

Village Data Management Information System (Simata Desa) Case Study of the Simata Desa Application Implementation in Gunung Sembilan Village and Pangkalan Buton Village Sukadana District, Kayong Utara Regency

Ade Kharisma¹, Zulkarnaen², Erdi³

¹Postgraduate Program of Public Administration, Faculty of Social and Political Sciences, Tanjungpura University

^{2,3}Department of Public Administration, Tanjungpura University

ABSTRACT: The implementation of information systems at the village level will not be effective without the support of competent human resources and a ready organizational structure. This study aims to examine the implementation of the SIMATA DESA application in Gunung Sembilan Village and Pangkalan Buton Village, Kayong Utara Regency. The method used is descriptive qualitative with a case study method and an interpretive approach that emphasizes the experiences of individual subjects. The results of the study indicate that the implementation of SIMATA DESA is influenced by several main factors: (1) Gunung Sembilan Village has a more systematic organization with a clear implementing unit, while Pangkalan Buton Village only relies on one operator who holds a dual position, causing delays in data input; (2) Operators' digital competence is influenced by age and education, where young operators in Gunung Sembilan are more adaptive than older operators in Pangkalan Buton; (3) The availability of work equipment is adequate, but archive management and internet access are better in Gunung Sembilan; (4) Minimal budget support from the district government limits technical training and mentoring, creating a gap in application mastery; (5) Double workloads cause inconsistent data entry. From an interpretation aspect, there are differences in perception: Gunung Sembilan sees SIMATA DESA as a means of modernization, while Pangkalan Buton sees it as an additional burden due to the lack of formal regulations. The main findings of this study confirm that the success of SIMATA DESA implementation is determined by the digital competence of operators, the support of functional implementing units, and technical mentoring and regular supervision from the district government. Visionary village leadership is key to making this innovation meaningful.

KEYWORDS: Village Data Management Information System, Simata Desa App. Implementation, Kayong Utara Regency.

INTRODUCTION

The development of digital technology has also shaped village governance. E-Government is no longer an option, but an absolute necessity. Based on Law No. 6 of 2014, Article 86 paragraph 4, the village information system must include data on village development, territory, and institutions. A classic problem often encountered in the implementation of village governance is the difficulty in obtaining accurate and up-to-date data related to Village Community Institutions (LKD). In fact, Law No. 6 of 2014 concerning Villages expressly mandates that villages must submit LKD data reports to the district government in a hierarchical manner, at least once a year, as a basis for implementing the guidance and supervision function of LKD existence and performance at the village level. However, in practice, these reports are often unavailable or difficult to access by local governments, thus hampering the effective guidance process and less targeted government activity planning. According to data collected by the Village Government Sector of the Social Service for Women's Empowerment, Child Protection, Community and Village Empowerment in the last few years until 2023, only 39.53% (17 out of 43) villages in Kayong Utara Regency submitted reports on the formation and renewal of Village Community Institutions in the form of physical documents.

In response to these issues, the Kayong Utara Regency Government implemented an information technology-based innovation from the West Kalimantan Provincial Government in the form of the Village Data and Management Information System (SIMATA DESA) application in 2023, this application is designed as an online and integrated LKD data reporting platform between levels of government (Government to Government/G2G). However, in terms of its implementation, the implementation of the SIMATA DESA application at the village level still faces various significant challenges. Problems include the suboptimal organizational structure of policy implementers in the village, imbalances in human resource capacity and low digital competency of village operators, as well as limited financial resources that have an impact on minimal socialization activities and training on application use.

Village Data Management Information System (Simata Desa) Case Study of the Simata Desa Application Implementation in Gunung Sembilan Village and Pangkalan Buton Village Sukadana District, Kayong Utara Regency

Furthermore, the absence of technical regulations in the form of a Regent's Regulation that specifically governs the implementation of this application has led to differing perceptions among policy implementers. Complexity is further exacerbated by the workload of operators or village officials who must handle multiple applications simultaneously, coupled with concurrent positions, resulting in less than optimal implementation effectiveness. Furthermore, the weakness of direct monitoring and evaluation mechanisms in the field also exacerbates the challenges in implementing this policy. Therefore, it is important to further examine how the SIMATA DESA policy is implemented at the village level, to identify supporting and inhibiting factors, and to provide constructive recommendations for strengthening the digital reporting and governance system for village data.

