

E-Government-Based Innovation in Improving the Quality of Population Administration Services

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Abstract

This study aims to analyze the implementation of e-Government-based innovation diffusion in enhancing the quality of population administration services in Kediri Regency. The research is motivated by challenges in public service delivery, such as unequal access, suboptimal utilization of information technology, and the need for sustainable innovation. The study adopts the theoretical frameworks of public service, e-Government, and innovation diffusion to examine programs like SAHLAJA Online and SAHLAJA Keliling. The findings reveal that these innovations have improved service efficiency, though challenges persist, including limited infrastructure, insufficient outreach, and a lack of human resource capacity. The study recommends strengthening outreach programs, developing digital infrastructure, and enhancing human resource capacity to ensure the sustainability of technology-based public service innovations.

Keywords: E-Government, Public Service Innovation, Population Administration, Innovation Diffusion, Kediri Regency.

Introduction

Research Background

The Republic of Indonesia adopts a democratic system that places sovereignty in the hands of the people, as stated in the Preamble of the 1945 Constitution (UUD 1945) and Article 1, Paragraph 2 of the 1945 Constitution. Consequently, the government bears the responsibility of providing optimal public services to meet the needs of its citizens. High-quality public service delivery represents the government's role in protecting, educating, and promoting the welfare of its people, as outlined in the fourth paragraph of the Preamble to the 1945 Constitution.

One of the priority areas for public service delivery is population administration. Based on Law No. 23 of 2006 concerning Population Administration, revised by Law No. 24 of 2013, population administration encompasses the organization and issuance of population documents, such as Identity Cards (KTP), Family Cards (KK), birth certificates, and other documents related to personal data. These legislative reforms aim to enhance service effectiveness, ensure data accuracy, and guarantee the uniqueness of the Population Identification Number (NIK).

Despite these efforts, challenges persist in the implementation of population administration in Indonesia. Issues such as typographical errors in documents, data discrepancies, limited infrastructure, and low public awareness of the importance of population documents pose significant obstacles. According to data from the Population and Civil Registry Office (Disdukcapil) of Kediri Regency, thousands of residents lack Identity Cards despite the availability of administrative services. Key factors contributing to this issue include geographical barriers, transportation costs, and insufficient information about the services.

On the other hand, advancements in information technology offer new opportunities for the government to enhance public service quality. The concept of e-Government, introduced through Presidential Instruction No. 3 of 2003, provides a technology-based approach to governance. By leveraging information

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technology, the government can establish more effective, efficient, transparent, and accountable service systems. The implementation of e-Government in population administration aims to streamline service processes, reduce processing times, and improve data accuracy and transparency.

Kediri Regency, one of the regions with a large population and high population density, has adopted the e-Government concept through innovative programs such as SAHAJA Online and SAHAJA Keliling. These programs include services such as self-service document printing using plain white paper, Android-based applications for document management, and mobile services to reach residents in remote areas.

Although these innovations have yielded positive outcomes, several challenges remain. Limited technological infrastructure, insufficient public outreach, and inadequate human resource capacity are among the main barriers. Additionally, geographical and social disparities between the western and eastern regions of the Kediri Regency impact the equitable access to population administration services, necessitating tailored approaches for each region.

The concept of innovation diffusion, introduced by Rogers (2003), serves as a crucial framework for understanding how innovations are accepted and adopted by society. The process of innovation diffusion involves the dissemination of new ideas or technologies through specific channels over time to members of a social system. In the context of population administration in Kediri Regency, innovation diffusion entails interaction between the government as the service provider and the public as beneficiaries. The success of these innovations requires an approach that considers the social, economic, and geographical conditions of the community.

Moreover, the success of innovation implementation is influenced by the integration of supporting policies. For instance, Ministerial Regulation No. 109 of 2019, which governs the use of forms and books for population administration, underpins innovations such as document printing on plain white paper. However, this policy requires adequate technical support and resources for optimal implementation.

