Evaluating Electronic Government for Smart Village Governance in Kamang Baru District Sijunjung Regency

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ABSTRACT

This study evaluates the implementation of electronic government in supporting smart village governance in Nagari Kamang, Nagari Muaro Takung, and Nagari Kunangan Parik Rantang in Kamang Baru District, Sijunjung Regency, Indonesia. It examines how digital technology is incorporated into public services and administrative routines, and identifies the organisational and infrastructural conditions associated with its use. A qualitative descriptive and evaluative approach is used, drawing on interviews, observations, and documentary material. The reported purposive sample comprises 12 informants, including nine government officials and three community representatives. The analysis covers six dimensions: digital public services, administration and data management, information disclosure, staff capacity, community participation, and digital infrastructure. The comparison indicates that technology is used principally for correspondence, record preparation, communication, and the provision of initial service information. Digital enquiries frequently remain connected to office-based completion, while differences in record management, staff responsibilities, and connectivity shape the extent of routine use. The case accounts identify dependence on individual operators, uneven staff capability, inconsistent information management, and maintenance needs as constraints on continuity and integration. They do not establish measured improvements in processing time or population-wide patterns of digital participation. The study contributes an operational distinction between the availability of digital tools, their routine use, and their integration into government processes. It concludes that progress towards smart village governance requires clearer responsibilities, shared staff competence, reliable infrastructure, accessible records, and opportunities for residents to obtain assistance and provide feedback. Recommendations include trained backup staff, consistent archive procedures, maintained official information channels, and inclusive service arrangements. The findings offer context-specific insights into rural digital governance and are intended to support analytical understanding rather than statistical generalisation.

Keywords: e-government, smart village, digital governance, nagari government, rural public services

INTRODUCTION

Digital public services depend on how local governments organise work, maintain records, and respond to residents. Research on Indonesian village administration describes opportunities to improve document processing and access to information, alongside constraints in staffing and infrastructure (Darmawan et al., 2025; Putro & Besa, 2025). Evaluating electronic government therefore requires attention to the practices supported by technology and the consequences that can be established for service users.

In West Sumatra, nagari is the term used for village-level local government. Wali Nagari is translated in this article as nagari head. Research on smart village readiness in this setting identifies technological, organisational, and environmental conditions as important considerations (Yuskar et al., 2024). The nagari context is relevant to understanding how digital responsibilities are distributed, how administrative services operate, and how local residents engage with government.

Existing Indonesian research explains why the availability of computers and communication applications provides an incomplete account of digital government. Sihotang et al. (2023) identify interoperability, staff

workload, civil society, and vendor involvement as influences on village information system adoption. Sihotang et al. (2025) examine the stakeholder ecosystem supporting sustained use. These studies direct attention to the organisational arrangements through which technology becomes part of everyday government work.

Recent studies also place governance and local context at the centre of smart village evaluation. Hadian et al. (2026) combine information systems success and innovation adoption perspectives with contextual conditions. Islamiati et al. (2026) examine village governance and variations in smart village potential across Indonesia. Nursetiawan and Putra (2026) discuss infrastructure, staff capacity, and digital literacy in village e-governance. These studies provide a basis for examining implementation while recognising that particular local conditions require direct investigation.

The gap addressed in this study concerns the translation of readiness into everyday service and records practices within a shared district setting. Yuskar et al. (2024) examine readiness across West Sumatra. The present study focuses on how digital services, administrative records, and public communication operate in three nagari, and how staffing and infrastructure relate to those practices. Comparing cases within one district helps identify variation in implementation, although the shared location does not control for every difference in leadership, resources, or service demand.

The study evaluates Nagari Kamang, Nagari Muaro Takung, and Nagari Kunangan Parik Rantang through three research questions:

RQ1: How do the three nagari differ across digital public services, administration and data management, information disclosure, staff capacity, community participation, and infrastructure?

RQ2: What organisational, infrastructural, and engagement conditions help explain the similarities and differences?

RQ3: What feasible improvements follow from the identified constraints, and which actors could implement them?

