



The Implementation of E-Service in the Issuance of Land Rights Certificates in Palu City

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ABSTRAK

This study aims to identify and understand the implementation of e-services in the issuance of land rights certificates at the National Land Agency Office (BPN) of Palu City. This research employed a qualitative descriptive approach involving seven informants selected through purposive sampling. Data were collected through observation, interviews, and documentation. The study was conducted at the National Land Agency Office of Palu City.

The theoretical framework adopted in this study is the E-Service Quality model proposed by Parasuraman, Zeithaml, and Malhotra (2005), which comprises four dimensions: Efficiency, System Availability, Fulfillment, and Privacy. The findings reveal that the implementation of e-services in the issuance of land rights certificates at the National Land Agency Office of Palu City has not yet been fully effective. This is evident from several dimensions: (1) Efficiency has not been effectively achieved due to unstable internet connectivity, limited user guidance, and the lack of real-time synchronization between central and regional databases; (2) System Availability remains suboptimal, as indicated by delays in data updates and inadequate public understanding of e-service utilization; (3) Fulfillment has not been effectively realized because of a 20–30% error tolerance rate, network disruptions that hinder real-time data access, and differing perceptions between employees and the public regarding information updates; and (4) Privacy has been implemented effectively, as access to e-services is restricted to verified data owners and authorized notaries handling land certificates. Moreover, data within the system are directly supervised by the Ministry of Agrarian Affairs and Spatial Planning/National Land Agency (ATR/BPN), preventing unauthorized modifications by local officials.



PENDAHULUAN INTRODUCTION

In Indonesia, land disputes frequently occur, prompting the government to establish land registration regulations to provide legal certainty for landowners. Pursuant to Article 19 of Law Number 5 of 1960 concerning Basic Agrarian Principles, the registration of land rights is essential to guarantee legal certainty. Landowners are entitled to utilize and manage their land, with ownership legally evidenced through land certificates.

According to Anatami (cited in Hijrianita, 2024), the dynamics of agrarian law are influenced by both internal and external factors. Internal factors include individual attempts to gain personal benefits, inconsistencies in the implementation of the Basic Agrarian Law, weak supervision mechanisms, and the lack of thoroughness among land office officials when examining documents. External factors include limited public understanding of land laws and certification procedures, the imbalance between land availability and demand, as well as rapid development activities that trigger land-use conversion and significant increases in land prices.

As an implementation of the Basic Agrarian Law, Government Regulation Number 24 of 1997 concerning Land Registration was enacted. Land registration consists of first-time registration (systematic or sporadic) and the maintenance of land registration data. The process includes the collection of physical data through measurement, mapping, and boundary determination; verification of land rights; public announcement of registration data for objections; and the issuance of land certificates as valid proof of ownership. The primary objective is to ensure legal certainty and orderly land administration.

With the advancement of information technology, land registration services are increasingly supported by digital platforms. The Ministry of Agrarian Affairs and Spatial Planning/National Land Agency (ATR/BPN) introduced the Sentuh Tanahku application

through Circular Letter Number 13/SE/XII/2017 and Regulation of the Minister of ATR/BPN Number 19 of 2020. This mobile-based application aims to enhance transparency, accountability, and service efficiency. In addition, the SITATA application developed by BPN facilitates electronic land data verification to support the implementation of electronic land certificates.

METODE METHODS

This study employed a qualitative descriptive research design. This approach was selected to provide a comprehensive description of the phenomena associated with the implementation of e-services in issuing land rights certificates at the National Land Agency Office of Palu City. The study utilized the E-Service Quality framework developed by Parasuraman, Zeithaml, and Malhotra (2005), which evaluates service quality through four dimensions: (1) Efficiency, (2) System Availability, (3) Fulfillment, and (4) Privacy.

The study utilized both primary and secondary data. Secondary data were obtained from institutional records, references, archives, and periodic reports related to the research topic. Primary data were collected directly through interviews with selected informants.

