

The Effectiveness of the Implementation of Systematic Land Data Registration and Management at BPN Surabaya II

Adi Kresna Sakti^{1*}, Nahdiya Sabrina², Leni Dwi Nurmala³
Universitas Merdeka Malang

Corresponding Author: Adi Kresna Sakti adikresna3@gmail.com

ARTICLE INFO

Keywords: Land Administration, Digital Transformation, LAMPRIMA, Effectiveness, BPN Surabaya II.

Received : 12, December

Revised : 29, January

Accepted: 28, February

©2026 Sakti, Sabrina, Nurmala : This is an open-access article distributed under the terms of the [Creative Commons Attribution 4.0 International](https://creativecommons.org/licenses/by/4.0/).



ABSTRACT

This study aims to highlight the effectiveness and efficiency of land data management by comparing the manual system and digital application "LAMPRIMA" at the National Land Agency (BPN) Surabaya II, as well as analyzing challenges in its implementation. The empirical juridical method is used with a descriptive analysis approach. Data collection was carried out through field observations, documentation studies, and in-depth interviews with BPN Surabaya II employees to assess program success indicators, goals, and stakeholder satisfaction. The findings show that manual systems have low effectiveness with a turnaround time of 3-6 months, a high risk of human error, and limited data accessibility. The main obstacles found include the resistance of senior employees, digital incompetence, and reliance on technological infrastructure. This study recommends continuous human resource training and strengthening of technology infrastructure to optimize digital-based land services.

INTRODUCTION

Land data management in Indonesia is a structured process that includes the collection, processing, and storage of information related to land rights and use. Effective management is very important because it is directly related to legal certainty, protection of land rights, development planning, and dispute resolution. The legal basis for land management is regulated in Law Number 5 of 1960 concerning Agrarian Principles, strengthened by Government Regulation Number 24 of 1997 concerning Land Registration, and supported by Law Number 11 of 2008 concerning Information and Electronic Transactions and Law Number 30 of 2014 concerning Government Administration which emphasizes the principles of accountability, transparency, and responsibility in the management of public data.

In practice, land data management in Indonesia still faces various obstacles, such as the use of manual systems, unintegrated data, and limited access and accuracy of information. This condition has an impact on the low quality of public services, increasing land disputes, and weakening legal certainty. In addition, the lack of an effective information system, lack of public awareness of land rights, and weak socialization and education also exacerbate the problem. Irregularities in data management also have the potential to cause unlawful acts, such as data falsification, abuse of authority, and maladministration practices.

As an effort to improve, modernization through the implementation of digital systems is an urgent need, one of which is through the use of the Lamprima application implemented at BPN Surabaya. This application is designed to improve the efficiency, data accuracy, and transparency of land services, while making it easier for the public to access land rights information. However, its implementation still faces challenges related to the readiness of human resources, supporting facilities, public understanding, and clarity of legal accountability mechanisms. Therefore, a comprehensive evaluation of the effectiveness of the Lamprima application is needed, accompanied by strengthening employee training and socialization to the community, so that the digitization of land services is truly in line with laws and regulations and is able to provide optimal certainty and legal protection.

THEORETICAL REVIEW

The Concept of Legal Effectiveness and Efficiency

Legal effectiveness is a measure of the success of the law in achieving the expected goals, especially the extent to which the law is obeyed and able to have a positive impact on society, as stated by Soerjono Soekanto, Achmad Ali, and Hans Kelsen who emphasize compliance, the application of norms, and the avoidance of sanctions as the main indicators of legal effectiveness. Soerjono Soekanto further explained that the effectiveness of the law is influenced by five interrelated factors, namely the substance of the law (laws and regulations), law enforcement, supporting facilities or facilities, society, and legal culture. In the context of land administration, the effectiveness of the law is reflected in the ability of the land registration system to realize certainty and legal protection for rights holders, while efficiency is related to optimizing the use of time, energy,

and costs. In line with Peter F. Drucker's view that efficiency is doing the job correctly and effectiveness is doing the right work, land data management is not only required to be administratively efficient, but also effective in achieving the legal goals of the land itself.

