolia, China'.

³⁴Asep Koswara et al., "Digitalization of the Economy in Rural Areas: Examining the Digital Infrastructure Gap in Indonesia"05 (2024).

³⁵Journal of Community Service and Global, "Available Online at: <https://jurnaluniv45sby.ac.id/index.php/cakrawala>" 4, no. 3 (2025).

³⁶Nurul Huda and Harimukti Wandebori, "Problems of Digital Land Certification Transformation," Marcapada: Journal of Land Policy 1, no. 1 (2021): 17–28, <https://doi.org/10.31292/jm.v1i1.7>.

harm.³⁷ In the context of state administration, the efficiency and transparency offered by the digital system are also in line with the principles of good governance that are the basis for bureaucratic reform in Indonesia. Second, the concept of akad (agreement) in Islamic law which requires clarity of the object of the transaction (*ma'lum*) is strengthened through a digitalization system that provides detailed information about land objects. The Land Information System developed by the Ministry of ATR/BPN allows for more accurate identification of land objects, which is in line with the principle of object clarity in muamalah contracts. This also contributes to legal certainty which is the goal of land registration in Indonesian positive law. Third, the principle of transparency in state administration implemented through the digitalization of the land system is in line with the values of honesty (*sidiq*) and mandate in Islamic law. A digital system that allows real-time tracking of land certification application status reduces the potential for corrupt practices and manipulation in the land administration process, which is in line with the principles of anti-corruption in Islamic law and good governance in state administration.³⁸

Potential Conflict

Although there are various points of harmonization, the implementation of digitalization of land certification also presents several potential conflicts between the three dimensions of law. First, conflicts can arise in terms of proving land ownership, where Islamic law recognizes ownership based on physical control (*hiyazah*) and land management (*ihya al-mawat*), while the land registration system in Indonesian positive law emphasizes formal evidence in the form of certificates. Digitization that relies on formal data can ignore the aspect of physical control recognized in Islamic law, especially in areas with strong customary practices. Second, the issue of land waqf in the context of digitalization also has the potential to cause conflict.³⁹ In Islamic law, waqf is permanent and non-transferable, while in digital land administration practices, there is a possibility of data changes that can have implications for the status of waqf. Although Law No. 41 of 2004 concerning Waqf has regulated the registration of waqf land, the integration of the waqf system within the framework of national land certification digitalization still requires improvement to avoid conflicts with waqf principles in Islamic law. Third, conflicts can also arise in terms of the transfer of land rights through inheritance, especially related to the distribution of inheritance

³⁷Raden Ayu Rani Mutiara Dewi and Catherine Susantio, "The Use of Electronic Certificates to Improve the Efficiency of Land Registration in an Effort to Prevent Land Mafia," *Jurnal Syntax Admiration* 5, no. 9 (2024): 3382–92, <https://doi.org/10.46799/jsa.v5i9.1441>.

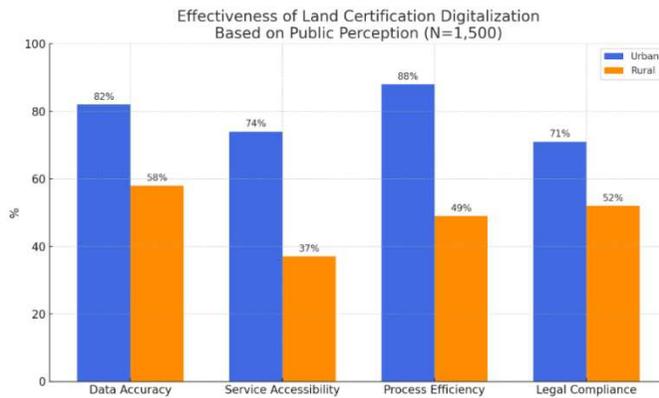
³⁸Syarifaatul Hidayah, "Challenges and Opportunities of Electronic Certificates in Land Registration Reform in the Digital Era." 1, no. 6 (2024): 186–99.

