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DIGITAL TRANSFORMATION IN VILLAGES: A POLICY IMPLEMENTATION APPROACH IN KAJOWAIR VILLAGE, NUSA TENGGARA TIMUR

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ABSTRACT

The digital transformation of public services in rural areas represents a pivotal effort in bridging the urban-rural divide, yet its implementation faces unique challenges at the micro level. This study examines the policy implementation of the Village Management and Service Information System (Simpeldesa) in Kajowair Village, Nusa Tenggara Timur (NTT), highlighting its distinct approaches compared to other villages. Employing a qualitative descriptive method, this research engaged 15 key participants, including village leaders, administrative officials, and community members. Data collection encompassed in-depth interviews, direct observations of Simpeldesa operations, document analysis, and literature reviews. Findings reveal that Simpeldesa implementation demonstrates a commitment to digital transformation, with strong disposition from village officials and strategic bureaucratic structures fostering effective coordination. However, challenges remain, particularly in communication and infrastructure. Limited program socialization and reliance on orbit-based internet coverage impede broader community engagement and optimal service delivery. Despite these obstacles, the allocation of substantial resources and the program's initial success—evidenced by 50% progress in administrative data integration—underscore the potential of Simpeldesa to improve rural governance. This study contributes to the theoretical development of policy implementation by emphasizing the role of communication, resource allocation, disposition, and simplified bureaucratic structures in the success of digital transformation at the village level. Practical recommendations include enhancing community outreach and expanding infrastructure support to ensure inclusive and sustainable digitalization. The findings provide a framework for other rural areas seeking to adopt similar innovations, advancing both theoretical and practical discourse in social and human sciences.

Keywords: Digital Transformation, Policy Implementation, Rural Public Services, Simpeldesa, Village

INTRODUCTION

Digital transformation has become a top priority in government management across various levels, including at the village level. In the era of the Fourth Industrial Revolution, digitalization is seen as a crucial instrument to enhance the efficiency, transparency, and accessibility of public services (Aldien et al., 2024; Fadri & Fil, 2024; Oktavia & Frinaldi, 2024). However, despite intensive efforts to accelerate digitalization, villages in Indonesia, particularly in eastern regions such as Kajowair Village, Sikka Regency, Nusa Tenggara Timur, still face significant challenges. Limited internet access, low digital literacy, and cultural resistance are major obstacles to implementing public service digitalization (Oktavia & Frinaldi, 2024;

Rakhmawan, 2022). This issue is critical, considering villages play a strategic role in national development, especially in providing quality services to communities often marginalized from the mainstream of technological transformation.

Previous studies have offered insights into the challenges and opportunities of digitalization at the village level. Brunetti et al. (2020) and Firmansyah et al. (2024) identified three primary challenges in digital transformation in rural areas: infrastructure, digital literacy, and cultural resistance. Research by Faruque et al. (2024), Saputra (2024), and Sartini et al. (2024) emphasized the importance of effective communication and community training in overcoming resistance to digital technology. Meanwhile, H. Saputra (2021) revealed that the failure of village information systems implementation in Indonesia is often due to weak pre-implementation analysis and unprepared supporting infrastructure. Xiao et al. (2024), through longitudinal research in 50 villages, underscored the need for adaptive policy implementation approaches to improve the success of digitalization.

Additionally, research by Putri & Kanda (2024) on the implementation of the Simpeldesa application in Mekarmukti Village showed that low community participation and limited technological understanding are key factors hampering the program's effectiveness. These findings were reinforced by Ariansyah et al. (2023) and Malodia et al. (2021), who highlighted the importance of policymaker support and intensive outreach in implementing e-government in villages. This research also noted that the success of digitalization depends not only on infrastructure but also on human resource capacity and adequate financial support.

In the context of Kajowair Village, the digitalization program through the Village Information and Service Management System (Simpeldesa) reflects efforts to address these challenges. However, data indicate that internet penetration in this area is only 51.88%, far below the national average, highlighting a significant digital divide. Furthermore, digital literacy in the region still requires improvement, as reflected in a survey conducted by the Ministry of Communication and Information Technology (Nuri et al., 2024). Despite these challenges, support from the village government and the commitment of village officials to establish Kajowair Village as the first digital village in Hewokloang Subdistrict demonstrates a positive potential that warrants further exploration.

Although various studies have addressed the implementation of digitalization at the village level, there remains a lack of empirical research specifically analyzing the application of e-government policies in Kajowair Village. Unlike previous studies, this research emphasizes an in-depth analysis of the implementation of Simpeldesa in Kajowair Village using Edward III's policy implementation theory, encompassing the variables of communication, resources, disposition, and bureaucratic structure. The study aims to identify the factors influencing the success and challenges in implementing Simpeldesa while providing practical recommendations for the development of digitalization policies at the village level. Thus, the findings of this study are not only practically relevant but also contribute theoretically to the development of the policy implementation literature in the village context.