Manual System in Land Administration

The manual system in land administration is a conventional method that relies on non-digital recording, storage, and data processing through physical documents such as land books, analog maps, and paper archives. This system is characterized by manual recording, the need for large archive space, the time-consuming process of searching for data, duplication of documents through photocopying, and the vulnerability to data corruption and loss. In land registration, the manual system requires officers to fill out forms, measure, map, and verify and validate data manually, so that it has the potential to cause inefficiencies and administrative errors.

Systematic Land Registration

Systematic land registration is a land registration activity for the first time that is carried out simultaneously and planned by the government for all plots of land that have not been registered in a village or sub-district, as regulated in Government Regulation Number 24 of 1997. In contrast to sporadic individual registration, systematic registration aims to accelerate the realization of certainty and legal protection of land rights equally, while realizing orderly land administration and providing complete, accurate, and up-to-date land data.

Land Data Management

Land data management includes the activities of collecting, processing, storing, maintaining, presenting, and distributing physical data and juridical data on land fields. Good management must be based on the principles of accuracy, up-to-dateness, accessibility, security, and data integrity. However, in manual systems, the fulfillment of these principles faces various limitations, especially related to the risk of recording errors, delays in data updates, difficulty in access, and vulnerability to document corruption and misuse.

Policy Implementation Theory

Policy implementation is an important stage in public policy that determines the success of a program, as stated by George C. Edwards III through four main factors, namely communication, resources, implementing disposition, and bureaucratic structure. In the implementation of the land registration manual system, these four factors greatly affect effectiveness, where clear communication ensures the suitability of procedures, the availability of resources determines the capacity of implementation, the attitude of the implementers affects the quality of services, and a clear bureaucratic structure ensures effective coordination and division of tasks.

Manual System Effectiveness Measurement Framework

Measuring the effectiveness of the manual system in managing land data can be done using effectiveness indicators according to Campbell, which include program success, goal achievement, program satisfaction, balance of inputs and outputs, and overall goal achievement. In the context of land, these indicators are manifested in the speed of file completion, the level of accuracy of physical and judicial data, ease of access to data, the security of documents from damage or loss, and the level of satisfaction of the community and officers as stakeholders.

The Use of the Lamprima Application in Land Data Management at the National Land Agency Surabaya

The Concept of E-Government and Digital Transformation

E-Government is the use of information and communication technology by the government to improve the quality of public services, transparency, and accountability. According to the World Bank, e-government not only functions as an administrative tool, but also as a means of transforming the relationship between government, society, and the business world. In the context of land administration, digital transformation includes a comprehensive change from a paper-based manual system to an integrated digital system, which not only impacts work processes, but also on organizational culture and the mindset of the apparatus.

Management Information Systems Theory

Management Information System (SIM) is an integrated system based on humans and technology that functions to provide information to support the operation, management, and decision-making of organizations. Gordon B. Davis emphasized that a SIM is made up of hardware, software, brainware, procedures, and data components. The success of a SIM is determined by the quality of the system, the quality of information, the quality of service, the satisfaction of the user, and the net benefits generated, which collectively affect the effectiveness of land data management.

Technology Acceptance Model

The Technology Acceptance Model (TAM) developed by Fred Davis explains that technology acceptance is determined by perceived usefulness and perceived ease of use. These two perceptions affect attitudes, intentions, and actual use of the system. In the implementation of the LAMPRIMA application, TAM is relevant to explain the level of acceptance of BPN officers, where the perception of usability and ease of use will determine the sustainability and optimization of the utilization of the system.

Land Administration System (LAS) Concept

The Land Administration System (LAS) is an infrastructure that supports the implementation of land policies and management, covering aspects of land tenure, value, use, and development. According to UNECE, LAS must be supported by a strong legal, institutional, and technological framework. In the modern context, digital-based LAS integrated with land registration systems,

GIS, and land information systems is a prerequisite for realizing legal certainty and administrative efficiency, where LAMPRIMA is part of the development of LAS in Indonesia.

Supporting Technologies: GIS and Database Management

Geographic Information System (GIS) allows the management and analysis of land spatial data, while the Database Management System (DBMS) functions to manage non-spatial data in a structured and secure manner. The integration of GIS and DBMS enables comprehensive management of land data, linking spatial data of land parcels with land ownership, value, and use information in one integrated system that supports accuracy and efficiency.