³⁹Nurul Nurul Faizah Rahmah, "Management of Waqf Development in the Digital Era in Optimizing Waqf Potential," *Al-Awqaf: Journal of Waqf and Islamic Economics* 14, no. 2 (2022): 139–54, <https://doi.org/10.47411/al-awqaf.vol14iss2.153>.

according to Islamic law which is different from the provisions in Indonesian positive law. The digitalization system that generally refers to formal legal provisions can ignore specific aspects in the distribution of inheritance according to Islamic law, especially in areas that still strongly uphold Islamic inheritance traditions.⁴⁰

Analysis of the Effectiveness of Digitalization in Enforcing Land Legal Certainty

The effectiveness of land certification digitalization in enforcing legal certainty of land can be analyzed through four main indicators, namely data accuracy, service accessibility, process efficiency, and level of legal compliance. Based on survey data conducted on 1,500 respondents in 15 provinces in Indonesia in 2022-2023, a picture was obtained regarding public perception of the effectiveness of land certification digitalization in enforcing legal certainty of land⁴¹.



Source: Data processed by the author, 2025

Based on the graph above, there is a significant gap in the effectiveness of land certification digitalization between urban and rural areas. In urban areas, digitalization tends to be more effective in enforcing legal certainty of land, with the highest percentage in the aspect of process efficiency (88%) and data accuracy (82%). Meanwhile, in rural areas, the effectiveness of digitalization is relatively lower, with the lowest percentage in the aspect of service accessibility (37%).

The gap can be explained by several factors. First, the disparity in digital infrastructure between urban and rural areas affects the accessibility of digital

⁴⁰Vadlya Maarif et al., “Expert System for Inheritance Distribution According to Islamic Law Based on Android,” *Indonesian Journal on Software Engineering* 7, no. 2 (2021): 230–36.

⁴¹Rizky Rahajeng Tania Putri et al., “Effectiveness of Implementing E-Land Certificate Registration in the Digitalization Era,” *Proceeding of Conference on Law and Social Studies*, 2023, <http://prosiding.unipma.ac.id/index.php/COLaS>.

land services. Limited internet networks and information technology facilities in rural areas are the main obstacles in implementing digital systems. Second, the relatively lower level of digital literacy in rural communities compared to urban communities also affects their ability to access and utilize digital land services.⁴² Third, cultural and traditional factors that are still strong in rural areas, including land ownership practices based on customary law and Islamic law, are often poorly accommodated in digital systems that tend to be oriented towards positive legal formalities. Nevertheless, digitalization of land certification continues to make a positive contribution to increasing legal certainty in land in Indonesia, especially in terms of process efficiency and data accuracy. The digital system allows for faster and more accurate land certification processing, and reduces the potential for data manipulation that is often a problem in conventional systems. This is in line with the purpose of land registration as mandated in Article 19 of the UUPA, namely to guarantee legal certainty over land ownership.

Islamic Law Perspective on Land Certification Digitalization

The digitalisation of land certification, when viewed through the lens of Islamic law, may be analysed using key *mu'āmalah* principles related to the ownership and transfer of land rights.⁴³ Islam recognises the concept of private ownership (*milk al-khāṣṣ*) over land, albeit within the boundaries of divine sovereignty ultimate ownership belongs solely to Allah SWT, while humankind functions as a trustee (*istikhlāf*) entrusted to utilise and manage land responsibly. Classical jurisprudence (*fiqh*) offers foundational doctrines on land tenure, such as *iḥyā' al-mawāt* (reviving dead land), *iqṭā'* (state allocation of land), and the preservation of public or conservation areas. The digital transformation of land certification may thus be interpreted as a form of *maṣlahah mursalah* a public interest initiative not directly addressed in canonical texts, yet permissible so long as it serves the community's welfare without contravening Shariah principles.

Various components of Indonesia's land certification digitalisation initiative can be aligned with foundational Islamic legal maxims. First, the move to online registration reflects the principle of *taysīr* (facilitation), encouraging accessibility and ease in administrative dealings. This principle is widely endorsed in both classical and contemporary *fiqh*, as supported by the Qur'anic

⁴²Andi Asy'hary et al., "Efforts to Improve Community Digital Literacy Through Computer Training Programs in Remote Villages," *Community Development Journal* 4, no. 1 (2023): 654–61.