Data collection techniques included observation, interviews, and documentation. Observation was conducted to directly examine the implementation of e-services and identify challenges encountered in the issuance of land rights certificates. Interviews were conducted using interview guidelines to obtain in-depth and relevant information from respondents. Documentation involved reviewing supporting documents related to the research topic. In qualitative research, the researcher serves as the primary instrument throughout the data collection process. Data analysis followed the Miles and Huberman interactive model, which consists of data condensation, data display, and conclusion drawing.



HASIL DAN DISKUSI

RESULTS AND DISCUSSION

The implementation of e-services at the National Land Agency Office of Palu City aims to enhance public service quality through digital technology, particularly in the issuance of land rights certificates. However, the implementation has not yet achieved optimal effectiveness due to various challenges. This study evaluates e-service implementation based on the four dimensions proposed by Parasuraman, Zeithaml, and Malhotra (2005): Efficiency, System Availability, Fulfillment, and Privacy.

efficiency perspective, the implementation of e-services in the issuance of land rights certificates at the National Land Agency (BPN) Office of Palu City has not yet been effective. Although the application facilitates access to information, such as certificate status verification and application tracking, several challenges remain, including unstable internet connectivity, inadequate user guidance, inconsistencies between central and regional databases, and the low utilization of the application due to insufficient public outreach and socialization efforts.

These findings are consistent with previous studies indicating that the effectiveness of digital public services is often constrained by inadequate technological infrastructure, weak system integration, and low levels of digital literacy among service users. Dewi et al. (2026) found that while digitalization enhances service efficiency and transparency, its effectiveness is frequently hindered by limited infrastructure, poor system interoperability, and insufficient user capabilities. Similarly, Sadat et al. (2025) reported that digital governance initiatives are more likely to achieve efficiency gains when supported by reliable infrastructure, adequate training, and strong institutional capacity; otherwise, technical barriers and low digital literacy can significantly reduce service performance and utilization.

From the system availability perspective, the implementation of e-services has contributed positively to improving access to information

and facilitating data validation processes. However, its effectiveness remains limited due to delays in data updates and insufficient public understanding of the system. Although the platform has accelerated administrative procedures and enhanced transparency, some citizens are still required to visit the land office in person because service information and data are not consistently available in real time. These findings are consistent with previous studies indicating that the effectiveness of digital public services largely depends on the reliability, integration, and accessibility of information systems. Research has shown that delays in data synchronization,

inadequate system interoperability, and limited digital literacy among users can reduce the benefits of e-service implementation and hinder the achievement of efficient service delivery. Furthermore, digital service systems tend to perform more effectively when supported by robust technological infrastructure and continuous user education, both of which remain challenges in many public sector organizations.

From the fulfillment perspective, the implementation of e-services through the Sentuh Tanahku and SITATA applications since 2022 has played a significant role in the digital transformation of land administration services. However, the implementation has not yet achieved optimal effectiveness. Several challenges continue to hinder service performance, including an error tolerance rate of approximately 20–30%, network disruptions that affect system accessibility, and differences in the interpretation of information between employees and service users. These issues undermine the ability of the system to consistently deliver services in accordance with users' expectations. The findings are consistent with previous studies that emphasize that the success of digital public services depends not only on technological adoption but also on service reliability, information accuracy, and effective communication between service providers and users. Inadequate system integration, technical disruptions, and inconsistencies in information



dissemination can reduce user trust and limit the effectiveness of e-service delivery. Furthermore, digital transformation initiatives are more likely to achieve their intended outcomes when supported by dependable infrastructure, integrated information systems, and continuous user engagement.

This finding supports Dewi et al. (2026), who argue that the effectiveness of digital public services may be constrained by limited infrastructure, weak system interoperability, and challenges in ensuring service reliability. Likewise, Sadat et al. (2025) highlight that technological disruptions and inadequate institutional support can significantly affect the quality and fulfillment of digital service delivery, thereby reducing public satisfaction and service effectiveness.