Land Digitalization Regulations and Policies

Digitization of land administration has a strong legal basis, including the ITE Law, Presidential Regulation No. 95 of 2018 concerning SPBE, as well as various technical regulations of the Ministry of ATR/BPN. This regulation provides legitimacy for the use of electronic documents, digital signatures, and electronic systems in land services, as well as the basis for the implementation of digital applications such as LAMPRIMA.

System Interoperability Concept

System interoperability is the ability of information systems to connect and exchange data technically and semantically. In land administration, interoperability allows for the integration of land systems with taxation, spatial planning, and licensing systems. Standardization of data formats, metadata, and communication protocols is the main prerequisite for realizing an integrated and efficient land system.

Information Security and Data Protection

Information security in electronic systems is based on the principles of Confidentiality, Integrity, and Availability (CIA Triad). Land data that has strategic value and contains personal data requires high protection in accordance with Law No. 27 of 2022 concerning Personal Data Protection. Security implementation is carried out through technical, administrative, and physical controls to ensure the confidentiality, integrity, and availability of data.

Change Management in Technology Implementation

Change management is a systematic approach to ensuring an effective transition from the old system to the new system. John Kotter's model of change emphasizes the importance of urgency, vision, communication, and reinforcement of change. In the implementation of LAMPRIMA, change management is required to overcome the resistance of apparatus accustomed to manual systems and ensure the adoption of technology runs continuously.

Information System Performance Evaluation

Evaluation of information system performance can be done using the DeLone and McLean models which include system quality, information quality, service quality, usage, user satisfaction, and net benefits. In addition, the Balanced Scorecard provides a strategic perspective through user onboarding, operational excellence, future orientation, and organizational contributions. In the land information system, evaluation indicators include service completion time, data accuracy, system utilization rate, user satisfaction, and cost efficiency.

METHODOLOGY

This study employs an empirical juridical research design, which examines both statutory regulations and their practical implementation to gain a deeper understanding of legal phenomena in land data management. This method is relevant as it enables the evaluation of the effectiveness of the manual system and the Lamprima application based on real data and experiences at the Surabaya Land Office (BPN Surabaya). The research applies statutory, conceptual, and case approaches. The statutory approach analyzes regulations governing land administration, particularly Law No. 5 of 1960 on Basic Agrarian Principles and its implementing regulations, to understand the legal framework of both systems. The conceptual approach utilizes information and technology management theories to assess efficiency and effectiveness. The case approach focuses on specific practices at BPN Surabaya through in-depth case studies. Primary data are obtained through interviews and observations, while secondary and tertiary data derive from official documents, reports, books, and relevant scholarly publications.

RESULTS

Manual Measurement and Mapping Process

Based on the results of the researcher's interview with Marzuki, A. Ptnh., M.M., Head of the Measurement and Mapping Section of BPN Surabaya 2, manual measurement and mapping in systematic land registration still relies on conventional measuring tools such as theodolite, waterpass, and meters that require high technical skills, field experience, and periodic maintenance and calibration. The process takes place through several stages, namely preparation (preparation of tools, map study, and coordination with landowners), field measurement (determination of tie points, measurement of land plot boundaries, and installation of boundary marks), manual recording and documentation, calculation and processing of coordinate data and land plot area, to manual map drawing. The results show that although manual measurements can achieve a level of accuracy that meets the standard when performed by experienced surveyors, these systems are highly susceptible to human error, are influenced by weather and terrain conditions, and take a long time. For a single simple plot of land, the entire process can take about a week, whereas for a PTSL program with a large number of plots, a purely manual system can potentially take months to years. These findings confirm that although manual systems have advantages such as not relying on digital technology and relatively lower initial costs, their limitations in terms of time efficiency, productivity, and data integration make

them less than optimal to meet the demands of fast and modern land services, so that the transformation towards a digital system becomes an inevitable necessity.

