



## Transformation of Public Services Policy Analysis of Digital Population Identity (IKD) in Surabaya City

Desak Gede Suasridewi<sup>1</sup>, Fedianty Agustina\*<sup>2</sup>, Sri Kamariyah<sup>3</sup>, Widyawati<sup>4</sup>,  
Eny Haryati<sup>5</sup>

<sup>1-5</sup> Universitas Dr. Soetomo, Indonesia

Address: Jl. Semolowaru No.84, Menur Pumpungan, Kec. Sukolilo, Surabaya, East Java 60118

Author Correspondence: [fedianty.augustinah@unitomo.ac.id](mailto:fedianty.augustinah@unitomo.ac.id)\*

**Abstract.** *This study analyzes the transformation of public services in Surabaya City through the implementation of Digital Population Identity (IKD), focusing on efficiency, effectiveness, transparency, accountability, and public participation. Using a qualitative case study method, data were collected through interviews, observations, and document analysis from policymakers, policy implementers, and the community. The findings show a positive impact of IKD on service efficiency and effectiveness, but challenges remain, particularly related to digital literacy. Transparency has improved due to real-time information access. Accountability has increased through digital complaint features, though staff capacity needs enhancement. Public participation has risen. The study recommends enhancing socialization, digital literacy, technological infrastructure, and staff capacity to maximize the benefits of IKD.*

**Keywords :** *Public Service Transformation, IKD Policy (Digital Population Identity)*

### 1. INTRODUCTION

Digital transformation has become a primary agenda for governments worldwide, including Indonesia, in efforts to enhance the efficiency and effectiveness of public services (OECD, 2015). The use of information and communication technology (ICT) is expected to accelerate service access, reduce bureaucracy, and increase government transparency (UN e-Government Survey, 2022). In Indonesia, this effort is realized through various digitalization programs, one of which is the implementation of Digital Population Identity (IKD). IKD, a digital version of the electronic Identity Card (e-KTP), is designed to facilitate access to various public services and reduce dependence on physical documents (Kemendagri, 2023). The implementation of IKD is expected to promote a more effective and responsive government to meet the needs of the community (World Bank, 2020).

As a major city with a significant population, Surabaya acts as a pioneer in the implementation of IKD, in line with Permendagri Number 72 of 2022. The implementation of IKD in Surabaya serves as an example of applying this national regulation, providing valuable insights into policy effectiveness at the local level and its contribution to the digital transformation of public services. This effort aligns with the city government's commitment to building a Smart City based on information technology (Pemkot Surabaya, 2024). However, the success of digital transformation in public services through IKD depends not only on the readiness of technological infrastructure but also on the understanding and active participation

of the public (Lee & Lee, 2019). This study stems from the importance of understanding how the implementation of IKD in Surabaya City has influenced the digital transformation of public services and the challenges faced in the process.

The main issue addressed in this study is the low level of public understanding in Surabaya regarding the use of Digital Population Identity (IKD), despite the government's provision of IKD services and socialization efforts. Field observations indicate that many residents are still unfamiliar with using IKD in various public services, while interviews reveal a lack of awareness about the benefits and usage of IKD. This indicates a gap between service provision and public understanding, which is a major obstacle to the success of digital transformation in public services in Surabaya City.

Common solutions that have been developed to address this issue include increasing socialization and education about the benefits and use of IKD (Pemkot Surabaya, 2024). The government is also working to improve access and service quality of IKD, including providing adequate technological infrastructure and technical support for residents in need (Kemendagri, 2023). However, these general solutions have not been fully effective in increasing public understanding and utilization of IKD.

Previous studies have examined various aspects related to the implementation of IKD, but most focus on technical implementation and performance evaluation of related government agencies. For example, research by Zafira (2023) examined the implementation of IKD services at the Population and Civil Registration Office of Surabaya City, while Al Fadhli (2022) evaluated the application of IKD on the level of public service in the same agency. Rosyida's (2021) research also focused on policy innovation in the Kalimasada program through proactive population administration. These studies provide an overview of IKD implementation from the government's perspective but pay less attention to the public's perspective and its impact on the overall digital transformation of public services.

The novelty of this study lies in offering a new perspective on the digital transformation of public services in Surabaya through IKD. Previous studies (Zafira, 2023; Al Fadhli, 2022) focused on implementation from the government's perspective. This study, innovatively, places the public's perspective at the center of analysis, exploring their experiences and perceptions in using IKD. Thus, this study reveals the actual impact of IKD on accessibility, efficiency, effectiveness, and quality of public services, providing a more comprehensive and balanced understanding.

The aim of this study is to analyze the digital transformation of public services in Surabaya City through the implementation of Digital Population Identity (IKD). The results of

this study are expected to provide more effective policy recommendations to enhance public understanding and utilization of IKD, thereby accelerating and improving the success of digital transformation in public services in Surabaya City.

## 2. LITERATURE REVIEW

Previous research on IKD in Surabaya has focused more on implementation from the government's perspective. Zafira (2023) provides an in-depth analysis of IKD service implementation at the Surabaya City Population and Civil Registration Office, offering valuable insights into the internal efficiency and operational processes of IKD from a governmental viewpoint. Similarly, Al Fadhli (2022) evaluates the impact of IKD on public service levels, showing increased efficiency and effectiveness from the perspective of government agencies. Rosyida (2021), in her research on the Kalimasada program policy innovation, highlights government efforts to bring population administration services closer to the community. While these studies contribute significantly to understanding IKD implementation from the government's perspective, they fall short in exploring the experiences and perceptions of the public as the primary service users.