⁴³ PFN Wibowo, "Legal Certainty and Protection in Investment in Indonesia Reviewed from Law Number 25 of 2007 Concerning Investment," *UNES Law Review* 6, no. 2 (2023): 4414–28, <https://review-unes.com/index.php/law/article/view/1278%0Ahttps://review-unes.com/index.php/law/article/download/1278/980>.

verse: “*Allah intends ease for you, not hardship*” (Qur’an, 2:185). Second, digital verification mechanisms align with the principle of *tabayyūn* (verification), which stresses the importance of data accuracy and truthfulness before action, rooted in *Qur’an* 49:6. However, the effectiveness of this component hinges on whether the system incorporates robust validation processes, to prevent misinformation and uphold justice.

Furthermore, the adoption of electronic certificates serves the principle of *ḥujjah* (proof), enabling users to secure verifiable ownership documentation, which has historically been crucial in Islamic land contracts. The establishment of a centralised database corresponds strongly with *ḥijz al-māl* (protection of wealth), one of the five overarching objectives (*maqāṣid*) of Shariah, by safeguarding land records against damage, fraud, or loss. Online payments, meanwhile, embody *tājil* (acceleration), facilitating efficiency in financial transactions, provided that transparency and consent (*tarāḍin*) are preserved.

Notably, challenges remain in the domain of online dispute resolution, which currently shows low compliance with the principle of *iṣlah* (reconciliation).⁴⁴ Islamic tradition, dispute settlement is ideally conducted through direct engagement, mutual consultation (*shūrā*), and reconciliation by impartial parties. Digital interfaces often lack the nuanced human interaction and community-based mediation mechanisms that Islamic jurisprudence prefers. Nonetheless, contemporary *ijtihād* allows for adaptation. Institutions such as the Indonesian Council of Ulama (MUI) have issued fatwas on electronic halal certification, establishing Shariah legitimacy for digital processes under certain conditions (e.g. Fatwa DSN-MUI No. 24/DSN-MUI/IV/2002). Similarly, the International Islamic Fiqh Academy (Majma‘ al-Fiqh al-Islāmī) under the Organisation of Islamic Cooperation (OIC) has released resolutions supporting electronic transactions in *mu‘āmalāt*, which can be extended to the domain of land governance.⁴⁵ In summary, the digitalisation of land certification demonstrates significant alignment with Islamic legal principles, particularly those promoting transparency, facilitation, and protection of property. While certain elements especially dispute resolution require contextual Shariah-compliant innovation, the broader framework of

⁴⁴Deddi Fasmadhy Satiadharmanto et al., “ARBITRATION AND THE BALANCE BETWEEN FAIRNESS AND EFFICIENCY: QURAN PERSPECTIVE'AN ON DISPUTE RESOLUTION 1 ARBITRATION AND BALANCE BETWEEN JUSTICE AND EFFICIENCY: A QUR'AN PERSPECTIVE ON DISPUTE RESOLUTION Dispute Resolution Through Arbitration Is Very Relevant In Various Communities, Disputes With Justice. These 7 Things Indicate That Conflict Resolution Must Be Done Dispute Resolution, Because It Is Usually Faster And More Flexible Than Formal Litigation In,” no. 2002 (2024): 23–40, <https://doi.org/10.25041/flatjustisia>.

⁴⁵y Arifin Habibi et al., “Digital Transformation of Land Administration: Implementation and Challenges of Electronic Certificates in Indonesia,”2025.

digital land administration is both supportable and adaptable within the scope of modern Islamic jurisprudence.

Transformation of Land Administration Practices in the Digital Era

The transformation of land administration practices in the digital era is marked by a shift from conventional paper-based systems to electronic data-based systems.⁴⁶ This shift not only changes the technical aspects of the land administration process, but also has an impact on institutional, regulatory, and work culture aspects. In terms of institutions, digital transformation has driven the restructuring of the organization and work procedures of the Ministry of ATR/BPN, with the establishment of special units that handle land digitalization, such as the Directorate of Land Information and Technology. In addition, digital transformation has also changed the pattern of interaction between land institutions and other stakeholders, such as notaries, banks, and the community, through the development of an integrated service system.