From the privacy perspective, the implementation of e-services has demonstrated a relatively strong level of digital security through restricted access mechanisms and regulatory oversight in accordance with Indonesia's Personal Data Protection Law and the Electronic Information and Transactions (ITE) Law. Access to the system is limited to authorized users, thereby reducing the risk of unauthorized disclosure or misuse of personal data. However, the overall effectiveness of privacy protection has not yet been fully achieved, as the security of physical land administration documents, such as land books and archival records, remains inadequate and requires further strengthening. This finding suggests that privacy protection in digital public services should encompass not only cybersecurity measures but also comprehensive safeguards for physical records and supporting administrative documents. Previous studies have emphasized that effective digital governance requires an integrated approach to information security, including data protection, system reliability, and document management. Weaknesses in physical document security may create vulnerabilities that undermine the overall integrity of digital services, despite the presence of robust electronic security mechanisms.

Furthermore, public trust in e-services is closely linked to the government's ability to ensure both digital and physical protection of sensitive information throughout the service delivery process.

This finding supports Dewi et al. (2026), who argue that sustainable digital public service transformation requires not only technological security but also strong institutional capacity and administrative controls to protect information assets. Similarly, Sadat et al. (2025) emphasize that public trust and service effectiveness are significantly influenced by the government's ability to maintain secure, reliable, and accountable information management systems.

Overall, the findings indicate that although e-service implementation at the National Land Agency Office of Palu City has progressed positively, it has not yet achieved full effectiveness. Service digitalization has improved efficiency; however, various technical and non-technical challenges persist, including network disruptions, data synchronization issues, and limited public understanding. These findings support Cleveland's perspective that public administration should promote efficiency, professionalism, and public participation. Likewise, Frederickson and Henry emphasize the importance of responsiveness and adaptability in public service delivery, both of which remain challenges in the context of BPN Palu City.

Furthermore, digitalization is considered a strategic pathway toward more efficient and modern public service delivery. Nevertheless, the implementation of e-services at BPN Palu City remains constrained by network instability, system delays, partial reliance on manual procedures, and the limited availability of real-time service status information. As a result, the implementation of e-Government principles has not yet achieved optimal effectiveness. Additional challenges include infrastructure limitations, inadequate human resource capacity, the absence of sustainable digital systems, and low levels of digital literacy among members of the public.

From a regulatory perspective, the implementation of electronic land certificates



under Regulation of the Minister of ATR/BPN Number 1 of 2021 seeks to strengthen administrative order and legal protection. However, the security of physical documents still requires improvement. The transition from conventional certificates to electronic certificates also demands adequate human resources and supporting technological infrastructure. Therefore, the successful implementation of e-services requires continued investment in infrastructure development, capacity building, and public digital literacy to achieve more effective, accountable, and responsive public services.

KESIMPULAN CONCLUSION

Based on the findings of this study, it can be concluded that the implementation of e-services in the issuance of land rights certificates at the National Land Agency (BPN) Office of Palu City has not yet achieved optimal effectiveness. Although the adoption of digital platforms has contributed to greater transparency, improved accessibility, and more efficient administrative processes, several challenges continue to hinder the successful implementation of e-services. These challenges include unstable internet connectivity, delays in data synchronization, limited public understanding of digital service mechanisms, insufficient human resource capacity, and inadequate protection of physical land administration documents.

An analysis based on the dimensions of Efficiency, System Availability, Fulfillment, and Privacy reveals that while certain aspects of digital service delivery have shown positive progress, the overall quality of service remains constrained by both technical and organizational limitations. The findings indicate that the effectiveness of digital transformation in land administration cannot be determined solely by the adoption of technology. Rather, it requires integrated efforts involving reliable technological infrastructure, interoperable information systems, competent human resources, effective public engagement, and

strong governance mechanisms to ensure service reliability and security.

This study contributes to the growing body of literature on e-government and digital public service innovation by highlighting the practical challenges of implementing e-services in the land administration sector. The findings suggest that achieving sustainable and citizen-centered digital governance requires not only technological advancement but also continuous institutional strengthening and capacity building. Therefore, future policy initiatives should prioritize infrastructure development, system integration, digital literacy enhancement, and improved information security management to ensure that e-services can effectively deliver efficient, accountable, transparent, and responsive public services.

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