Manual File Administration and Management

Based on the results of the researcher's interview with Adi Kresna Sakti, S.H., as the General Administration of the Survey and Mapping Section as well as the Coordinator of the Cadastral Measurement and Mapping Substance Group of BPN Surabaya 2, the administration and management of land files in the manual system faces serious challenges due to the high volume of physical documents that continue to increase every year. The filing system is carried out manually with layered classification based on the type of rights, entitlement number, year of issue, and region, where each file consists of many important documents and is equipped with a control card as a tracking tool. However, in practice, file searches often take a long time due to incomplete applicant information, misplaced or missing files, and damaged physical condition of documents. The process of duplicating documents through photocopying is considered inefficient in terms of time, cost, quality of results, security, and risks damaging the original document. Limited archive space, weak document preservation due to budget and human resource limitations, and difficulty in coordinating and tracking files between departments further worsened the effectiveness of the manual system. The findings of this study show that although the manual system has the advantages of the legal power of physical documents and independence from digital technology, its limitations in efficiency, security, and long-term management make the digitization of land administration an urgent need that must be carried out carefully and planned.

Completion Time Effectiveness

The results of the study show that the manual system in systematic land registration has low time effectiveness. Based on the information of three informants, the average time to complete one file with a manual system ranges from **3-6 months**, depending on the complexity of the case and the completeness of the documents. The most time-consuming stages are **data verification and mapping**, as the entire process is done manually and must be repeated if something goes wrong. In addition, field measurements often require repeated visits due to data discrepancies or objections from border parties, thus extending the duration of file completion.

Data Accuracy and Quality

In terms of accuracy, the results of the study show that the manual system can produce fairly **accurate** data if carried out by experienced officers and according to procedures. However, the rate of **human error** is relatively high, especially at the stage of recording, drawing maps, and archiving documents. The informant stated that although the accuracy of manual measurements can still meet the standards of accuracy set out in the regulations, the quality control process becomes more difficult because it has to be done manually through individual inspections, thus increasing the risk of missed errors.

Accessibility and Ease of Data Search

Research found that data accessibility in manual systems is relatively low. The process of searching for physical files takes a long time because it must be done directly in the archive room. The informant mentioned that searching for files can take **a few hours to several days**, especially for old documents or when the information provided by the applicant is incomplete. Efforts to create manual indexes are helpful, but they are still unable to match the speed and ease of search in a keyword-based digital system.

Security and Data Preservation

From the aspect of security and preservation, the results of the study show that physical documents in manual systems **are vulnerable to damage and loss**. Environmental factors such as humidity, document age, and insect infestation cause many old archives to degrade their quality. In addition, the absence of an adequate backup system makes the risk of data loss high, as lost physical documents cannot be recovered in their entirety. Preservation efforts carried out, such as the use of air-conditioned rooms and special filing cabinets, are considered not to be able to overcome the problem comprehensively.

Resource Efficiency

The results of the study show that manual systems are very inefficient in the use of resources. Manual archive management requires **more labor**, more storage space, and additional operational costs. Some employees must be allocated specifically to manage archives, while the available archive space is increasingly limited and should be used for other functions that are more productive if the system is digitized.

Stakeholder Satisfaction

The level of public satisfaction with services with the manual system tends to be **low**, especially due to the long completion time and convoluted administrative process. People in the digital era expect fast and transparent service, so the manual system often causes complaints. Internally, officers also feel a heavier and inefficient workload, because a lot of work that could have been completed faster had to be done manually for a long time.

Manual System Constraints and Challenges

The research identified various main obstacles in the manual system, including the limitation of human resources with special expertise, limited archive space, deterioration in the quality of physical documents, difficulty in coordination between sections due to the alternating use of physical files, and slow response to requests for public information. In addition, conventional measuring instruments require regular maintenance and calibration, so that if damage occurs, the measurement process and soil services can be significantly hampered. These findings confirm that manual systems are no longer adequate to meet the demands of fast, efficient, and accountable land services.

The Use of the Lamprima Application in Land Data Management at the Surabaya National Land Agency

LAMPRIMA's Supporting Technology Infrastructure

The implementation of LAMPRIMA at BPN Surabaya 2 is supported by a relatively adequate technological infrastructure, including a local server based on a client-server architecture with a PostgreSQL database, a dedicated line internet network, and work devices such as computers, scanners, and printers for each officer. The system is equipped with a daily automatic backup mechanism to maintain data security. The field measurement infrastructure has also been modernized with the use of Geodetic GPS, Total Station, and drones whose data can be directly integrated into LAMPRIMA. In addition, the office's internal network has been upgraded through the installation of LAN and WiFi throughout the room, thus supporting flexible and real-time system access.