LITERATURE REVIEW

The development of information and communication technology has paved the way for digital transformation in rural areas. With increasing internet access in villages, village governments now have the opportunity to manage administration and reporting more effectively through digital systems. One concrete implementation of this transformation is the implementation of the Village Management Information and Data System (SIMATA DESA), developed by the West Kalimantan Provincial Government and implemented in Kayong Utara Regency. According to Laudon and Laudon (2020), an information system is a set of interrelated components for collecting, processing, storing, and distributing information. In the context of this research, the system refers to SIMATA DESA, which is designed to help village governments manage village institutional data, particularly Village Community Institutions (LKD) in a systematic, web-based, and integrated manner. This system implements the principles of eGovernment, as explained by Richard Heeks (2001), namely the use of information technology to strengthen government efficiency, transparency, participation, and responsiveness in carrying out public service duties.

SIMATA DESA is not just a digital administrative tool, but also a medium for intergovernmental interaction (Government-to-Government/G2G) that supports real-time data reporting from villages to the district and provincial levels. According to Jones's (1996) theory of public policy implementation, such information systems play a crucial role in the process of organizing, interpreting, and applying policies, as they provide a strong data foundation for decision-making. In its implementation, SIMATA DESA has a strategic function in supporting information transparency and strengthening village governance. This aligns with Law Number 6 of 2014 concerning Villages, particularly Article 86, which states that villages have the right to manage information systems to support participatory and accountable village planning and development. Thus, SIMATA DESA functions not only to store data but also as a monitoring, coaching, and evaluation tool for district and provincial governments regarding the performance of village institutions. However, despite the system's design, various challenges remain in its implementation. As stated by Priyanti and Iriani (2013), technical obstacles such as data errors, slow data searches, and late reports often occur in village information systems.

This indicates that the successful implementation of SIMATA DESA is highly dependent on the readiness of human resources (HR), the availability of digital infrastructure, and the village apparatus' understanding of the policy. In this context, Henry C. Lucas (in Astuti, 2011) emphasized that a well-organized information system will provide relevant information that can improve control and decision-making within organizations, including village government. Therefore, the SIMATA DESA implementation approach must consider the characteristics of the digital generation of village officials (Prensky, 2001), as well as ongoing technical training support as suggested by Rachmawati and Mustaghfiroh (2022). This is where the importance of the role of SIMATA DESA operators as the Digital Intellectual Generation (GDI) who bridges digital technology and local administrative needs. By considering aspects of implementation theory, information technology, and the underlying legal regulations, SIMATA DESA can serve as a modern instrument in building a village government system that is more transparent, efficient, and adaptive to digital dynamics.

METHOD

The method used is descriptive qualitative with a case study method, this approach was chosen to describe in depth the process of implementing SIMATA Village in the research location and combined with Cresswell's interpretive approach which emphasizes the experience of individual subjects, this study seeks to understand the conditions of local actors interpreting and adapting village digitalization policies through the SIMATA DESA Application to existing socio-cultural conditions. The research locations are in Gunung Sembilan Village and Pangkalan Buton Village. Gunung Sembilan Village was chosen because the level of SIMATA DESA data occupancy is quite high (88.8%) with a well-managed Organizational Structure, on the other hand, Pangkalan Buton Village was chosen because data occupancy is still low and organizational support is limited. The choice of contrasting locations allows for a richer comparative analysis. The research subjects were determined by purposive sampling technique, namely the parties directly involved in the implementation of SIMATA DESA. Key informants include: (1) Village SIMATA DESA Operator, (2) Village Head, (3) Head of the Regency Community Empowerment Division, (4) Head of the Village Government Division, (5) Regency Operator Staff, and (6) related village officials. The object of the research is the SIMATA DESA implementation process, including the behavior, interactions, and interpretations of policy actors in running the system.