In terms of regulation, digital transformation is marked by the issuance of various regulations that provide a legal basis for the implementation of land certification digitalization. Regulation of the Minister of ATR/BPN Number 5 of 2020 concerning Electronic Land Services, for example, is the legal basis for the development of electronic systems in land services. This regulation is equipped with various technical instructions and standard operating procedures that ensure the implementation of digitalization in accordance with the principles of good governance. In terms of work culture, digital transformation changes the mindset and work patterns of land officials, from a rigid procedural orientation to a more flexible results and service orientation. This is in line with the principles of New Public Management which emphasize efficiency, effectiveness, and responsiveness in public services.

This transformation also has an impact on the pattern of interaction between society and land institutions.⁴⁷ Previously, people had to come directly to the Land Office to take care of land certification, but now most of the process can be done online through a digital platform provided by the Ministry of ATR/BPN. This not only increases service efficiency, but also reduces the potential for illegal levies and brokering practices that are often a problem in conventional systems.

⁴⁶ M Sudirman, "Increasing Public Trust Through the Implementation of Electronic Land Certificates: Security Challenges and Solutions in Notary Practice," *Gudang Jurnal Multidisiplin Ilmu* 2 (2024): 276–82, <https://gudangjurnal.com/index.php/gjmi/article/view/763%0Ahttps://gudangjurnal.com/index.php/gjmi/article/download/763/805>.

⁴⁷ Mira Novana Ardani, "The Steps of the Ministry of ATR/BPN in Facing Digital Disruption: In a Review of Legal Philosophy," *Gema Keadilan* 9, no. 1 (2022): 19–35, <https://doi.org/10.14710/gk.2022.14551>.

Legal Implications of Digitalization for Proving Land Rights

Digital transformation in land certification has significant legal implications for the land rights proof system in Indonesia.⁴⁸ In the conventional system, physical land certificates are the main evidence that has legal force as "strong evidence" as stated in Article 32 of PP No. 24 of 1997. With digitalization, questions have arisen regarding the legal position of electronic certificates and digital data in the land rights proof system. Based on the perspective of positive Indonesian law, the legitimacy of electronic documents has been recognized through Law No. 11 of 2008 in conjunction with Law No. 19 of 2016 concerning Information and Electronic Transactions (ITE). Article 5 paragraph (1) of the ITE Law states that "Electronic Information and/or Electronic Documents and/or printouts thereof constitute valid legal evidence." This provision is the legal basis for the recognition of electronic land certificates as valid evidence in proving land rights.⁴⁹

However, the implementation of electronic certificates in the land rights proof system still faces several legal issues. First, related to the security and authentication of electronic documents. Although the ITE Law has regulated electronic signatures as a means of authentication, its implementation in the context of electronic land certificates requires more specific and technical arrangements. Second, related to the obligations of electronic system organizers in ensuring the security, reliability, and availability of the system, as regulated in Article 16 of the ITE Law. Failure to fulfill these obligations can have implications for the validity of electronic land data.

Table 1. Comparison of the Evidential Strength of Conventional and Electronic Certificates

Aspects of Proof	Conventional Certificate	Electronic Certificate
Legal basis	PP No. 24/1997, UUPA	PP No. 24/1997, UUPA, ITE Law
Power of Proof	Strong evidence	Strong evidence (with conditions)
Authentication	Official signature, stamp	Electronic signature, digital certificate

⁴⁸Ardani.

⁴⁹ C Aman, 'LEGAL ANALYSIS REGARDING DEED RECOGNITION OF DEBT WHICH IS FOLLOWED BY AUTHORITY TO SELL WITH GUARANTEE OF LAND RIGHTS: Case Study of Cassation Voniss Number: 1011/K/Pdt/2014', *Jurnal Ilmiah Mizani*, 9.2 (2022), pp. 274–84, doi:10.29300/mzn.v9i2.2922.