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

Electronic government and public value

E-government concerns the use of information and communication technology in government. The OECD (2014) distinguishes this use of technology from digital government strategies that integrate digital technologies into the creation of public value. At the nagari level, relevant activities include administrative processing, electronic records, public information, and communication with residents. Herdiana et al. (2022) discuss public value in village e-government through services, openness, and participation. These anticipated benefits provide evaluative aims, while their achievement must be assessed through evidence of actual practices and outcomes.

Smart village governance

Herdiana (2019) conceptualises smart villages through relationships among smart government, smart community, and smart environment. This study addresses the governance component through services, records, disclosure, staff responsibilities, and resident engagement. Its scope does not extend to environmental performance or an overall measure of smart village achievement. This focus supports a more precise evaluation of the relationship between digital technology and local government practice.

Subnational governments face constraints in skills, equipment, and infrastructure, together with issues of coordination and data protection (de Mello & Ter-Minassian, 2020). These conditions help explain why similar digital tools can support different administrative practices. Maintenance, institutional responsibility, and continuity therefore require attention alongside initial technology provision.

Relationships among the evaluation dimensions

The conceptual framework treats staff capacity and infrastructure as complementary enabling conditions. Connectivity, devices, and maintenance make digital work technically feasible. Skills, assigned responsibilities, and backup personnel help sustain that work during absences or staff changes. Their relationship becomes visible in how particular administrative tasks are carried out and maintained.

Digital public services, administration and data management, and information disclosure are the practices through which those enabling conditions operate. Integration requires a connection between enquiries, processing, records, and communication of outcomes. Electronic storage alone does not establish that authorised staff can retrieve a complete, current record. Likewise, an information channel may provide announcements without supporting a complete service transaction.

Community participation includes service use and opportunities to influence service organisation. Receiving information, making an enquiry, providing feedback, and contributing to a decision represent different forms of engagement. Resident feedback may inform changes to services, while assisted and face-to-face access may support residents who need help. These relationships are examined as interpretive expectations, without assuming that technology automatically improves inclusion or accountability.

Table 1 translates the framework into criteria for qualitative comparison. The dimensions distinguish availability, routine use, and integration. They are not combined into a numerical maturity index or an overall performance ranking.

Table 1. Evaluation dimensions and comparison criteria

Dimension	Criterion	Analytical focus
Digital public services	Remote steps and required office visits	Distinguish enquiries from completed transactions.
Administration and data management	Recording, retrieval, and continuity	Examine connected records and assigned responsibilities.
Information disclosure	Official ownership, consistency, and access	Assess updates, retrievability, and public availability.
Staff capacity	Skills, workload, and backup arrangements	Examine the distribution of operational competence.
Community participation	Information, enquiries, feedback, and influence	Distinguish service use from participation in decisions.
Digital infrastructure	Connectivity, operability, and maintenance	Examine support for recurring digital work.

Availability refers to the presence of a usable device, channel, or record. Routine use refers to a recurring administrative practice. Integration refers to a connection among relevant service stages, responsibilities, or records. Where the case material does not establish a criterion, the assessment remains limited to the practice described; absence of evidence is not treated as proof that a capability is absent.

METHODOLOGY

Research design and case selection

The study uses a qualitative descriptive and evaluative comparison of three nagari governments in Kamang Baru District, Sijunjung Regency, West Sumatra. The nagari government is the unit of comparison, with attention to administrative practices and experiences of accessing services. The descriptive component identifies forms of digital use, while the evaluative component considers their continuity, accessibility, and integration.

Nagari Kamang, Nagari Muaro Takung, and Nagari Kunangan Parik Rantang were selected purposively to examine variation in digital facilities, administrative activities, and staff readiness. Their shared district setting provides a basis for comparison without implying that they have identical organisational resources or service needs. District context is described in Kecamatan Kamang Baru dalam angka 2025 (Badan Pusat Statistik Kabupaten Sijunjung, 2025). Population size is not used as a proxy for digital performance.

