

The Role of SIM-RIwinK in the Form of Smart Village Transformation in the Implementation of Administrative Management in Wringinsongo Village Malang Regency

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ABSTRACT

This study investigated the implementation of the smart village program in Wringinsongo Village, East Java, with a focus on the success of the SIM-RIwinK application in transforming administrative correspondence between central government authorities, village governments, and residents from conventional methods. With a descriptive qualitative approach, this study explores the experiences of heads of families, online service providers, and villagers through in-depth interviews, observations, and documentation. Data analysis was carried out using the Miles and Huberman Qualitative Data Analysis Model, an interactive framework that involves three processes that occur simultaneously: data reduction, i.e. selection, focusing, and simplification of data related to the implementation and impact of SIM-RIwinK, data presentation, including organizing information through matrix and narrative to identify patterns of administrative governance, and verification, namely interpreting the data that has been presented and validating the findings obtained through triangulation and reflection. The findings of the study show the important role of the SIM-RIwinK application in the successful transition to smart village governance by streamlining the administrative process. This research offers valuable insights for future scientific research and provides a model of success that can be replicated by village governments in Malang Regency who want to improve their administrative services through technological innovation.

1. INTRODUCTION

The rapid advancements in information and communication technology (ICT) have fundamentally transformed various aspects of life in Indonesia (Basuki et al., 2022). The Industry 4.0 era is characterized by the modernization of ICT, which comprehensively supports operational systems. Consequently, digitalization significantly enhances operational efficiency and effectiveness across diverse sectors, enabling more optimal management of time and resources (Zhao et al., 2023). This digital transition process also aims to facilitate and accelerate responses to service user needs (Malik et al., 2022). As part of this global trend, Indonesia is actively embracing the Industry 4.0 revolution.

In line with digital advancements, the Indonesian government has prioritized the development of e-government. Presidential Instruction No. 3 of 2003 on National Policies and Strategies for E-government Development mandates the establishment of a clean, transparent, accountable, and responsive government (Instruksi Presiden Republik Indonesia, 2003). Public demands include effective, efficient, trustworthy, and easily accessible public services (Riyanto & Kovalenko, 2023). In this context, e-government is seen as a solution to bring government service centers closer to the community through the utilization of ICT (Arief, 2023).

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Furthermore, the concept of a smart village emerges as an approach that integrates ICT to enhance the quality of life and services for rural communities (Muhtar et al., 2023). Utilizing technology in smart villages offers diverse benefits and innovations, including in resource management and improving the quality of public services (Baskoro et al., 2023). The Smart Village Program in Indonesia is also supported by regulations, such as the Minister of Villages, Disadvantaged Regions, and Transmigration Regulation (PERMENDESA) No. 13 of 2020 on the Priority Use of Village Funds, which encourages the use of ICT for village data collection, mapping potential and resources, and developing partnerships (Permendesa, 2020).

Wringinsongo Village, Tumpang District, Malang Regency, has embraced the smart village concept through the implementation of the Wringinsongo Population Administration Management Information System (SIM-RIwinK) (Yuwono, n.d.). SIM-RIwinK is a digital-based administrative system that forms an integral part of the village's e-government initiatives (Amerieska et al., 2022). This application is designed to streamline various types of population administration and online correspondence services, aiming to significantly simplify processes for the residents of Wringinsongo Village.

Previous research has extensively discussed the successful implementation of e-government in general, such as the Electronic-Based Government System (EBGS), Population Administration Information System (PAIS), and Public Complaint Service (PCS). However, studies specifically exploring the implementation of e-government applications within the smart village context in Indonesia, with a focus on their adoption and holistic impact on village administrative governance, remain limited. The majority of existing research tends to concentrate on particular aspects of e-government or on higher-level governmental contexts.



Figure 1. Six Smart Village Pillars in Village Canals, 2024 (Nafi', 2023)

Source:

While studies exist on the implementation of information systems at the village level, such as the Village Community Empowerment Model in Smart Village Perspective (Muzaqi & Tyasotyningarum, 2022), a deeper understanding of how specific applications like SIM-RIwinK holistically transform village administrative governance, involving various stakeholders the village head, village officials, citizens, and integrating

diverse aspects of e-government services still requires further investigation. This research aims to address this gap by conducting an in-depth case study in Wringinsongo Village.