RESEARCH METHOD

This study employs a qualitative descriptive approach to provide an in-depth understanding of the implementation of the digital service program policy through the Village Information and Service Management System (Simpeldesa) in Kajowair Village, Hewokloang Subdistrict, Sikka Regency, Nusa Tenggara Timur. This approach was chosen for its ability to explore the complex social, cultural, and technical dynamics at the village level (Susilo et al., 2021). Its flexibility allows for capturing nuanced qualitative data, although the potential for subjective bias remains a challenge. To mitigate bias, the researchers used data triangulation and discussions with experts to verify the findings (Ahmed, 2024).

The data for this study were collected through various complementary methods. In-depth interviews were conducted with ten informants selected using purposive sampling based on their roles and relevance to the implementation of Simpeldesa. These informants included the village head, village officials, and service users. The interview guidelines were designed to explore aspects of communication, the disposition of officials, and the program's infrastructure. Additionally, direct observations were made to document interactions between village officials and residents and to identify technical constraints that arose during service delivery (Nuryananda et al., 2024). Systematic observation sheets were used to ensure focused data collection. Document studies also played a significant role in data collection, analyzing village financial reports, program archives, and technical data related to Simpeldesa to strengthen findings from interviews and observations. A literature review on the digitalization of village services and policy implementation theory was also undertaken to provide a theoretical context supporting data analysis (Popenoe et al., 2021).

The data analysis was conducted in stages to ensure structured and in-depth results. This process began with data reduction, where information obtained from interviews, observations, and documentation was filtered to include only data relevant to the research objectives (Jumriani et al., 2022). The reduced data were then organized into narratives, tables, and diagrams to facilitate comprehension. The data presentation followed analytical categories such as communication, disposition, and infrastructure (Lin et al., 2024). The final stage involved drawing conclusions, where the researchers used policy implementation theory to interpret the data and produce comprehensive insights into the successes and challenges of Simpeldesa's implementation.

The research was conducted over three months. In the first month, October 2024, the focus was on preparation, including the development of research instruments and the identification of informants. The second month, November 2024, was dedicated to data collection through interviews, observations, and document studies. The final month, December 2024, was used for data analysis, findings verification, and final report preparation.

To ensure data validity and reliability, the researchers implemented various strategies. Data validity was maintained through method triangulation (interviews, observations, and documentation) and source triangulation (informants from diverse backgrounds). Member

checks were conducted by confirming findings with key informants, while discussions with experts were employed to avoid biased interpretations. Data reliability was enhanced through the use of standardized interview guidelines and observation sheets, ensuring consistent data collection procedures (Karunarathna et al., 2024).

RESULTS AND DISCUSSION

Initial Steps in Digitalization: Implementation of Simpeldesa in Kajowair Village

Kajowair Village in Hewokloang Sub-district, East Nusa Tenggara, has made significant progress in digital transformation through the implementation of the Village Management and Service Information System (Simpeldesa). As a pioneer of public service digitalization in its region, the village government has demonstrated a strong commitment to optimizing technology-based administration. This program successfully automated several administrative processes, such as population data management and service requests, which were previously handled manually. A village official remarked, "Simpeldesa greatly assists us in streamlining administrative services, particularly in managing population documents."

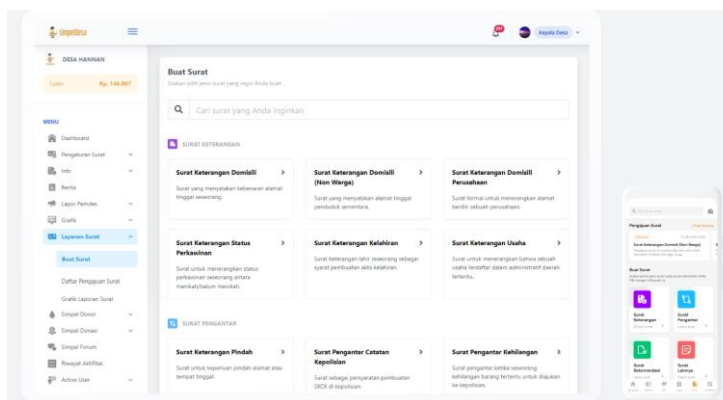


Figure 1 Front Display of Simpeldesa

Source: <https://www.simpeldesa.com/> (2024)

The village government's commitment is evident from the budget allocation of IDR 50 million for implementing and maintaining this system. The technological infrastructure provided includes hardware such as laptops and smartphones, which support Simpeldesa's operations. Technical training facilitated by the Community Empowerment and Village Service Office (Dinas Pemberdayaan Masyarakat dan Desa, DMPD) has also enhanced human resource capacities among village officials. However, the level of digital literacy among the community remains a major challenge, with only about 50% of residents being able to use the technology effectively.