Informants and data sources

The reported purposive sample comprises 12 informants selected for their involvement in government administration, digital operations, or service use. Nine represent government and three represent community perspectives. Table 2 sets out the role totals. These totals describe the composition of the sample and do not imply statistical representation of residents.

Table 2. Reported informant composition

Informant role	Number	Relevant perspective
Nagari head	3	Leadership and service priorities
Nagari secretary	3	Administration and records
IT operator or staff member	3	Daily digital operations
Community representative	3	Individual service and information experience
Total	12	Nine government and three community informants

Interviews, observations, and documentary material provide the sources for the qualitative evaluation. Interviews address experiences of digital services, administrative work, staff responsibilities, infrastructure, and community engagement. Observation concerns the use of technology in government work and service activities. Documentary sources include relevant administrative and contextual materials. Published contextual sources are distinguished from the case accounts used to describe implementation.

Comparative analysis and analytical scope

The case material is organised under the six dimensions in Table 1. Descriptions within each nagari are compared across cases to identify common practices and differences in implementation. The comparison focuses on what technology is used for, the relationship between digital and office-based processes, and the organisational or infrastructural constraints identified in the accounts. The resulting interpretations are presented as context-specific explanations rather than causal estimates.

Qualitative sample adequacy depends on the research aim, specificity of participants, quality of the material, and analytical scope (Malterud et al., 2016). The government-dominant composition provides greater coverage of administrative perspectives than of diverse user experiences. Three community accounts cannot establish population-wide preferences, demographic differences in capability, or the prevalence of exclusion. Consistent with the emphasis on transparent reporting in O'Brien et al. (2014), these boundaries are retained when interpreting the findings.

The evaluation does not calculate a composite score. Differences are discussed by dimension, and claims of measured improvements in processing time, transparency, or participation are not made. The aim is to explain implementation practices and identify feasible improvements within the scope of the case material.

Research setting

Table 3 presents the population figures reported for the three nagari in first-semester 2025 population administration data (Dinas Kependudukan dan Pencatatan Sipil Kabupaten Sijunjung, 2025). Kamang and

Kunangan Parik Rantang have larger reported populations than Muaro Takung. These figures describe the scale of the communities; they are not measurements of service workload, digital access, or governance performance.

Table 3. Reported population of the three nagari in the first semester of 2025

Nagari	Male	Female	Total
Kamang	7,031	6,584	13,615
Muaro Takung	3,159	2,987	6,146
Kunangan Parik Rantang	6,436	6,209	12,645

RESULTS

The comparison identifies digital technology use in correspondence, administrative records, communication, and the provision of initial service information. The case accounts also indicate that digital contact and office-based procedures operate together. Differences concern the organisation and regularity of these practices, rather than a validated overall ranking of the nagari.

Digital public services

In Kamang, digital communication is described as enabling residents to enquire about administrative requirements before visiting the office. Muaro Takung uses digital contact for communication and information, while administrative completion remains office based. Kunangan Parik Rantang combines digital coordination with in-person processing. Across the cases, the distinction between an enquiry channel and a complete online transaction is important: access to initial information does not establish that submission, verification, processing, and collection can all occur remotely.

Administration and data management

Kamang is described as using electronic records relatively routinely, with some operational knowledge concentrated in individual staff members. Muaro Takung uses computers for administrative work while paper files remain important. Kunangan Parik Rantang uses technology for correspondence and data processing, with a need for clearer archive arrangements and coordination. The comparison therefore concerns the organisation of records and responsibilities, not simply whether computers are available.

Paper and electronic records are assessed through their completeness, retrieval, protection, and connection to the administrative workflow. Electronic storage alone does not establish integration.

Information disclosure

The case account for Kamang describes more active digital information distribution, although communication is not fully organised through a single integrated channel. Muaro Takung relies on group communication, raising questions about systematic documentation and later retrieval. Kunangan Parik Rantang uses digital communication while facing constraints in access and information management. These differences concern channels and practices; they do not constitute a measured transparency index.