Protection from Counterfeiting	Watermark, hologram	Encryption, blockchain
Security Challenges	Physical theft, forgery	Cyber attacks, data manipulation
Accessibility as Evidence	Need to be physically brought to court	Electronically accessible

Source: Data processed by the author, 2025

The comparison between conventional and electronic land certificates, as shown in Table 1, highlights significant distinctions in terms of evidentiary strength, administrative efficiency, and legal certainty. However, these differences must be examined through a more comprehensive legal framework. From the perspective of positive law, digital certificates are governed by Article 5 and Article 6 of the Indonesian Law No. 11 of 2008 concerning Electronic Information and Transactions (ITE Law), which affirm that electronic documents and signatures are legally valid and possess equivalent legal force to conventional documents, provided they meet the requirements of integrity and authenticity. This legal recognition establishes a foundation for electronic certificates to serve as valid evidence in legal disputes.

From the standpoint of evidentiary theory, digital land certificates can be categorised under written evidence (*akta tertulis*) as stipulated in the Indonesian Civil Procedure Code (HIR/RBg). Their probative value depends on their ability to fulfil the principle of *authenticity* and *reliability*. The use of blockchain technology, if adopted, could further enhance the trustworthiness and immutability of such documents, thereby strengthening their evidentiary value.

In Islamic legal tradition, the principle of *bayyinah* (evidence) encompasses both oral testimony (*shahadah*) and written documentation (*kitabah*), provided the latter can establish *yaqin* (certainty) in the judge's conviction. The shift towards digital documentation must therefore fulfil the ethical and epistemological standards set by Islamic jurisprudence, particularly in ensuring transparency (*tabayyun*), ease of process (*taysir*), and the avoidance of harm (*dar' al-mafasid*). Academic discussions have further underscored the increasing acceptance of digital evidence in contemporary legal systems. For instance, studies by legal scholars such as Susanti Adi Nugroho (2021) argue that the implementation of digital land certificates aligns with international trends in legal digitalisation, especially when integrated with secure technologies such as biometric authentication and encrypted databases.

The implementation of land certification digitalization in Indonesia faces various challenges that require strategic and comprehensive solutions.⁵⁰ Based on the analysis of the implementation of the PTSL program and the digital land platform, several major challenges were identified along with their strategic solutions.

One of the significant challenges in implementing digitalization of land certification is the digital infrastructure gap between urban and rural areas⁵¹. Data as of 2023 shows that internet penetration in urban areas reached 78%, while in rural areas it was only 45%. *Penetrasi dan Perilaku Pengguna Internet Indonesia 2023*.⁵² This disparity has implications for the unequal accessibility of digital land services. Strategic solutions to this challenge include: (1) development of information and communication technology (ICT) infrastructure focused on underdeveloped, outermost, and remote areas; (2) implementation of a land service model that combines online and offline approaches (hybrid service model) to accommodate people with limited internet access; and (3) strategic partnerships with the private sector in developing digital infrastructure through the Corporate Social Responsibility (CSR) or Public-Private Partnership (PPP) scheme.

Relatively low digital literacy, especially among rural communities and the elderly, is an obstacle to optimizing the use of digital land platforms⁵³. Based on a survey conducted in 2023, only 42% of respondents in rural areas stated that they were able to use digital land applications without assistance. *Penetrasi dan Perilaku Pengguna Internet Indonesia 2023*.⁵⁴ Strategic solutions to this challenge include: (1) implementing a digital literacy program that is integrated with the land certification program; (2) establishing digital land cadres at the village level whose job is to help the community access digital land services; and (3) developing a user interface that is user-friendly and intuitive, so that it can be used by people with varying levels of digital literacy.

⁵⁰Siti Asiah, Imam Mutaqin, and N Maghfiroh, "Analysis Study of Cognitive Abilities of Dyslexic Children in Reading Skills at Miftahul Ulum Jarak Kulon Jogoroto Jombang Elementary School," *Journal of Islamic Elementary Education* 3, no. 2 (2021): 1–15, journal.unipdu.ac.id/index.php/JPDI/index.

⁵¹Muhamad Dimas, Mohammad Rezza Fahlevvi, and Sumbawa Regency Government, "Eliminating Digital Divide in the Implementation of E-Government in Sumbawa Regency" 6, no. 2 (2024): 194–215.

⁵²Asosiasi Penyelenggara Jasa Internet Indonesia, *Survei Internet Service Provider Industry & Market Profile 2023*, 30 Mach 2023, accessed from <https://survei.apji.or.id/survei/2023>

⁵³Dolopo District and Madiun Regency, "Smart Digital Literacy of Village Communities" 04, no. 01 (2025): 41–51.