The Simpeldesa operator explained, "Training has been conducted, but the challenge lies in familiarizing the community with this technology. More intensive socialization and extended time are needed." Another challenge is the limited internet access. Kajowair Village still relies on orbit networks with restricted coverage, which often disrupts digital services. A village official

added, “Sometimes the signal suddenly drops, causing delays in service processes.”

Despite these challenges, the implementation of Simpeldesa is supported by a hierarchical organizational structure with clear task divisions, as well as digital Standard Operating Procedures (SOPs) that ensure transparency and efficiency. Regular monitoring by DMPD helps prevent overlapping authorities and provides guidance for further development. The village head of Kajowair stated, “We regularly hold evaluations with the DMPD team to ensure the program runs according to targets.”

Although some development plans, such as planning and performance data collection for village officials, are still in their early stages, this initial step has already shown positive results. The implementation of Simpeldesa not only represents a breakthrough in village administration but also serves as a symbol of digital transformation that has the potential to inspire other villages in Indonesia. The sustainability of this program requires strategic steps, such as expanding internet access, improving community digital literacy, and strengthening evaluation mechanisms (Malaikosa et al., 2024). With these measures, Simpeldesa has the potential to become a successful model for public service digitalization at the village level.

Driving the Village in the Digital Era: The Commitment of Kajowair Village Officials in Implementing Simpeldesa

Kajowair Village stands as a tangible example of how digital transformation can be accelerated through the commitment and hard work of village officials. In implementing Simpeldesa, the village apparatus has demonstrated a proactive and positive attitude towards digital innovation as a strategic tool for enhancing the efficiency and transparency of public services. The allocation of IDR 50 million and monthly incentives of IDR 250,000 for Simpeldesa operators reflect the priority the village government places on service digitalization.

The active participation of village officials in information technology training, despite many lacking formal backgrounds in the field, illustrates their willingness to learn and adapt. This signifies an ongoing shift in the work culture, although it still requires time and sustained support. Moreover, the absence of resistance at the bureaucratic level strengthens confidence that the program has a significant chance of success (Nugraha, 2022). Periodic evaluation mechanisms involving DMPD, the Simpeldesa team, and the village government foster effective coordination, enabling the identification of challenges and opportunities for improvement collaboratively.

Although challenges persist, particularly in improving community digital literacy and technological accessibility, the cultural transformation of work practices also demands time to fully materialize. Continuous support through training, infrastructure strengthening, and mentoring is crucial to ensuring the program's sustainability. With a solid foundation, Kajowair Village has proven that digitalization is not merely a discourse but a concrete step towards more efficient and competitive public services. The village serves as an inspiring model for other regions in Indonesia, demonstrating that adaptation and innovation can drive inclusive and sustainable digital transformation.

Building Digital Bridges: Communication and Socialization Strategies for Simpeldesa in Kajowair Village

Digital transformation at the village level requires robust communication and inclusive socialization strategies to reach all community layers. However, the implementation of Simpeldesa in Kajowair Village reveals that communication remains one of the primary challenges in fostering public acceptance and participation. The program's socialization, limited to neighborhood leaders (RT and RW) and several community organizations, has left many residents unaware of the system's benefits. The lack of tailored socialization methods that align with the community's digital literacy level exacerbates the issue. Older residents and those without direct access to technology often struggle to understand how Simpeldesa can enhance the efficiency of village administrative services. This creates a knowledge gap that could hinder the village's digital transformation.

Despite these challenges, efforts have been made to provide interaction and feedback mechanisms through WhatsApp groups. While some residents use these groups to ask questions and submit complaints, this medium remains insufficiently effective, as not everyone has adequate access or feels comfortable using digital platforms. Furthermore, the current feedback system does not effectively capture constructive input, which is crucial for improving and refining Simpeldesa. To address these challenges, a more strategic and inclusive communication approach is essential. Socialization should involve face-to-face methods through local forums such as community meetings, religious gatherings, or traditional events, which are more familiar to the local population (Yanfika et al., 2022). Additionally, visual media such as posters, simple animated videos, and live demonstrations of how Simpeldesa works can help improve public understanding.

Another critical step is strengthening the feedback mechanism. Beyond WhatsApp groups, the village government can utilize simple technologies, such as physical suggestion boxes placed at the village hall or brief questionnaire-based surveys. This approach ensures that residents less familiar with digital technology still have an avenue to participate in system improvements. Kajowair Village has significant potential to become a pioneer of village digitalization in East Nusa Tenggara. However, the success of this program relies not only on technology but also on effective communication and socialization. By building effective communication bridges, digital transformation can go beyond administrative solutions, becoming an inclusive step that empowers communities from diverse backgrounds.