Key Features and Functions of LAMPRIMA

LAMPRIMA has the main features that support the efficiency of land registration, namely digital form-based data collection with automatic validation, digital measurement and mapping integrated with modern measuring tools, a real-time file tracking and monitoring system, and integration with other systems such as KKP and SIMA. The digital mapping feature allows for the creation of maps in hours rather than days on a manual system, while the monitoring dashboard improves transparency, accountability, and managerial control over workflows and process bottlenecks.

LAMPRIMA Implementation Process at BPN Surabaya 2

The implementation of LAMPRIMA is carried out in stages through socialization (late 2020), infrastructure preparation (early 2021), and officer training (mid-2021). The socialization stage aims to build understanding and acceptance of officers, although initial responses vary. Technical preparation includes device procurement, system installation, and repeated stability tests. The training is carried out according to the work function and continues with intensive assistance. Full implementation is carried out gradually through a parallel scheme with a manual system before being implemented thoroughly.

HR Training and Capacity Building

The success of LAMPRIMA is largely determined by the development of human resource capacity, which not only emphasizes the technical aspect, but also the change of mindset from manual to digital. The training is conducted through a combination of classroom training, hands-on training, and on-the-job training with the support of user manuals and video tutorials. The mentoring strategy through the appointment of super users has proven to be effective in accelerating the adaptation of officers. Periodic evaluations are conducted to identify competency gaps and design more targeted follow-up training.

Process Time Effectiveness with LAMPRIMA

The use of LAMPRIMA has been proven to significantly accelerate the completion time of systematic land registration. The average file completion time decreased from 3–6 months on the manual system to 1–2 months. The data entry process that previously required 2–3 days can now be completed in 2–3 hours, while map creation has been reduced from 3–5 days to about 1 day. Acceleration is also supported by automatic notifications between stages and an electronic approval system that allows approval to be carried out from anywhere.

Data Accuracy and Quality with LAMPRIMA

LAMPRIMA improves data accuracy and quality through automatic validation, integration of digital measuring tools, and data cross-check features. The level of input errors that are common in manual systems can be significantly suppressed because the system provides warnings for illogical data. For spatial data, coordinate precision is improved and consistent because it is stored in a digital format. The land plot overlap detection feature also helps prevent potential future disputes, while map standardization improves readability and visual consistency.

Accessibility and Ease of Data Search

LAMPRIMA provides significant convenience in searching and accessing data through search, filter, and multiple indexing features. Data can be found in seconds using a variety of keywords, such as entitlement number, owner name, NIK, address, or location coordinates. Interactive map visualization allows for intuitive location-based search. The role-based access control (RBAC) system also eliminates the need to borrow physical files between sections, thereby facilitating internal coordination.

Data Security in the LAMPRIMA System

Data security in LAMPRIMA is maintained through strict user authentication mechanisms, activity log audits, layered authorizations, and recording of data change history. The backup system is done on a daily, weekly, and monthly basis with local and cloud storage, so the risk of data loss can be minimized with a potential loss of up to one business day. In addition, data encryption is applied both during transmission and storage, and system connections are secured using HTTPS and SSL certificates.

LAMPRIMA Integration with Other Systems

LAMPRIMA is designed to be interoperable and has been integrated with the MPA system for certificate issuance and SIMA for national reporting. This integration eliminates the need for repetitive data input and reduces the risk of data inconsistencies. The system is also capable of processing data from various measuring instruments with standard formats. In the future, integration with external systems such as tax, spatial planning, and licensing is planned to build a more comprehensive land digital ecosystem.

Challenges in LAMPRIMA Implementation

The implementation of LAMPRIMA faces a number of challenges, including the resistance of senior officers to changes, reliance on the stability of internet connections, the complexity of digitizing old archive data, and the impact of application updates that sometimes cause user confusion. These challenges require a continuous managerial, technical, and communication approach so as not to hinder the optimal utilization of the system.

Internal and External User Satisfaction

The level of satisfaction with LAMPRIMA is relatively high. About 80% of internal officers expressed satisfaction with the speed of the process, ease of data search, and transparency of workflows, although some still faced initial adaptation constraints. From the public side, satisfaction increases along with the acceleration of service time and the availability of file tracking features. Process transparency also increases public trust because each stage is clearly recorded, thus minimizing the potential for manipulation and unprofessional practices.

CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the research and analysis that has been carried out, it can be concluded that the manual system in land data management at BPN Surabaya 2 is still able to carry out the basic functions of land registration and produce legally valid certificates, but shows a low level of effectiveness and efficiency. This system is characterized by a long file completion time (3–6 months), a high risk of human error, limited data accessibility, and vulnerability to corruption and loss of physical documents due to the absence of an adequate backup system. On the other hand, the implementation of the LAMPRIMA application has been proven to significantly improve land data management through process acceleration of up to around 67%, increasing data accuracy and quality with automatic validation and integration of digital measuring tools, easy access and search of data in seconds, process transparency through real-time tracking systems, improving data security, operational efficiency, and increasing community satisfaction by up to around 80%. However, the implementation of LAMPRIMA still faces a number of challenges, such as resistance to change from some officers, digital competency gaps, reliance on technological infrastructure, complex old archive digitization process, technical constraints in applications, cybersecurity risks, and limited coordination with the central government.

In connection with these findings, it is suggested that BPN Surabaya 2 strengthen human resource capacity development through periodic training, strengthening the role of *super users* as internal trainers, and implementing an award system to encourage optimal technology adoption. Local governments are expected to provide regulatory and budget support, strengthen inter-agency system integration, and actively collaborate in the implementation of PTSL and socialization to the community. Meanwhile, the public is encouraged to take advantage of available land digital services, actively provide feedback on service quality, and improve digital literacy in order to make optimal use of the digital

land system to obtain legal certainty and public services that are faster, more transparent, and accountable.

FURTHER STUDY

Future research is recommended to expand the scope of analysis by involving a comparative study between Badan Pertanahan Nasional offices in different regions to identify variations in the effectiveness of systematic land data registration and management implementation. Further studies may also incorporate quantitative performance indicators, digital system integration assessment, and stakeholder satisfaction surveys to obtain more comprehensive and measurable results. Additionally, longitudinal research is suggested to evaluate the sustainability and long-term impact of systematic land data management reforms on public service quality and administrative transparency.

ACKNOWLEDGMENT

The author would like to express sincere gratitude to the management and staff of Badan Pertanahan Nasional Surabaya II Office for their cooperation, support, and valuable information provided during the research process.

REFERENCES

- Ali, Achmad. 2009. *Menguak Teori Hukum (Legal Theory) dan Teori Peradilan (Judicialprudence) Termasuk Interpretasi Undang-Undang (Legisprudence)*. Jakarta: Kencana Prenada Media Group.
- Burrough, Peter A., dan Rachael McDonnell. 1998. *Principles of Geographical Information Systems*. Oxford: Oxford University Press.
- Campbell, J.P. 1977. "On the Nature of Organizational Effectiveness." Dalam P.S. Goodman dan J.M. Pennings (eds.), *New Perspectives on Organizational Effectiveness*. San Francisco: Jossey-Bass.
- Davis, Gordon B. 1974. *Management Information Systems: Conceptual Foundations, Structure, and Development*. New York: McGraw-Hill.
- DeMers, Michael N. 2009. *Fundamentals of Geographic Information Systems*. 4th ed. New York: John Wiley & Sons.
- Drucker, Peter F. 2006. *The Effective Executive*. New York: Harper Business.
- Edwards III, George C. 1980. *Implementing Public Policy*. Washington: Congressional Quarterly Press.
- Elmasri, Ramez, dan Shamkant B. Navathe. 2016. *Fundamentals of Database Systems*. 7th ed. Boston: Pearson.
- Harsono, Boedi. 2019. *Hukum Agraria Indonesia: Sejarah Pembentukan Undang-Undang Pokok Agraria, Isi dan Pelaksanaannya*. Jakarta: Djambatan.