RESULT AND DISCUSSION

From the implementation of the research, it was found that the effectiveness of SIMATA DESA implementation was influenced by five main factors, namely (1) Implementing Organizational Structure (Organizing), Gunung Sembilan Village showed a more systematic organization through the formation of implementing units and involvement of cross-village apparatus. In contrast, Pangkalan Buton Village relied on one operator who held multiple positions, resulting in low SIMATA DESA data entry. (2) Human Resource Readiness and Digital Competence The educational background and age of operators were determining factors. Young and highly educated operators in Gunung Sembilan were more adaptive to digital systems, while elderly operators in Pangkalan Buton experienced technical difficulties, until finally they were replaced. (3) Facilities and Infrastructure: Both villages had relatively adequate work equipment, but the orderliness of physical archives and internet access was better in Gunung Sembilan, supporting the smooth input of SIMATA DESA data. (4) Funding and Training: The lack of budget support from the district government limited technical training and mentoring. The district government implemented a phased approach, but created gaps between villages in application mastery (5) Workload and Time Operators in both villages faced a double workload because they had to handle many applications. This hampers the consistency of SIMATA DESA data input and causes reporting delays.

Results: In terms of interpretation, understanding and perceptions of SIMATA DESA differed across villages. Gunung Sembilan Village viewed the application as a solution for administrative modernization, while Pangkalan Buton Village viewed it as an additional workload due to the lack of formal regulations, such as a binding Regent's Regulation. The collective and open work culture in Gunung Sembilan also contributed to effective implementation, in contrast to the hierarchical work culture in Pangkalan Buton. The implementation of the Village Management Information and Data System (SIMATA DESA) in Kayong Utara Regency demonstrated complex dynamics at the village level. Referring to Charles O. Jones's (1984) policy implementation model, this process was analyzed through the stages of organizing, interpreting, and applying, and further explored using Creswell's interpretive approach, which emphasizes the subjective meanings of policy implementers.

1. **Implementing Organizational Structure (Organizing).** According to O. Jones' theory, organization is the initial foundation for successful policy implementation, with a focus on structuring institutional structures and assigning roles. In Gunung Sembilan Village, the formation of an implementing unit through a staff meeting, the appointment of two operators, and the placement of the secretariat as the leading sector demonstrate that the policy is being implemented through a formal, participatory structure. This aligns with the principle of organizational readiness, which emphasizes the importance of structural readiness to absorb policy innovations. In contrast, Pangkalan Buton Village exhibits top-down and individualistic organizing practices. Operators were appointed without the support of supporting work units and without collective involvement. As a result, the workload rests on a single individual and data input stagnates. This reflects weak coordination and organizational alignment, which O. Jones identified as a major risk factor for early-stage implementation failure.
2. **Human Resource Readiness and Digital Competence.** The organizing stage in Jones's model also includes human resource management. In Gunung Sembilan, operators have higher education backgrounds and are of productive age. This makes it easier for them to access, understand, and operate the SIMATA DESA digital system. This human resource readiness reinforces Lucas' (2001) theory, which emphasizes that a good information system must be supported by implementers with high technological literacy. In contrast, operators in Pangkalan Buton (2023–2024) are from Generation X with limited education and digital experience, consistent with the characteristics of digital immigrants (Prensky, 2001). Creswell's interpretive approach suggests that age, manual work habits, and lack of technological experience contribute to low perceptions and motivation in using the new system, leading to personnel rotation in 2025.
3. **Facilities and Infrastructure:** Within the framework of implementation theory, facilities and infrastructure are part of resource allocation. Gunung Sembilan Village is able to provide stable Wi-Fi access and systematic archive management, despite being located in an area with poor signal. This demonstrates adaptive capability in addressing geographic constraints. Buton Base, despite having basic equipment, failed to maintain the readiness of the physical archives that serve as the basis for data input. From an interpretive perspective, the weak awareness of the importance of documentation and the tidiness of physical data reflects organizational values that are not yet aligned with the demands of digitalization.
4. **Funding and Training** Budget availability is part of the supporting environment in Jones's theory. The district's phased approach realistically adjusts to fiscal conditions, but creates disparities between villages. Gunung Sembilan was able to address the gap in formal support through self-learning initiatives and informal relationships with district operators. Pangkalan Buton, on the other hand, received no reinforcement after the initial training, demonstrating the weak effect of knowledge transfer without regular support. In Creswell's approach, the district government has not fully internalized the meaning of training as a longterm investment. However, technological literacy only grows if supported by a sustainable learning ecosystem.
5. **Workload and Time:** Time resources are a crucial but often hidden dimension in public policy. Jones's model states that time is essential for organization and implementation efficiency. Operators in both villages experienced work overload, with multiple applications. Gunung Sembilan was able to manage the workload internally, while in Pangkalan Buton the workload was individualistic and unstructured. Interpretive analysis shows that time is not simply a measure of working hours, but a reflection