Based on the identified background and research gap, this study focuses on the role of the SIM-RIwinK application in transforming administrative governance in Wringinsongo Village within the framework of its smart village initiative. This research aims to answer how the implementation of SIM-RIwinK contributes to this transformation, by considering the perspectives and experiences of the village head, village officials as service providers, and citizens as service users.

This research is expected to offer theoretical contributions by expanding our understanding of e-government implementation at the village level within the smart village context. Practically, the study's findings can provide insights and recommendations for the Wringinsongo Village Government and other village governments across Indonesia striving to optimize public services through digital technology utilization. This study also serves as a valuable reference for future researchers interested in exploring similar topics with different scopes and focuses.

2.METHODS

This study utilizes a descriptive method with a qualitative approach (Maggi Savin-Baden, 2023) to deeply explore the implementation of the SIM-RIwinK application and its role in the smart village transformation of governance in Wringinsongo Village, Tumpang District, Malang Regency. To provide a robust framework for understanding this implementation, the research draws upon Rogers' Diffusion of Innovations theory (Rogers, 2003). This theory posits that the adoption of an innovation, such as the SIM-RIwinK application, is a process that unfolds over time among members of a social system. It examines the factors influencing the rate and extent of adoption, including the characteristics of the innovation itself, communication channels, time, and the social system. Dengan menerapkan lensa ini, penelitian ini bertujuan untuk memahami tidak hanya apa yang terjadi selama implementasi, tetapi juga bagaimana dan mengapa aplikasi SIM-RIwinK diadopsi oleh berbagai pemangku kepentingan di Desa Wringinsongo. This research focuses on the perspectives and experiences of key informants across three crucial parameters. These were selected to provide a holistic understanding of the program's adoption and impact across various stakeholder groups within the community, aligning with the concept of Digital Smart Village Communities (Paulus, 2023), Parameter Penelitian: Wringinsongo Village Head, this parameter delves into the leadership perspective concerning the adoption and integration of the SIM-RIwinK application. Key aspects explored within this parameter include: Perceived Need, the initial recognition of the necessity for a digital solution in village governance; Decision to Adopt, the processes and factors influencing the decision to implement the SIM-RIwinK application; Implementation Strategy; The approaches and strategies employed by the village head to introduce and support the application. Village Officials, involved as Online Service Providers Online service providers to examine the experiences of individuals directly responsible for using and managing the SIM-RIwinK application in providing online services to the community. Villagers Themselves, Exploring the perspectives of end-users of the SIM-RIwinK application of Wringinsongo villagers accessing online services. Key aspects explored include Awareness and Accessibility: Their knowledge of the SIM-RIwinK application and its accessibility.

Data collection involved a combination of qualitative techniques to ensure rich and in-depth insights. In-depth interviews were conducted with representatives from each identified parameter to gather detailed accounts of their experiences with SIM-RIwinK, including benefits, challenges, and the overall impact on administrative processes. Observations were carried out in relevant locations, such as village offices and community spaces, to understand the practical application of the SIM-RIwinK system and user interactions. Documentation, including village records, application interfaces, and relevant reports, were reviewed to provide contextual information and reinforce interview and observation data. The collected data were analyzed using the Miles and Huberman Qualitative Data Analysis Model (Matthew B. Miles, A. Michael Huberman, 2018). This interactive and iterative model involves three concurrent flows of activities data reduction, data display, and conclusion drawing, which were systematically applied to understand the implementation of SIM-RIwinK.

3. RESULTS AND DISCUSSIONS

RESULT

The result of the role of SIM-RIwinK is the form of smart village transformation in the implementation of the administrative governance of Wringinsongo Village, Kecamatan Tumpang, Malang Regency.