This study aims to analyze the implementation of e-Government in Kediri Regency, identify the challenges encountered, and evaluate the impact of innovations on service quality. Employing the innovation diffusion theory, the research also seeks to develop a diffusion model that supports the sustainability of public service programs in Kediri Regency.

The findings of this study are expected to contribute theoretically to the development of innovation diffusion and e-Government concepts, while also providing practical recommendations for local governments to improve public service quality. The study is not only relevant to Kediri Regency but can also serve as a reference for other regions facing similar challenges in population administration services.

Literature Review

Enhancing public services has become a primary focus for governments worldwide, including Indonesia. By adopting principles of good governance and leveraging information technology, governments aim to deliver services that are more effective, efficient, and transparent. This literature review explores the theoretical framework related to e-Government-based public services, innovation, and the diffusion of innovation in the context of population administration.

Public Services

Public services represent the government's obligation to meet the needs of its citizens in accordance with applicable regulations. Law No. 25 of 2009 defines public services as a series of government activities aimed at fulfilling administrative, goods, or service needs for the public. High-quality services encompass the protection of fundamental citizen rights, including ownership of population documents such as Identity Cards (KTP), Family Cards (KK), and birth certificates.

Widodo (2001) emphasizes that effective public services should adhere to principles of efficiency, equity, responsiveness, and effectiveness. In Kediri Regency, these principles are implemented through the SAHAJA (Satu Hari Jadi) program, which aims to bring population administration services closer to the community through technology-driven innovation.

e-Government as a New Paradigm in Public Service

e-Government refers to the utilization of information technology to improve the efficiency, transparency, and accessibility of public services (Indrajit, 2005). Since the issuance of Presidential Instruction No. 3 of 2003, the Indonesian government has promoted e-Government as an effort to modernize service delivery. This concept not only facilitates communication between the government and citizens (Government-to-Citizen, G2C) but also strengthens coordination between government agencies (Government-to-Government, G2G) and the private sector (Government-to-Business, G2B).

In Kediri Regency, e-Government is implemented through innovative programs such as SAHAJA Online and SAHAJA Keliling. These programs enable residents to access population administration services online and through mobile services. However, challenges such as limited technological infrastructure in rural areas and low digital literacy hinder its full implementation.

Public Service Innovation

Innovation in public services refers to new breakthroughs designed to improve the quality, efficiency, and accessibility of services. Ministerial Regulation No. 30 of 2014 defines public service innovation as creative ideas, adaptations, or modifications that provide tangible benefits to society.

In Kediri Regency, innovation is embodied in the SAHAJA Online program, which allows self-service printing of population documents using plain white paper. This initiative reduces the administrative burden on government offices and minimizes illicit fees. The SAHAJA Keliling service is designed to reach communities in remote villages. Nevertheless, the program's success is constrained by limitations in human resources, budget, and supporting infrastructure such as reliable internet access.

Diffusion of Innovation

Diffusion of innovation is the process through which innovations spread from one individual or group to another within a social system (Rogers, 2003). In public services, the diffusion of innovation aims to accelerate the adoption of new technologies and ideas by the community and government agencies.

According to Rogers (2003), diffusion involves four main elements:

Innovation: In this study, innovation encompasses e-Government-based programs such as SAHAJA.

Communication Channels: Innovation dissemination is conducted through digital media and direct outreach.

Time: The adoption period depends on the readiness of the community and related institutions.

Social System: This includes the relationships between local governments, the community, and the private sector in supporting innovation adoption.

De Vries et al. (2018) highlight the importance of collaboration between government actors and the community in supporting innovation diffusion. In Kediri Regency, however, barriers such as limited communication and low digital literacy hinder the widespread adoption of innovations.

Population Administration in Indonesia

Population administration is a system for managing population data to support public services and development planning. According to Law No. 24 of 2013, population administration includes population registration, civil registration, and data management based on the Population Identification Number (NIK).

In Kediri Regency, the transformation of population administration is realized through the application of information technology. Programs such as SAHAJA Online enable self-service document printing, while SAHAJA Keliling brings services to remote areas. Nonetheless, data from 2020 reveal that 42,656 residents still lack Identity Cards, reflecting the challenges in reaching all segments of the population.