Staff capacity

The case descriptions identify uneven operational skills and reliance on particular staff members. Kamang illustrates the concentration of digital knowledge, Muaro Takung shows differences in experience using computers, and Kunangan Parik Rantang highlights training and clearer task allocation. These accounts connect staff capacity to the continuity of daily work. They do not establish an age-related pattern in staff capability or demonstrate the effect of a particular training programme.

Dependence on one operator raises a continuity question: whether other staff can continue the work during an absence or change in personnel. Capacity development therefore concerns shared competence and responsibility across the office.

Community participation

The case accounts describe residents using digital communication for information and enquiries alongside face-to-face contact. Kamang includes accounts of digital enquiries and continuing direct contact; Muaro Takung places greater emphasis on information access; Kunangan Parik Rantang describes acceptance of digital communication alongside access and literacy concerns. These accounts illustrate particular experiences and do not establish how widespread those experiences are.

Evidence of receiving information or making an enquiry should not be treated as proof of influence on government decisions. The limited community sample also prevents conclusions about age groups, educational backgrounds, or the preferences of the wider population. Community participation is therefore interpreted within the scope of the individual accounts and practices described.

Digital infrastructure

Kamang is described as having relatively supportive connectivity, Muaro Takung as facing network constraints, and Kunangan Parik Rantang as needing maintenance and capacity support. These descriptions indicate how access conditions feature in day-to-day digital work. They are not equivalent to a measured assessment of network speed, reliability, or infrastructure quality.

Equipment requires maintenance, connectivity, and operational support. Infrastructure needs should be assessed through these requirements, without inferring inadequacy from population size alone.

Comparison across the six dimensions

Table 4 summarises the reported implementation patterns. The matrix supports comparison by dimension and identifies the organisational issues associated with each description. It does not assign an overall score or establish that one nagari performs better across all aspects of governance.

Table 4. Comparison of reported implementation patterns

Dimension	Kamang	Muaro Takung	Kunangan Parik Rantang
Public services	Digital enquiries; office visits remain.	Digital contact; office-based completion.	Digital coordination with in-person processing.
Records and administration	Routine electronic records; operator dependence.	Computers alongside paper files.	Correspondence and data processing; archive coordination needs.
Information disclosure	Active distribution; channels not fully integrated.	Group communication; retrieval concerns.	Digital communication; access and management constraints.
Staff capacity	Concentrated operational knowledge.	Differences in computer experience.	Training and clearer task allocation needed.
Community participation	Enquiries and continuing direct contact.	Emphasis on information access.	Digital communication with access and literacy concerns.
Infrastructure	Supportive access described.	Network constraints described.	Maintenance and capacity support needed.

DISCUSSION

Connecting digital tools with institutional routines

The comparison suggests that digital government implementation should be understood through the connection

between technology use and administrative routines. Digital enquiries, correspondence, and information distribution indicate operational use. Integration requires the further connection of enquiries, processing, records, and communication of outcomes. This distinction explains why the presence of digital communication does not by itself establish integrated governance.

Institutional continuity offers an interpretive link between individual competence and sustained services. Concentrating operational knowledge in one employee can support daily work while creating vulnerability during absences or personnel changes. The accounts therefore suggest that backup arrangements and shared responsibilities deserve attention alongside technical training. This interpretation is consistent with the attention to workload and stakeholder support in village information system research (Sihotang et al., 2023, 2025). It remains an explanation grounded in the scope of the case descriptions, rather than an isolated causal effect.

Understanding variation within the nagari setting

The cases differ in the organisation of records, use of communication channels, distribution of staff skills, and described connectivity constraints. These conditions provide plausible explanations for differences in routine technology use. They do not isolate the effects of leadership, funding, external technical support, or service workload, which may also contribute. Shared district location provides a useful setting for comparison while leaving room for organisational variation.

The study extends the implementation question raised by broader assessments of nagari readiness. Yuskar et al. (2024) identify the need to strengthen technological and human resource conditions in West Sumatra. The present comparison places attention on how such conditions appear in everyday services and records practices. Its contextual contribution lies in examining operational arrangements within a shared local administrative setting, without claiming that the patterns represent all nagari.