A) Wringinsongo Village Head

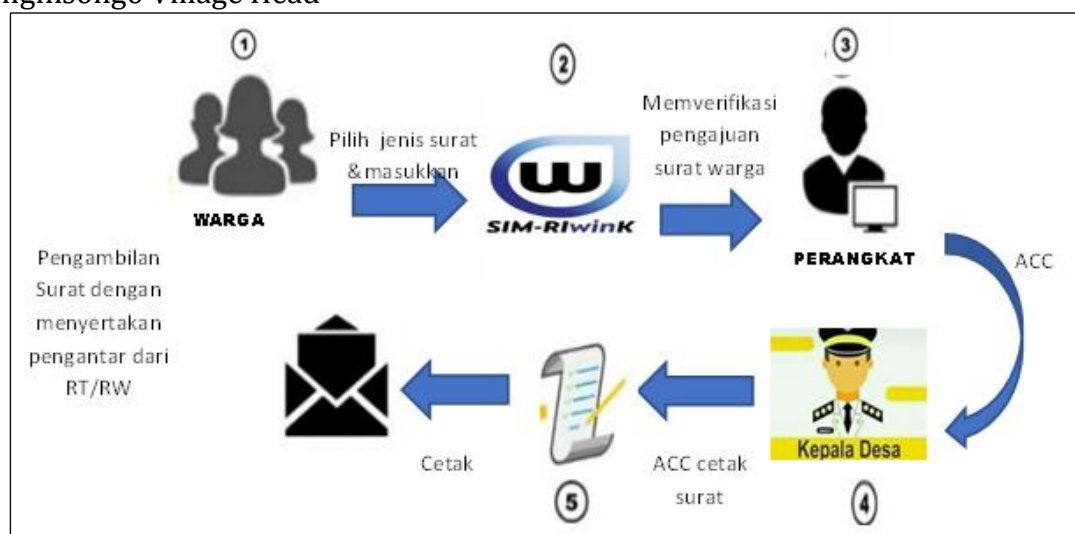


Figure 1. E-governance of Wringinsongo Village, Tumpang District, Malang Regency
Source:

The Village Head of Wringinsongo views the implementation of SIM-RIwinK as a crucial embodiment of the government to citizen (G2C) concept for providing information and public services to the community. This application serves as an effective communication tool between the village government and its residents, with SIM-RIwinK playing an integral role in Wringinsongo Village's e-government initiatives.

Furthermore, SIM-RIwinK is regarded as a manifestation of the core duties and functions of the e-government service unit in Wringinsongo Village, Tumpang District, Malang Regency. The presence of Wringinsongo Smart Village or Wringinsongo Digital Village within e-government services is highly valued, significantly benefiting the local community especially migrants from outside the village or city in managing community correspondence online through the existing system in Wringinsongo Village.

The SIM-RIwinK application, or the Wringinsongo SIM-RIwinK Information System, also contains crucial village information, such as profiles and population data. This is seen as enhancing the village government's transparency to the community while simultaneously fostering two way communication between the village government and its residents. Consequently, the village head's initiative to implement SIM-RIwinK is driven by a vision to improve service efficiency, information transparency, and communication quality with the community through the strategic use of digital technology.

B) Village Officials

Village officials assess that SIM-RIwinK significantly eases community access to online village services. The effectiveness of this service is evident as residents with easy access no longer need to visit the village office in person; they can contact village officials via mobile phone. The presence of SIM-RIwinK greatly assists the community in managing correspondence and viewing the village profile.

Furthermore, village officials, acting as online service providers, feel significantly assisted by the presence of this digital service. The application is also viewed as a means of communication between the village government and the community through the online village platform. However, there are challenges in service smoothness, particularly because elderly residents tend to prefer visiting the village office directly to handle their letter applications. When filling out forms via SIM-RIwinK, they still require assistance from online service operators due to a lack of understanding in its operation.

Within the bureaucratic structure of the Wringinsongo Village Government, the authority and responsibility for managing e-government services through the smart village initiative are coordinated. This service management involves an Online Service Management Team, led by the head of service and the head of the Wringinsongo Village Government, who oversee the maintenance of these e-government services. Their operations strictly adhere to established Standard Operational Procedures (SOPs). Village officials consistently provide excellent service in line with these SOPs, which includes assisting community members in filling out application forms for letters, even when documents are incomplete, with direct support from the head of service.

Coordination with Community Partnership Program: The Wringinsongo Village Government has coordinated with the community partnership program team as part of a national initiative for organizing letter archives. This coordination is conducted as a demonstration of effective archiving practices through the utilization of e-government.

Overall, village officials recognize the significant potential of SIM-RIwinK in enhancing service efficiency and facilitating communication with the community. However, further mentoring and socialization efforts, especially for the elderly population, are necessary to optimize the application's utilization.

C) Villagers Themselves

Interview and direct field observations indicate that the residents of Wringinsongo Village view the use of SIM-RIwinK as a clear demonstration of the village government's commitment to improving service quality. In this regard, the community feels supported and facilitated by using smartphones, as the SIM-RIwinK application simplifies the process of obtaining services for them.