Challenges in e-Government-Based Innovation Implementation

The implementation of e-Government in Indonesia faces several challenges, including:

Technological Infrastructure: Limited internet coverage in remote areas.

Human Resource Capacity: Insufficient training for service personnel restricts innovation effectiveness.

Community Awareness: Low digital literacy and lack of awareness about technology-based services.

Budget: Limited budget allocation for infrastructure development and service promotion.

Setyowati and Meirinawati (2021) identify similar challenges in the SAHAJA Keliling program, such as limited network coverage in mountainous areas and inadequate personnel to optimally serve the community.

Solutions to Enhance Public Services

Based on the literature review, several solutions to improve the quality of e-Government-based public services include:

Strengthening Digital Infrastructure: Expanding internet network coverage in remote areas.

Enhancing Human Resource Capacity: Providing training for service personnel to operate new technologies.

Community Outreach and Education: Increasing public awareness of technology-based services through digital campaigns and direct outreach.

Optimizing Budget Allocation: Allocating sufficient funds for infrastructure development and innovation promotion.

Inter-Sectoral Collaboration: Involving the private sector in technology development and service provision.

This review provides a crucial foundation for understanding the dynamics of e-Government implementation and public service innovation, particularly in the context of population administration in Kediri Regency.

Research Methodology

This study employs a qualitative-descriptive approach to analyze the implementation of e-Government-based innovation diffusion in population administration services in Kediri Regency. This approach was chosen to provide an in-depth depiction of the processes, dynamics, and challenges encountered in

developing public service innovations. Aligned with Creswell's (2014) perspective, qualitative methods offer flexibility to explore phenomena holistically within their social and cultural contexts.

Research Design

The research design is a case study, as recommended by Yin (2018), to explore the phenomenon of public service innovation in Kediri Regency, including the implementation of the SAHAJA Online and SAHAJA Keliling programs. A case study approach is suitable for conducting an in-depth exploration of specific phenomena within real-world contexts.

The research focuses on:

The implementation of e-Government in population administration services.

The diffusion of innovation to enhance public service quality.

Challenges and obstacles in implementing technology-based innovations.

The impact of innovation on the effectiveness and efficiency of public services in Kediri Regency.