The Dynamics of Digitalization at the Village Level: New Findings and Theoretical Implications

Digitalization at the village level increasingly demonstrates its role as a strategic solution to improving the quality of public services. This study highlights these dynamics by identifying three key factors that determine the success of digital policy implementation: the commitment of officials, adequate infrastructure, and effective communication. The combination of these three factors serves as a critical foundation for building a well-functioning digital ecosystem,

particularly in resource-limited areas such as Kajowair Village.

The commitment of village officials has proven to be the primary driver of successful digital policies. Responsive and proactive officials in adopting technology create a work environment conducive to digital transformation. This not only enhances administrative efficiency but also strengthens public trust in service delivery. Policies such as allocating dedicated budgets and providing incentives for Simpeldesa operators demonstrate that tangible support from village leaders significantly influences program success.

Adequate infrastructure also plays a crucial role in the digitalization process. The availability of technological devices such as laptops and smartphones, along with internet connectivity, enables the operationalization of digital systems (Zebua et al., 2023). However, the lack of reliable internet access in many villages, including Kajowair, poses a significant challenge that must be addressed. This study emphasizes the importance of continuous investment in digital infrastructure development to sustain the program.

Moreover, effective communication is vital for ensuring community understanding of digitalization programs. Structured and comprehensive socialization efforts, along with clear feedback mechanisms, can bridge the digital literacy gap at the community level (Junaidi et al., 2024). In the context of Kajowair Village, implementing inclusive communication approaches presents a unique challenge, as many residents are still unfamiliar with technology.

This study also provides new perspectives on policy implementation theory. The findings reveal that adapting implementation approaches to the local characteristics of villages, such as community digital literacy levels and infrastructure limitations, is crucial for achieving success. These insights enrich policy implementation theories by introducing locality as a key factor.

Strengthening the Foundation of Digitalization: Strategic Recommendations for the Success of Simpeldesa

The findings of this study underscore the importance of strategic measures to ensure the sustainability and effectiveness of the implementation of the Village Information and Service Management System (Simpeldesa) in Kajowair Village. While significant progress has been made, challenges such as uneven community participation, limited internet access, and the need for capacity building among village officials require serious attention. Therefore, the recommendations focus on enhancing community participation, strengthening infrastructure, and developing human resources (Azima et al., 2022).

The Simpeldesa program's socialization efforts must be designed to be more intensive and inclusive to reach all community segments. Approaches targeting groups with low digital literacy, such as direct simulations or the use of simple visual media, can help improve understanding of the program's benefits. One village official remarked, "The community needs to see firsthand the benefits of this program in their daily lives to be more interested in participating." Moreover, involving community leaders and traditional figures in the socialization process can enhance trust and acceptance of the program.

Limited internet access remains a major obstacle affecting the smooth operation of Simpeldesa. This study recommends collaboration between the village government and internet service providers to expand network coverage and improve connection stability. Efforts could include procuring signal boosters in hard-to-reach areas or subscribing to more reliable internet services (Prabowo, 2023). Additionally, allocating additional budgets for technological infrastructure should be considered to ensure the program operates without significant technical disruptions.

Human resources are pivotal to the success of digitalization. Information technology training for village officials must be conducted continuously, rather than as a one-off activity. These training programs should be designed to enhance technical and managerial skills, including knowledge of data security and software maintenance (Afrianto et al., 2022). A Simpeldesa operator noted, "We feel the need for advanced training, especially to address complex technical issues." Thus, village officials can gain confidence in operating the system and resolving technical problems independently. These strategic recommendations provide a solid foundation for Kajowair Village to strengthen its digitalization efforts. By expanding socialization initiatives, improving digital infrastructure, and enhancing human resource capacities, Simpeldesa has the potential to become a model of successful village-level digitalization. The program's success will not only improve administrative efficiency but also foster a more inclusive and empowered community development.

CONCLUSION

The implementation of the Village Management and Service Information System (Simpeldesa) in Kajowair Village marks a significant step in supporting the digital transformation of public services at the village level. This study reveals that the success of digitalization hinges on three key factors: the commitment of officials, adequate infrastructure, and effective communication. In Kajowair, the village government's commitment is evident through budget allocation, staff training, and the utilization of digital infrastructure, which collectively enhance administrative efficiency and transparency. However, challenges such as limited internet access, low digital literacy among residents, and insufficient program socialization persist. The study emphasizes the importance of adapting implementation strategies to local conditions, highlighting how collaboration with internet service providers, ongoing technological training, and inclusive socialization efforts can strengthen these foundational elements. By addressing these challenges with a targeted approach, Simpeldesa has the potential to build a robust digital ecosystem, serve as a successful model for village digitalization, and contribute to national development while enriching policy implementation theory.

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