For community members who are not yet proficient in using smartphones, they can seek assistance from younger individuals or other residents who are more familiar

with the technology. This indicates the presence of an informal support mechanism for application adoption at the community level.

Furthermore, e-government services in Wringinsongo Village are highly regarded by the community for their convenience. The village government is perceived to have provided transparency to its citizens, embodying a form of democratic service. The ease of access to information and services through SIM-RIwinK significantly contributes to an increase in public satisfaction with the village government's performance.

DISCUSSIONS

Discussion of the role of SIM-RIwinK in the form of smart village transformation in the implementation of the administrative governance of Wringinsongo Village, Tumpang District, Malang Regency

A) Wringinsongo Village Head

This study highlights the pivotal perspective of the Wringinsongo Village Head in adopting SIM-RIwinK as the foundational element for the village's e-government. This viewpoint aligns with (Chairunnisa et al., 2023), who emphasize the vital role of village officials and leaders in providing public information as a manifestation of government accountability to the community, based on good governance principles. Similarly, (Pati et al., 2022) explain that the implementation of standard e-government service innovations has the potential to transform the paradigm of online services..

In the context of smart village development in Wringinsongo Village, the implementation of SIM-RIwinK has brought about significant changes, particularly in the aspect of communication. Effective communication stands as a crucial prerequisite to ensure a comprehensive understanding among all stakeholders, from the village government to its residents, regarding the vision, objectives, and benefits of smart village initiatives within e-government services.

The Wringinsongo Village Government has implemented several significant communication strategies. The village government prioritizes information openness as a form of transparency to the community. This is highly relevant from a democratic perspective, as citizens can access all village information through the Wringinsongo Village website. This platform serves as the primary channel for providing information that is open and easily accessible to the public.

The village government organizes forums and workshops as part of its efforts to enhance community understanding regarding the importance of leveraging technology and its significant impact on daily life. Communication through these forums and workshops serves as a form of guidance from the village government to the community, underscoring the crucial role of utilizing e-government services.

As part of its smart village initiative, Wringinsongo Village has established an integrated communication channel with the community. This initiative aims to facilitate more efficient and responsive interactions between the village government and its residents.

These findings indicate that the leadership of the Wringinsongo Village Head possesses a strong understanding of the role of information technology in village governance. The SIM-RIwinK implementation initiative is not merely a technology adoption but also a planned communication strategy aimed at enhancing accountability, transparency, and community participation in village development. The communication strategies employed, including information openness, educational forums, and the establishment of communication channels, demonstrate the village government's commitment to building an inclusive and participatory e-government ecosystem. Future

research could further explore the effectiveness of each of these communication channels in improving community understanding and participation.

B) Village Officials

These research findings highlight the pivotal role of village officials as key agents in the implementation of SIM-RIwinK and the transition towards e-government in Wringinsongo Village. Their perspective on the ease of access and efficiency of online services aligns with (Tachjan, 2006) view that policy inputs, in the form of resources, are processed through administrative and organizational actions policy processes, ultimately generating policy outputs that impact the policy itself. In this context, SIM-RIwinK, as an e-government policy output, necessitates adequate resource input and an effective implementation process carried out by the village officials.

Furthermore, the village officials' recognition of the importance of human resources and funding in public policy implementation is underscored by (Ilman & Arumsari, 2021), who state that competent Human Resources (HR) in the field of information and communication technology are crucial for maximizing application utilization. This research also identifies that resources are essential components in realizing a smart village, encompassing funding sources, technology infrastructure, and human resource expertise.

The resources identified as crucial for SIM-RIwinK implementation in Wringinsongo Village encompass both Budget and Government Technology. The budget, allocated by the Wringinsongo Village Government, is a vital resource for website management and development, as well as for facilitating external collaborations, demonstrating a strong commitment to their smart village initiative. Simultaneously, Government Technology, specifically the internet network infrastructure within the village office, is recognized as an essential component for the realization of a digital village. The availability of this infrastructure forms the foundation for SIM-RIwinK's operation. Furthermore, for self-development, the village government collaborates with the community partnership program team from Politeknik Negeri Malang (POLINEMA). This partnership aims to enhance the competency of village officials, particularly in online server management and the utilization of e-government services. This transfer of knowledge and guidance is designed to bolster human resource capacity, thereby supporting the system's long-term sustainability.