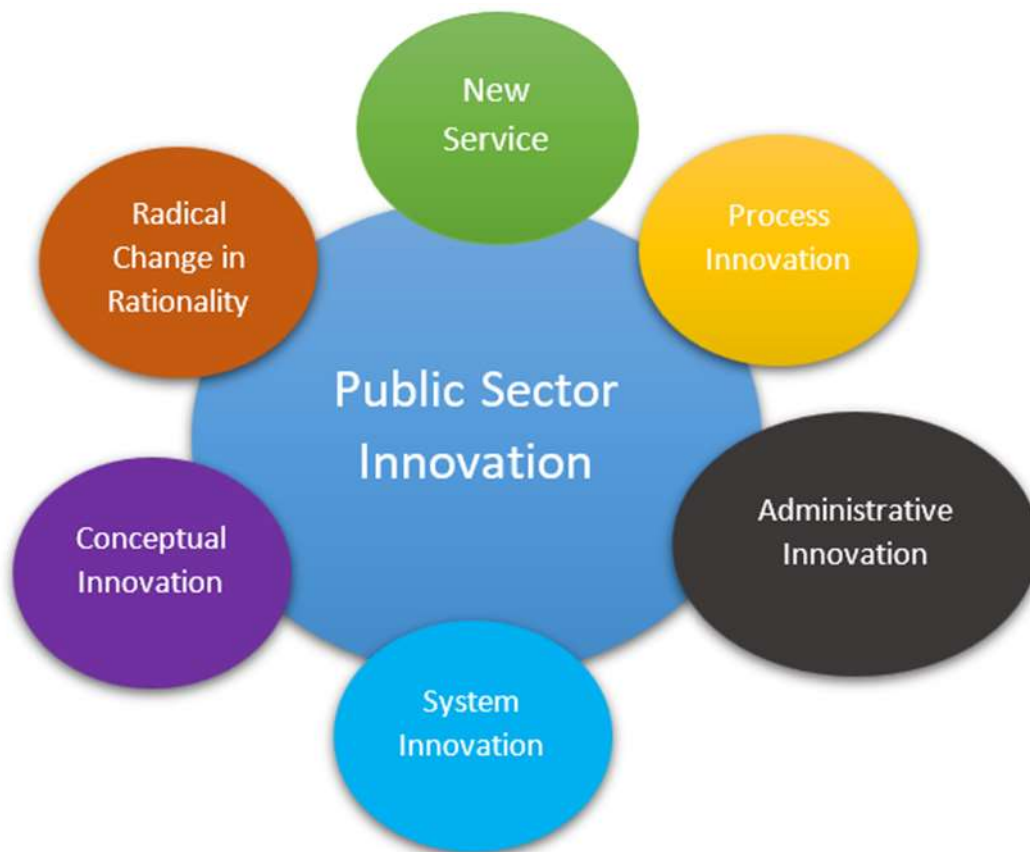


Figure 1.1. Topology Model of Public Sector Innovation

Source: Halvorsen et al. (2005)

Research Location

The study was conducted in Kediri Regency, East Java. This location was selected due to its active engagement in e-Government-based population administration innovations through the SAHAJA

programs. With a high population density (1,087 people/km² in 2022), Kediri Regency faces complex service challenges, including limited digital infrastructure and the need to reach remote areas (Setyowati & Meirinawati, 2021).

Research Subjects

The research subjects include:

Public Service Providers: Staff from the Department of Population and Civil Registration (Disdukcapil) of Kediri Regency responsible for implementing innovative programs.

Service Recipients: Residents of Kediri Regency who utilize population administration services either online via SAHAJA Online or through direct access via SAHAJA Keliling.

Data Collection Techniques

Data collection was conducted using three primary methods: interviews, observations, and documentation, following Creswell's (2014) recommendation on the importance of data triangulation in qualitative research to enhance validity and reliability.

In-Depth Interviews

Semi-structured interviews were conducted to explore the experiences, perceptions, and challenges faced by service providers and recipients. Informants were selected using purposive sampling based on their roles and involvement in public service innovation.

Examples of Informants

Head of the Department of Population and Civil Registration in Kediri Regency.

Technical staff of SAHAJA Online and SAHAJA Keliling programs.

Community members using services in urban and rural areas.

Participatory Observation

Direct observation was conducted during the implementation of the SAHAJA programs, including both online and mobile services. This technique provided insights into operational processes, interactions between staff and residents, and challenges encountered during implementation. Observations were conducted at the Disdukcapil office, SAHAJA Keliling service locations, and selected target villages.

Documentation

Documentation complemented the data gathered through interviews and observations. Analyzed documents included SAHAJA program reports, policies related to population administration, service statistics, and socialization materials.

Data Analysis Techniques

Data analysis followed the interactive model by Miles and Huberman (1994), comprising three main stages:

Data Reduction: Sorting and selecting data relevant to the research focus.

Data Presentation: Organizing data into tables, diagrams, or narratives for easier analysis.

Conclusion Drawing: Identifying patterns, themes, and relationships within the data to address the research questions.

The analysis process was iterative, employing coding to categorize information into themes such as service effectiveness, challenges, and community responses to innovations.

Data Validity and Reliability

The validity and reliability of data were ensured through triangulation of methods, data sources, and theories, as suggested by Patton (2002). This strategy minimized bias and enhanced the accuracy of interpretation. Member checking was also conducted by verifying interview and observation findings with relevant informants.

Theoretical Framework

The research is grounded in three key theories:

Public Service Theory (Widodo, 2001): Explains the principles of effectiveness, efficiency, and equity in public service.

e-Government Theory (Indrajit, 2005): Examines the utilization of information technology to enhance service accessibility, transparency, and efficiency.

Diffusion of Innovation Theory (Rogers, 2003): Analyzes the process of adoption and dissemination of innovation within social systems, emphasizing elements such as innovation, communication channels, time, and social systems.