⁵⁴Asosiasi Penyelenggara Jasa Internet Indonesia, *Survei Internet Service Provider Industry & Market Profile 2023*, 30 Maret 2023, diakses dari <https://survei.apji.or.id/survei/2023>

Harmonization of Regulations

Digital transformation in land certification requires adequate regulatory harmonization, not only in the land sector but also in the fields of information technology, data protection, and electronic transactions⁵⁵. Until 2023, there are still inconsistencies between land regulations and regulations in the field of information technology, especially regarding the status of electronic documents. Strategic solutions to this challenge include: (1) revision of land regulations to accommodate the digital dimension, especially PP No. 24 of 1997 concerning Land Registration; (2) development of specific technical regulations governing security standards, verification procedures, and data storage protocols in the digital land system; and (3) harmonization of land regulations with the ITE Law and its derivative regulations to ensure legal certainty for electronic documents in the context of land.

Data Security and Privacy

Digital transformation presents data security and privacy risks that need to be anticipated.⁵⁶ Based on a report by the National Cyber and Crypto Agency (BSSN), the government sector is among the top three targets of cyber attacks in Indonesia in 2022, with 1,216 cybersecurity incidents. Strategic solutions to this challenge include: (1) implementing a multilayer security system with a combination of encryption, multifactor authentication, and intrusion detection; (2) developing a comprehensive cyber risk management protocol, including risk identification, analysis, mitigation, and recovery; and (3) increasing human resource capacity in the field of cybersecurity through training and certification for officials who manage digital land systems.

Three Dimensional Integration Model of Law in Land Certification Digitalization

Based on the analysis of the intersection of three legal dimensions in the context of land certification digitalization, This study proposes a conceptual integration model that synthesises three core legal dimensions Islamic law, positive law, and state administrative practice within the framework of digital land certification in Indonesia. Drawing upon a systems-theoretical approach, the model acknowledges the complexity of legal pluralism in the country, where diverse legal traditions interact within a

⁵⁵Aprilia, Amanda, and Asnawi Mubarak, "Legal Review of the Implementation of Electronic Land Certification in Indonesia. Journal: Almufi Jurnal Sosial Dan Humaniora," Almufi Jurnal Sosial Dan Humaniora 1, no. 2 (2024): 44–51.

⁵⁶ Parul Gupta and others, "Trust, Risk, Privacy and Security in e-Government Use: Insights from a MASEM Analysis", *Information Systems Frontiers*, 27.3 (2025), pp. 1089–105, doi:10.1007/s10796-024-10497-8.

dynamic and often contested governance space. The model comprises three principal components: substantive, structural, and cultural.

The substantive component concerns the harmonisation of foundational legal norms related to land ownership, transfer of rights, and evidentiary mechanisms. From the perspective of Islamic law, this includes the integration of key principles such as *maṣlahah* (public benefit), *‘adl* (justice), and *amānah* (trustworthiness). These align closely with the objectives of *maqāṣid al-ṣyari‘ah*, particularly *ḥifẓ al-māl* (protection of wealth) and *ḥifẓ al-ḥaqq* (preservation of rights). In parallel, positive law contributes the principles of legal certainty, utility, and distributive justice, while administrative law introduces the values of transparency, efficiency, and accountability. This synthesis ensures that legal reform is not merely procedural, but also normative, embedding ethical legitimacy alongside technical precision.

The structural component addresses institutional arrangements required to support digital transformation in land governance. It calls for cooperation between formal state institutions such as the Ministry of Agrarian Affairs and Spatial Planning/National Land Agency (ATR/BPN) and the State Administrative Courts and religious or semi-autonomous bodies like the Indonesian Waqf Board and Religious Courts, particularly in matters involving waqf land and Islamic inheritance. Additionally, regional governments and customary village structures serve as key intermediaries in bridging top-down policy with local socio-legal realities. This multi-tiered governance framework reflects the core insights of legal pluralism theory, which asserts that multiple normative orders coexist and must be harmonised through institutional design rather than coerced uniformity.