Disclosure inclusion and community influence

The distinction between information distribution and participation is central to the interpretation. Public value requires attention to whether information can be found and used, whether enquiries receive responses, and whether residents have opportunities to influence services. Herdiana's (2019) relational account of smart villages supports attention to these government–community connections. Messaging channels can support communication, but their governance value depends on how they connect to accessible information and responsive administrative practices.

A hybrid arrangement combining digital and assisted face-to-face access is a practical implication of this analysis. It should not be presented as a population-wide preference demonstrated by three community informants. Nor should face-to-face use automatically be attributed to limited digital capability. Service requirements, familiarity, access conditions, or other factors may be relevant, but their prevalence is not established by this study.

Practical implications

Table 5 identifies possible actions and the actors who could implement them. The actions should begin with the operational constraint being addressed and the resources already available. They are recommendations for consideration, not interventions whose costs or effects were evaluated in the study.

Table 5. Proposed actions and responsible actors

Responsible actor	Proposed action	Basis for review
Nagari head and secretary	Assign an operator and trained backup; document recurring tasks.	Task register and demonstrated backup coverage.
Secretary and records staff	Use a consistent archive and access procedure.	Completeness, retrieval, and backup responsibility.

Designated information officer	Maintain an official channel and log enquiries and responses.	Update history, public access, and responses.
Service staff with community input	Retain assisted access and test changes to one service.	User and non-user accounts and access barriers.
District or regency government and technical support	Assess connectivity and maintenance needs; coordinate training.	Outages, equipment needs, responsibilities, and feasible costs.

Implementation could proceed through a small set of recurring tasks before expanding to additional systems. Service records and feedback from users and non-users could then be used to review the changes. Case-specific priorities should follow the documented need, rather than an assumed overall ranking. Claims of savings, faster processing, or increased participation would require subsequent assessment.

Limitations and transferability

The study is limited to three nagari within one district and a reported sample of 12 informants. Nine represent government and three represent community perspectives. This imbalance restricts the assessment of diverse user experiences, non-use, and exclusion. Government accounts may present services differently from users' experiences, while the available community material cannot establish demographic patterns or the prevalence of digital access and preferences.

No baseline or quantitative measure of service performance is presented. Improvements in processing time, transparency, service quality, or participation cannot therefore be treated as measured outcomes. Links between staffing, infrastructure, and practices are interpretive explanations rather than demonstrated causal relationships. Transferability depends on the relevance of the described setting and organisational conditions to other locations; statistical generalisation is not intended.

CONCLUSION

Electronic government in the three nagari is characterised by the use of technology in administrative work, communication, and initial service information, alongside continuing office-based procedures. The principal differences concern the organisation of records and information channels, the distribution of staff capability, and described connectivity and maintenance constraints. The comparison does not establish a validated overall ranking or measured improvements in governance performance.

The analytical contribution is to distinguish digital tool availability, routine use, and integration, and to connect these practices with the institutional arrangements that sustain local government work. Staff responsibilities and backup arrangements provide a useful focus for understanding how individual competence can support continuity. Resident access and feedback remain necessary considerations when judging whether digital practices support smart village governance.

Feasible improvements include shared operational skills, consistent archives, maintained information channels, infrastructure support, and assisted access. Nagari heads and secretaries can coordinate responsibilities, with district and regency support responding to verified needs. Follow-up assessment should examine the feasibility and outcomes of these proposals.