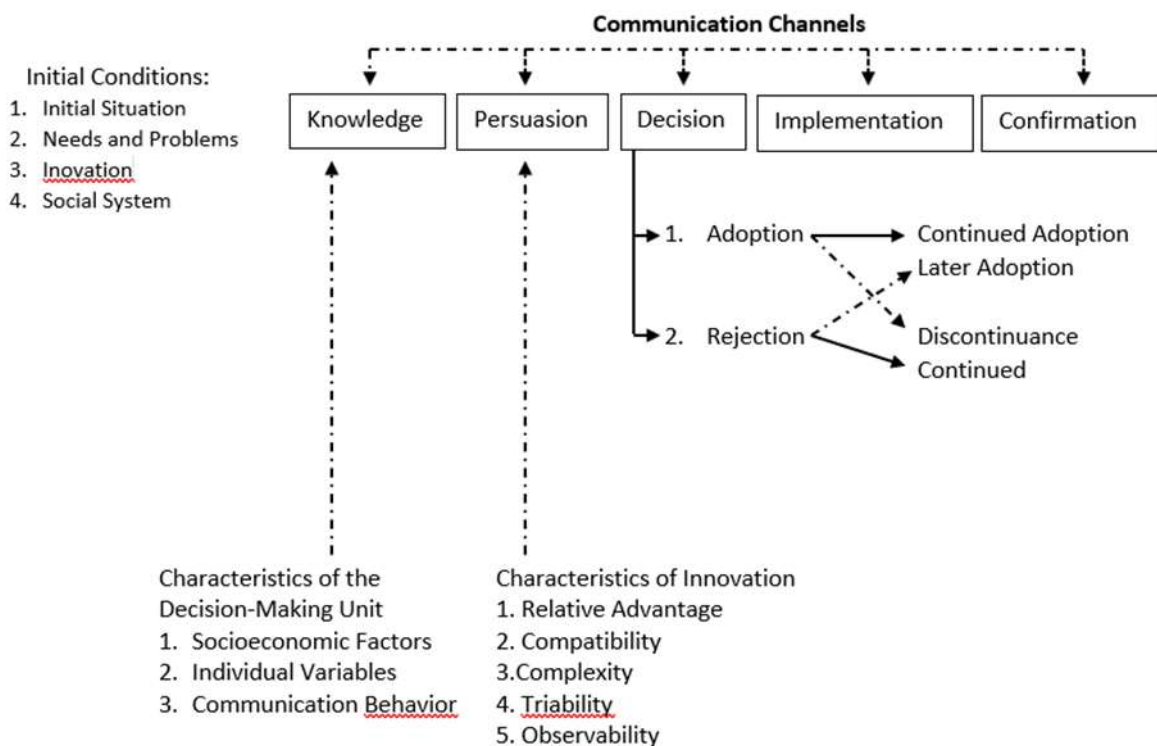


Figure 7.1. Innovation Decision-Making Process Model

Source: Rogers (2003)

Research Ethics

The study adhered to ethical standards, including:

Informed Consent: Informants signed a consent form after understanding the research objectives and procedures.

Data Confidentiality: Informants' identities were kept confidential to protect their privacy.

Transparency: The researcher provided explanations regarding data usage and publication.

Research Limitations

The limitations of this study include:

Sample Representation: The focus on Kediri Regency may limit the generalizability of findings to other regions.

Secondary Data Limitations: Certain documents related to the SAHAJA program were poorly documented, requiring additional verification.

Time Constraints: Limited time for data collection may affect the depth of findings.

Methodological Implications

This qualitative approach is expected to contribute to the development of theories and practices in public service innovation. Practically, the findings can be utilized by local governments to enhance the effectiveness and efficiency of technology-based population administration services.

Results and Discussion

This study explores the implementation of e-Government-based innovation diffusion in population administration services in Kediri Regency, focusing on the SAHAJA (Satu Hari Jadi) program. The following presents the key findings and discussions, linking these results to relevant theories and previous studies.