- Heeks, Richard. 2006. *Implementing and Managing eGovernment: An International Text*. London: Sage Publications.
- Hiatt, Jeffrey M. 2006. *ADKAR: A Model for Change in Business, Government, and Our Community*. Loveland: Prosci Learning Center Publications.
- Indrajit, Richardus Eko. 2019. *Electronic Government: Strategi Pembangunan dan Pengembangan Sistem Pelayanan Publik Berbasis Teknologi Digital*. Yogyakarta: Andi Offset.
- Jogiyanto HM. 2017. *Sistem Informasi Keperilakuan*. Yogyakarta: Andi Offset.
- Kelsen, Hans. 2011. *Teori Umum tentang Hukum dan Negara*, diterjemahkan oleh Raisul Muttaqien. Bandung: Nusa Media,
- Kotter, John P. 2012. *Leading Change*. Boston: Harvard Business Review Press.
- Limbong, Bernhard. 2019. *Hukum Agraria Nasional*. Jakarta: Margaretha Pustaka.
- McLeod Jr., Raymond, dan George P. Schell. 2018. *Sistem Informasi Manajemen*. Edisi 10. Jakarta: Salemba Empat.
- Parlindungan, A.P. 2016. *Pendaftaran Tanah di Indonesia*. Bandung: Mandar Maju.
- Santoso, Urip. 2017. *Pendaftaran dan Peralihan Hak Atas Tanah*. Jakarta: Kencana.
- Sitorus, Oloan, dan Dayat Limbong. 2017. *Pengadaan Tanah untuk Kepentingan Umum*. Yogyakarta: Mitra Kebijakan Tanah Indonesia.
- Soekanto, Soerjono dan Mustafa Abdullah. 1982. *Sosiologi Hukum dalam Masyarakat*. Jakarta: CV Rajawali.
- Soekanto, Soerjono. 2008. *Faktor-Faktor yang Mempengaruhi Penegakan Hukum*. Jakarta: PT Raja Grafindo Persada
- Sumardjono, Maria S.W. 2018. *Kebijakan Pertanahan: Antara Regulasi dan Implementasi*. Jakarta: Kompas.
- Sutabri, Tata. 2017. *Sistem Informasi Manajemen*. Yogyakarta: Andi Offset.
- Sutedi, Adrian. 2018. *Peralihan Hak Atas Tanah dan Pendaftarannya*. Jakarta: Sinar Grafika.
- UNECE. 1996. *Land Administration Guidelines*. Geneva: United Nations.
- Van Grembergen, Wim, dan Steven De Haes. 2009. *Enterprise Governance of Information Technology*. New York: Springer.

- Westerman, George, Didier Bonnet, dan Andrew McAfee. 2014. *Leading Digital: Turning Technology into Business Transformation*. Boston: Harvard Business Review Press.
- Wibowo. 2018. *Manajemen Perubahan*. Edisi 3. Jakarta: RajaGrafindo Persada.
- Williamson, Ian, et al. 2010. *Land Administration for Sustainable Development*. Redlands: ESRI Press.
- Undang-Undang Nomor 5 Tahun 1960 tentang Pokok-Pokok Agraria. Lembaran Negara Republik Indonesia Tahun 1960 Nomor 104.
- Undang-Undang Nomor 11 Tahun 2008 tentang Informasi dan Transaksi Elektronik. Lembaran Negara Republik Indonesia Tahun 2008 Nomor 58.
- Undang-Undang Nomor 30 Tahun 2014 tentang Administrasi Pemerintahan. Lembaran Negara Republik Indonesia Tahun 2014 Nomor 262.
- DeLone, William H., dan Ephraim R. McLean. 2003. "The DeLone and McLean Model of Information Systems Success: A Ten-Year Update." *Journal of Management Information Systems* 19(4).
- Malik, Mahmud, dan Didi Tarmidi. 2019. "Analisis Efektivitas Pengelolaan Data dalam Pelayanan Publik." *Jurnal Administrasi Publik* 15(2).
- Nugroho, S. 2022. "Peran Pelatihan dalam Meningkatkan Kompetensi Petugas BPN dalam Aplikasi Lamprima." *Jurnal Pengelolaan Sumber Daya Alam* 12(1).
- Prasetyo, M. 2021. "Integrasi Sistem Pengelolaan Data Pertanahan dengan Regulasi: Tantangan dan Peluang." *Jurnal Hukum dan Pertanahan* 9(2).
- Sari, A. 2020. "Dampak Sistem Administrasi Manual terhadap Kepuasan Masyarakat dalam Pengelolaan Pertanahan." *Jurnal Administrasi Publik* 8(1).
- Wibowo, R. 2021. "Analisis Implementasi Aplikasi Lamprima dalam Pengelolaan Data Pertanahan di Beberapa Daerah." *Jurnal Teknologi dan Manajemen* 11(2).