Village Data Management Information System (Simata Desa) Case Study of the Simata Desa Application Implementation in Gunung Sembilan Village and Pangkalan Buton Village Sukadana District, Kayong Utara Regency

of priority structures, work culture, and task management. When time management is not designed into the work structure, application input becomes disrupted even though devices and human resources are available.

6. Interpretation and Perception of SIMATA DESA. At the interpretation stage, Jones emphasized the importance of implementers' understanding of the policy's intent. Gunung Sembilan interpreted the circular as a form of formal legitimacy and welcomed SIMATA DESA as an instrument of village modernization. This demonstrates alignment between organizational values and policy direction. In contrast, Pangkalan Buton interpreted the circular as a non-mandatory recommendation because it was not reinforced by regent-level regulations. This interpretation reflects a legalistic approach and reliance on top-down commands, rather than on interpreting benefits. This aligns with Edwards' (1980) finding that policy ambiguity leads to variation in compliance.
7. Local Culture as an Implementation Variable. Creswell's interpretive approach explicitly opens up space to understand the role of local culture. Gunung Sembilan demonstrates a collective work culture responsive to innovation, while Pangkalan Buton exhibits a hierarchical and multitasking bureaucracy without systematic work management. This culture shapes how policies are interpreted, implemented, and responded to by village officials. In the context of SIMATA DESA, work culture serves as both a bridge and a barrier to digitalization. Therefore, implementation cannot be standardized, but requires cultural contextualization that takes local social values into account.

CONCLUSIONS

This research shows that the successful implementation of the Village Management Information and Data System (SIMATA DESA) is heavily influenced by organizational factors, human resource competency, infrastructure readiness, budget support, and local perceptions and work culture. Gunung Sembilan Village was able to implement SIMATA DESA more effectively due to its clear organizational structure, digitally competent operators, and collaborative work culture. In contrast, Pangkalan Buton Village faced several obstacles, such as limited operators, multiple workloads, and negative perceptions of the policy, caused by weak regulatory support and technical training.

Charles O. Jones's policy implementation model helps explain that the stages of organizing (institutional and human resource arrangements), interpretation (implementer understanding and perceptions), and application (technical application) cannot stand alone but are interconnected for successful implementation. Creswell's interpretive approach demonstrates that the reality of SIMATA DESA's implementation is shaped by the social context, experiences, and local values inherent in village officials.

Thus, SIMATA DESA is not simply a digital innovation, but rather an instrument for transforming village governance that requires structural readiness, value alignment, and simultaneous technical and political support from the village to the district level. Digital policies like SIMATA DESA must be viewed as social change projects, not merely technological ones. Therefore, their success is determined by the extent to which these systems are integrated into the structure, meaning, and local work routines of the village.