Challenges related to digital literacy among the elderly indicate the need for inclusive implementation strategies that consider the diverse digital capabilities within the community. While village officials find SIM-RIwinK helpful, the system's long-term success also depends on the ability of all community segments to access and utilize it. Future research could explore effective intervention strategies to enhance digital literacy and e-government adoption among the elderly, as well as analyze the impact of collaborations with external parties like POLINEMA on the successful implementation of e-government at the village level.

C) Villagers Themselves

These research findings highlight the positive reception and adaptation of Wringinsongo Village residents to the implementation of SIM-RIwinK as part of the village's e-government initiative. This citizen perspective aligns with the argument in the Jurnal Smart City (Aprizal et al., 2024), which states that the disposition of implementers—in this case, the community's response to a policy—can influence the implementer's willingness to execute that policy. The positive acceptance of SIM-RIwinK

by the villagers therefore becomes a crucial asset for the successful implementation of e-government in this village.

Similarly, research by (Supriyono & Siswanto, 2023) indicates that digital village policies tend to proceed in line with government planning and initial project objectives. Discussions regarding the attitude and readiness of village residents towards the transformation of e-government service usage become crucial indicators of implementation success and community support for the smart village initiative itself. Active participation and a positive community attitude form the foundation for the sustainability of e-government services within this smart village context.

In the implementation of the smart village initiative in Wringinsongo, citizen participation and attitudes toward e-government services show a positive trend. Specifically, the high responsiveness of Wringinsongo Village residents to e-government service usage has a positive impact on the performance of the village's online service operators (officials). This active citizen participation motivates and simplifies the tasks of village officials in providing services.

Socialization and Village Government Awareness: The Wringinsongo Village Government actively conducts socialization efforts to increase community awareness about the importance of e-government services for their ease of access and time efficiency. These socialization endeavors play a crucial role in building understanding and encouraging citizen participation.

Although informal support mechanisms exist within the community to assist residents who are less technologically proficient, further research is needed to understand the overall digital literacy level in Wringinsongo Village. This would help identify which community groups might require specific interventions to enhance their digital capabilities. Additionally, it is important to evaluate the effectiveness of the socialization strategies implemented by the village government in uniformly increasing the adoption and utilization of e-government services across all segments of society. Future research could also explore the impact of active citizen participation on the quality and sustainability of e-government services in Wringinsongo Village.

4. CONCLUSION

This research, focusing on the implementation of a smart village within e-government services in Wringinsongo Village, Tumpang District, Malang Regency, specifically examining the adoption of the SIM-RIwinK application, provides a comprehensive analysis of the perspectives of the village head, village officials (as online service providers), and villagers (as end-users). Guided by Rogers' Diffusion of Innovations theory (2003), the study yields several key conclusions:

Firstly, the Wringinsongo Village Head demonstrated a strong vision in adopting SIM-RIwinK as the foundation for the village's e-government. This application's implementation is seen as a crucial embodiment of the government-to-citizen (G2C) concept, aimed at improving service efficiency, information transparency, and communication quality with the community. This initiative was driven by an awareness of digital technology's potential to transform village governance.

Secondly, village officials, as online service providers, acknowledge SIM-RIwinK's potential in simplifying service access for the community and enhancing their work efficiency. The application has become an effective communication tool within the digital village sphere. However, challenges primarily arise concerning the digital literacy of elderly groups, who still require assistance in using the application. The success of this

e-government implementation is also bolstered by dedicated village budget allocation, technological infrastructure, and efforts to develop the capacity of village officials through collaborations with external parties.

Thirdly, Wringinsongo villagers generally responded positively to the implementation of SIM-RIwinK, viewing it as a demonstration of the village government's commitment to improving service quality. The ease of access to information and services via this application has increased community satisfaction. However, informal support mechanisms were observed within the community to assist technologically less proficient residents. This highlights the need for more inclusive strategies to enhance digital literacy.

This research contributes both theoretically and practically to understanding smart village implementation within the context of e-government in Indonesia. Theoretically, it applies the Diffusion of Innovations theory to analyze factors influencing technology adoption at the village level from various stakeholder perspectives. Practically, the study identifies opportunities and challenges in implementing e-government applications like SIM-RIwinK, especially concerning human resource readiness and community digital literacy levels. These findings can provide valuable input for village governments, local governments, and related parties in designing more effective and inclusive e-government implementation strategies in other villages.

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