Implementation of the SAHAJA Program in e-Government Innovation Diffusion

Improved Service Efficiency

The SAHAJA Online and SAHAJA Keliling programs have significantly improved the efficiency of population administration services in Kediri Regency. These innovations allow residents to access services online, print documents such as ID cards and family cards using HVS paper, and receive direct services via mobile units. Data indicate that in 2020, 1,228,724 individuals possessed electronic ID cards out of a total 1,271,380 eligible population, leaving only 42,656 individuals unserved.

These findings align with Melinda et al. (2020), who observed that the PADUKO program in Padang Panjang successfully enhanced accessibility and efficiency in population administration services through e-Government innovation. Technology utilization has proven effective in reducing the complexity of bureaucratic processes.

Diffusion of Innovation through SAHAJA Keliling

The mobile service (SAHAJA Keliling) brings services to remote areas, leveraging a social system approach for innovation diffusion. This strategy aligns with Rogers' (2003) diffusion of innovation theory, which

highlights that innovation adoption relies on communication through specific channels, such as a direct outreach approach.

However, this study also identifies that the diffusion process remains suboptimal. Certain remote areas face challenges such as limited internet connectivity and transportation issues, restricting the accessibility of mobile services.

Challenges in Implementing Innovation Diffusion

Limited Technological Infrastructure

Despite the adoption of digital technology in services, technological infrastructure, particularly internet networks, remains a significant challenge. This issue is especially prevalent in rural and hilly areas, where network instability is common. Setyowati & Meirinawati (2021) similarly reported such challenges in the SAHAJA Keliling program, particularly in mountainous regions, which hinder the effectiveness of innovation.

Insufficient Socialization

A lack of public awareness regarding the SAHAJA program presents a significant obstacle. Interviews revealed that many residents in remote areas were unaware of online services like SAHAJA Online. This highlights the need for enhanced communication and education efforts by local authorities. Alves and Santos (2021) emphasized that effective public information campaigns are crucial for raising awareness about innovations.

Limited Human Resources Capacity

The study also found that limited human resource capacity affects innovation implementation. Disdukcapil staff often face heavy workloads without adequate training on new technologies. These findings support Atthahara (2018), who underscored the importance of strengthening human resource capacity to ensure the successful implementation of e-Government initiatives.

Impact of Innovation on Public Services

Service Effectiveness and Efficiency

The SAHAJA program has expedited population administration processes, significantly reducing the time required for document issuance compared to traditional methods. This efficiency has improved public satisfaction, particularly in urban areas with adequate internet access.

Reduction of Corruption Practices

One notable impact of technology-based innovations is the reduction of illegal fees in public services. The online and self-service nature of SAHAJA Online minimizes direct interactions between citizens and officials, thereby reducing opportunities for corrupt practices. Nugraheny (2020) highlighted similar outcomes in other regions, where innovations improved service transparency.

Increased Public Awareness of Population Administration

Although challenges in socialization persist, the program has raised public awareness of the importance of population documents, particularly among younger generations. However, cultural phenomena, such as early marriage couples delaying document updates, illustrate that behavioral and cultural changes remain an ongoing challenge (Setyowati & Meirinawati, 2021).

Discussion

The findings demonstrate that e-Government-based innovation diffusion, as implemented through the SAHAJA program, holds significant potential for improving population administration services. These results support Rogers' (2003) diffusion of innovation theory, which states that the success of innovation adoption depends on its relative advantage and compatibility with societal needs.

However, challenges such as limited infrastructure, human resource constraints, and inadequate socialization hinder the effective implementation of innovations. These findings are consistent with de Vries et al. (2018), who noted that innovation diffusion in the public sector often faces obstacles such as weak coordination and resource limitations.

To address these challenges, the Kediri Regency government needs to adopt strategic measures, including:

Strengthening Digital Infrastructure: Investing in the development of internet networks in remote areas to support online services.

Human Resource Training and Development: Providing intensive training for Disdukcapil staff to enhance their capacity in utilizing new technologies.