REFERENCES

1. Badan Pusat Statistik Kabupaten Sijunjung. (2025). *Kecamatan Kamang Baru dalam angka 2025.* https://sijunjungkab.bps.go.id/en/publication/2025/09/26/f25f7fd280de1e7cd014f66b/kecamatan-kamang-baru-dalam-angka-2025.html
2. Darmawan, P. A. N., Sholihah, M., & Indrayani, N. M. (2025). Transformasi tata kelola pemerintahan desa menuju smart village melalui digitalisasi layanan administrasi. *Idarotuna: Journal of Administrative Science, 6*(2), 268–280. https://doi.org/10.54471/idarotuna.v6i2.159
3. de Mello, L., & Ter-Minassian, T. (2020). *Digitalisation challenges and opportunities for subnational governments* (OECD Working Papers on Fiscal Federalism No. 31). OECD Publishing.

https://doi.org/10.1787/9582594a-en

4. Dinas Kependudukan dan Pencatatan Sipil Kabupaten Sijunjung. (2025). *Buku data agregat kependudukan semester I tahun 2025.* https://disdukcapil.sumbarprov.go.id/bukudata/up/buku/08122025020401-BUKU-DATA-AGREGAT-2025-KABUPATEN-SIJUNJUNG.pdf
5. Hadian, N., Purwanto, P., & Wibowo, A. (2026). Integrated evaluation model for smart village effectiveness: A mixed-methods and thematic analysis approach. *IEEE Access, 14*, 31483–31501. https://doi.org/10.1109/ACCESS.2026.3665754
6. Herdiana, D. (2019). Pengembangan konsep smart village bagi desa-desa di Indonesia. *Jurnal IPTEKKOM, 21*(1), 1–16. https://doi.org/10.17933/iptekkom.21.1.2019.1-16
7. Herdiana, D., Royani, Y. M., & Wahidah, I. (2022). The public value of e-government at the village level. *Publica: Jurnal Pemikiran Administrasi Negara, 14*(1), 78–90. https://doi.org/10.15575/jpan.v14i1.18011
8. Islamiati, I., Askar, M. W., & Aisyah, H. R. (2026). Empowering rural transformation: The role of good governance in developing smart villages in Indonesia. *Public Integrity.* Advance online publication. https://doi.org/10.1080/10999922.2026.2637336
9. Malterud, K., Siersma, V. D., & Guassora, A. D. (2016). Sample size in qualitative interview studies: Guided by information power. *Qualitative Health Research, 26*(13), 1753–1760. https://doi.org/10.1177/1049732315617444
10. Nursetiawan, I., & Putra, R. A. K. (2026). Efektivitas implementasi e-governance dalam pengembangan smart village di Kabupaten Ciamis. *Dinamika: Jurnal Ilmiah Ilmu Administrasi Negara, 13*(1), 208–217. https://doi.org/10.25157/dak.v13i1.23988
11. O'Brien, B. C., Harris, I. B., Beckman, T. J., Reed, D. A., & Cook, D. A. (2014). Standards for reporting qualitative research: A synthesis of recommendations. *Academic Medicine, 89*(9), 1245–1251. https://doi.org/10.1097/ACM.0000000000000388
12. Organisation for Economic Co-operation and Development. (2014). *Recommendation of the Council on Digital Government Strategies* (OECD/LEGAL/0406). https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0406
13. Putro, Y. L. C. A., & Besa, M. (2025). The dynamics of e-government-based administrative public services. *JIAPI: Jurnal Ilmu Administrasi dan Pemerintahan Indonesia, 6*(1), 48–59. https://doi.org/10.33830/jiapi.v6i1.11805
14. Sihotang, D. M., Hidayanto, A. N., & Kurnia, S. (2025). The e-government adoption ecosystem from the perspective of stakeholder theory: A case study on the village information systems in Indonesia. *Information Development, 41*(4), 1342–1355. https://doi.org/10.1177/02666669231192879
15. Sihotang, D. M., Purwandari, B., Eitiveni, I., Putri, M. F., & Hidayanto, A. N. (2023). Factors influencing village information systems adoption in Indonesia: A qualitative study. *The Electronic Journal of Information Systems in Developing Countries, 89*(5), Article e12271. https://doi.org/10.1002/isd2.12271
16. Yuskar, Y., Bahari, A., Putra, E. G. E., Rahmadoni, J., & Mazelfi, I. (2024). Analysis of the Nagari readiness in implementing the smart village in West Sumatera, Indonesia. *Electronic Government, an International Journal, 20*(4), 422–441. https://doi.org/10.1504/EG.2024.139500