RECOMMENDATION

1. Establishing an Implementing Organizational Structure: Village governments need to formally establish SIMATA DESA implementing units, with a proportional and cross-sectoral division of roles according to their core duties and functions, and support for two-way communication between village officials.
2. Improving Human Resources Competence: Operator appointments must take into account productive age, educational background, and digital skills. Technical training should be conducted routinely and adaptively to local needs, not just once at the beginning of implementation.
3. Improving Facilities and Archives: Village governments need to improve archiving facilities and physical documentation systems to support the validity of SIMATA DESA data input. Digital infrastructure readiness must be accompanied by systematic administrative document management.
4. Budget Strengthening and Mentoring: District governments need to allocate a dedicated budget for SIMATA DESA training and evaluation. Villages should also utilize Village Funds to support independent operator capacity building activities.
5. Workload Management and Input Schedule: SIMATA DESA operator tasks must be distributed freely without multiple positions or time-consuming fieldwork. A realistic and consistent data input schedule must be established to prevent task overload.
6. The issuance of a formal legal basis, a Regent's Regulation, as the legal basis for SIMATA DESA's implementation, is essential for this policy to have mandatory force. This regulation must be accompanied by structured socialization and monitoring.
7. Sub-district-Based Monitoring: Regencies and provinces can develop a monitoring system through administrator accounts at the sub-district level to bridge supervision between villages and regencies.
8. Village Government Application Integration: The central and regional governments need to review the rationalization of village applications to avoid duplication of data input and excessive administrative burdens. SIMATA DESA can be integrated as the primary platform for village institutional data management.

REFERENCES

- 1) Creswell, J. W. (2014). Research design: Qualitative, quantitative, and mixed methods approaches (4th ed.). Sage
- 2) Creswell, J. W. (2018). Qualitative inquiry & research design: Choosing among five approaches (4th ed.). Sage
- 3) Edwards, G. C. (1980). Implementing public policy. Congressional Quarterly Press
- 4) Heeks, R. (2001). Understanding e-Government for development. Institute for Development Policy and Management, University of Manchester
- 5) Indrajit, R. E. (2006). E-Government: Strategi pembangunan dan pengembangan sistem pelayanan publik berbasis teknologi digital. Andi Offset
- 6) Jones, C. O. (1984). An introduction to the study of public policy (3rd ed.). Brooks/Cole
- 7) Laudon, K. C., & Laudon, J. P. (2020). Management information systems: Managing the digital firm (16th ed.). Pearson.
- 8) Lucas, H. C. (1990). Information systems concepts for management. McGraw-Hill
- 9) Martani, H., & Lubis, L. H. S. B. (1987). Teori organisasi: Suatu pendekatan makro. Pusat Antar Universitas Ilmu-Ilmu Sosial Indonesia
- 10) Prensky, M. (2001). Digital natives, digital immigrants. On the Horizon, 9(5), 1–6.
<https://doi.org/10.1108/10748120110424816>
- 11) Priyanti, D., & Iriani, A. (2013). Hambatan dalam penerapan sistem informasi desa: Studi kasus di Jawa Timur. Jurnal Teknologi Informasi dan Komunikasi, 2(1), 45–56
- 12) Rachmawati, N., & Mustaghfiroh, R. (2022). Adaptasi digital perangkat desa di Indonesia. Jurnal Administrasi Publik, 19(2), 145–160
- 13) Undang-Undang Nomor 6 Tahun 2014 tentang Desa. (2014). Lembaran Negara Republik Indonesia Tahun 2014 Nomor 7
- 14) Widodo, J. (2006). Analisis kebijakan publik: Konsep dan aplikasi proses kebijakan publik. Bayumedia Publishing



There is an Open Access article, distributed under the term of the Creative Commons Attribution – Non Commercial 4.0 International (CC BY-NC 4.0) (<https://creativecommons.org/licenses/by-nc/4.0/>), which permits remixing, adapting and building upon the work for non-commercial use, provided the original work is properly cited.