Socialization and Education: Launching extensive public information campaigns through local media, digital platforms, and community-based approaches to increase public awareness.

Conclusion

This study examines the implementation of e-Government-based innovation diffusion in population administration services in Kediri Regency through the SAHAJA (Satu Hari Jadi) program. The findings reveal that technology-driven innovations such as SAHAJA Online and SAHAJA Keliling have successfully enhanced the efficiency of public services by simplifying community access to population documents. Furthermore, the program has contributed to reducing illegal fee practices and increasing public awareness of the importance of population administration.

Nevertheless, several challenges impede the success of this innovation diffusion. Key obstacles include limitations in technological infrastructure, inadequate public outreach, and insufficient capacity of human resources. These findings align with Rogers' (2003) assertion that the success of innovation adoption depends on its perceived benefits, compatibility with societal needs, and support from the social system. Additionally, the results corroborate the study by de Vries et al. (2018), which highlights that the success of innovation in the public sector often hinges on an organization's ability to overcome internal barriers.

To ensure the sustainability of this innovation, the Kediri Regency government must strengthen digital infrastructure in underserved areas, provide intensive training for service personnel to enhance their technological capacity, and amplify public outreach efforts through various communication channels. These steps are critical to maximizing the potential of e-Government in fostering more inclusive, efficient, and transparent public services.

This study contributes theoretically to the literature on innovation diffusion in public services and offers practical implications for the development of e-Government in Indonesia. The findings and recommendations presented can serve as a reference for local governments in designing more effective policies and strategies to address future challenges.

References

- Atthahara, M. (2018). Inovasi pelayanan publik berbasis e-Government: Studi kasus aplikasi Ogan Lopian Dinas Komunikasi dan Informatika di Kabupaten Purwakarta. *Jurnal Politikom Indonesiana*, 5(2), 35–49.

- Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). Thousand Oaks, CA: Sage Publications.
- de Vries, H., Tummers, L., & Bekkers, V. J. J. M. (2018). The diffusion and adoption of public sector innovations: A meta-synthesis of the literature. *Perspectives on Public Management and Governance*, 1(3), 159–176. <https://doi.org/10.xxxx>
- Indrajit, R. E. (2005). *Electronic government: Strategi pembangunan dan pengembangan sistem pelayanan publik berbasis teknologi digital*. Yogyakarta: Andi Offset.
- Kadir, A., Nugroho, W., & Utomo, S. (2019). Public service innovation model in Indonesia: A case study of Kolaka Regency, Southeast Sulawesi. *International Journal of Mechanical Engineering and Technology*, 10(2), 255–265.
- Melinda, R., Harahap, M. I., & Aulia, N. (2020). Inovasi pelayanan administrasi kependudukan online (PADUKO) oleh Dinas Kependudukan dan Pencatatan Sipil Kota Padang Panjang. *Nahkoda: Jurnal Ilmu Pemerintahan*, 19(1), 27–39.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook* (2nd ed.). Thousand Oaks, CA: Sage Publications.
- Nugraheny, D. E. (2020). Challenges in implementing electronic identity cards: A study on the inefficiency of public services in Indonesia. *Journal of Public Administration and Governance*, 10(1), 24–39.
- Patton, M. Q. (2002). *Qualitative research and evaluation methods* (3rd ed.). Thousand Oaks, CA: Sage Publications.
- Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). New York, NY: Free Press.
- Setyowati, R., & Meirinawati, M. (2021). Inovasi program SAHAJA (Satu Hari Jadi) keliling dalam upaya peningkatan kualitas pelayanan di Dinas Kependudukan dan Pencatatan Sipil Kabupaten Kediri. *Jurnal Manajemen Pelayanan Publik*, 8(2), 12–25.
- Widodo, J. (2001). *Good governance: Telaah dari dimensi akuntabilitas dan kontrol birokrasi pada era desentralisasi dan otonomi daerah*. Surabaya: Insan Cendekia.
- Yin, R. K. (2018). *Case study research and applications: Design and methods* (6th ed.). Thousand Oaks, CA: Sage Publications..