The cultural component recognises that legal transformation cannot be achieved without shaping the legal consciousness of the public. This involves fostering a supportive legal culture that incorporates religious values, legal literacy, and civic responsibility. Islamic religious values and fatwas such as those issued by the Indonesian Ulema Council (MUI) or the OIC’s *Majma‘ al-Fiqh al-Islāmī* can offer normative justification for digital reforms, particularly when grounded in the broader *maqāṣid* framework. At the same time, awareness of legal rights and procedural knowledge must be disseminated through public education campaigns. State bureaucracies are likewise called to internalise a culture of professional ethics and public service, ensuring that digital transformation is human-centred rather than solely technocratic.

The implementation of this model necessitates coordinated reforms at multiple levels. At the policy level, revisions to statutory land law are required to incorporate Islamic legal dimensions and community-based customary norms. At the institutional level, restructuring of land offices and cross-sector collaboration must be promoted to facilitate inter-legal cooperation. At the

operational level, standardised procedures and interoperable technologies should be developed to enable integration across digital platforms.

Importantly, this model is designed to accommodate Indonesia's legal and cultural diversity. In regions with strong Islamic traditions such as Aceh and parts of Java and Sumatra greater emphasis may be placed on the Islamic legal dimension. Conversely, in areas like Papua, Kalimantan, and Sulawesi, where customary law plays a dominant role, the model allows for the integration of local adat values within the digital system. Such flexibility ensures that the digitalisation of land certification is not only efficient but also legitimate, inclusive, and context-sensitive. Ultimately, the proposed integration model reflects Indonesia's foundational ideal of *Bhinneka Tunggal Ika* Unity in Diversity by embedding pluralistic legal values within a cohesive governance system. It positions digital land certification not merely as a technical reform, but as a vehicle for strengthening justice, inclusivity, and cultural integrity in the national legal framework.⁵⁷

Conclusion

This study produces several important conclusions related to the intersection of three legal dimensions in the context of land certification digitalization in Indonesia. First, there are significant points of harmonization between the principles of Islamic law, positive legal provisions, and state administrative practices in the implementation of land certification digitalization. This harmonization is especially visible in the aspect of objectives (*maqāṣid*) which equally emphasize the protection of property rights, legal certainty, and administrative efficiency. Second, although there are points of harmonization, the implementation of land certification digitalization also presents several potential conflicts between the three legal dimensions. These conflicts mainly arise in the context of proving land ownership, transfer of rights through inheritance, and management of waqf land. These potential conflicts require a comprehensive and integrative approach to harmonize the three legal dimensions within the framework of digitalization.

Third, digital transformation in land administration has significant legal implications for the legal certainty of land ownership in Indonesia. On the one hand, digitalization increases efficiency, transparency, and accuracy in the land certification process, which contributes to increasing legal certainty. On the other hand, digital transformation also presents new challenges related to data security, privacy, and digital inclusion that need to be anticipated to ensure its effectiveness in increasing legal certainty. Fourth, the three-dimensional legal

⁵⁷ Sewo Yohanes, 'PENERAPAN NILAI-NILAI BHINNEKA TUNGGAL IKA DALAM MENGHADAPI ANCAMAN INTEGRASI NASIONAL MENUJU KEMANDIRIAN BANGSA', *Jurnal Investasi*, 7 (2021), pp. 1–14, doi:10.31943/investasi.v7i4.145.

integration model developed in this study offers a comprehensive and systematic approach to harmonizing Islamic legal principles, positive legal provisions, and state administrative practices within the framework of land certification digitalization. This model considers not only substantive and structural aspects, but also cultural aspects that influence the implementation of digitalization in the context of Indonesia's diverse society.

This research provides a significant academic contribution to the international discourse on legal pluralism, digital transformation, and the integration of indigenous legal systems within modern governance frameworks. By exploring the case of Indonesia a nation with vast legal diversity and a complex interplay between state law, Islamic law, and customary (adat) law, this study offers a unique empirical model that can inform similar contexts in other multi-ethnic and postcolonial societies. Furthermore, the integration of customary law into digital legal platforms presents a novel perspective on how technology can be utilized to preserve cultural heritage while enhancing legal accessibility and transparency. These findings contribute to global discussions on inclusive governance, sustainable legal modernization, and the rights of indigenous communities in the digital era.

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