This study fills the knowledge gap by exploring the experiences and perceptions of the public regarding IKD in Surabaya. An in-depth analysis of the benefits, access, technical challenges, and impact of IKD on public service quality will yield effective and sustainable policy recommendations, considering community needs and ensuring the success of digital transformation.

This study integrates two main theories to analyze the impact of Digital Population Identity (IKD) implementation on public services in Surabaya City: green governance public management theory and digital transformation theory. Green governance emphasizes principles of efficiency, transparency, accountability, public participation, and fairness in sustainable government management (Sullivan & Williams, 2019). These principles form the foundation for analyzing the impact of IKD on public service quality in Surabaya.

On the other hand, digital transformation theory is used to evaluate changes in public service processes and mechanisms resulting from IKD implementation. The main focus of this analysis includes the digitalization of public services such as licensing, population, and health, as well as the level of system integration achieved through technology implementation (Luna-Reyes & Gil-Garcia, 2014). Additionally, this study examines the use of population data in planning and decision-making, as well as user experiences with IKD, including ease of access, use, and public satisfaction with the services provided.

### **Diffusion of Innovations Theory**

The Diffusion of Innovations Theory will be used to explain how new technologies, such as IKD, are accepted and adopted by the public. Everett Rogers (2003) explains that there are five characteristics influencing innovation adoption: relative advantage (the superiority compared to previous technologies), compatibility (alignment with user values and needs), complexity (ease of use), trialability (ease of trial), and observability (visibility of results). By analyzing these characteristics in the context of IKD, this study aims to identify factors influencing adoption and utilization levels by the people of Surabaya.

### **E-Government Theory**

The E-Government Theory, as presented in the UN e-Government Survey (2022), provides a foundational framework for understanding how information and communication technology (ICT) is used to enhance government efficiency, effectiveness, transparency, and accountability. In this study, e-Government theory will be used to analyze IKD's contribution to the digital transformation process of public services in Surabaya City. The study will measure IKD's impact on several aspects of public service, including:

- a. Efficiency: Reduction in time and cost to access public services, including wait times, administrative costs, and the number of visits to government offices.
- b. Effectiveness Improvement in service quality and public satisfaction with public services, considering service completion speed and success rates.
- c. Transparency Availability of easily accessible public information through digital platforms, as well as the completeness and clarity of information provided.
- d. Accountability Enhancement of more transparent oversight and accountability mechanisms, including public complaints and government responses to those complaints.
- e. Public Participation Level of public involvement in decision-making and public service oversight, as reflected in participation in online forums and feedback provided to the government.

### **3. RESEARCH METHODS**

This study uses a qualitative case study method to analyze the transformation of public services through IKD in Surabaya, allowing for deep and contextual understanding (Yin, 2018; Stake, 2005). The research location is in Surabaya City. Informants include policymakers, policy implementers, and the public (service users), selected using purposive sampling (Patton, 2002). Data collection is conducted through semi-structured interviews (Kvale & Brinkmann,

2009), participant observation (Emerson et al., 1995), and document analysis (Bowen, 2009). Data analysis uses a thematic approach (Braun & Clarke, 2006), with data validity maintained through triangulation, member checks, and audit trails (Lincoln & Guba, 1985). This approach allows for a comprehensive understanding of public service transformation through IKD in Surabaya.

The validity of this study's data is ensured through several strategies. Data triangulation is used by combining data from interviews, observations, and documents to validate findings. Member checks are conducted to verify data interpretation with informants. Audit trails are documented in detail to ensure transparency and credibility of the research process. These strategies enhance confidence in the validity and credibility of the study's findings.

### **Research Results**

Digital transformation in public services through the implementation of Digital Population Identity (IKD) in Surabaya City has had a significant impact on five main dimensions: efficiency, effectiveness, transparency, accountability, and public participation.

- a. **Efficiency** Efficiency has increased with the reduction of waiting times and administrative costs, as physical documents are no longer required. Good technological infrastructure supports success, although the lack of socialization and public readiness remains a barrier.
- b. **Effectiveness** Effectiveness is evident from increased satisfaction and service speed, with faster data verification. However, resistance to change and low digital literacy remain challenges.
- c. **Transparency** Transparency has improved through real-time information access in the IKD application, supported by information disclosure regulations. The main barriers are the public's lack of awareness of their right to information and concerns about personal data security.
- d. **Accountability** Accountability is strengthened with digital complaint features that enhance government response. Regulations supporting public oversight help, but the lack of trained personnel needs to be addressed to maintain consistent responses.
- e. **Public Participation** Public participation has increased with the presence of online forums and feedback features. Digital literacy campaigns encourage increased participation, but the digital divide still limits the involvement of some communities.

#### **4. DISCUSSION**

Transformation of Public Services through the Implementation of Digital Population Identity (IKD) in Surabaya City

Digital transformation is a key pillar in enhancing public services to be more effective, efficient, and inclusive. Surabaya City, known for its public service innovations, has introduced the Digital Population Identity (IKD) as a complement to the electronic ID card (e-KTP). IKD leverages digital technology to enable more flexible and convenient access to population administration services. This study aims to analyze the transformation of public services through the implementation of IKD in Surabaya, examining five main dimensions: efficiency, effectiveness, transparency, accountability, and public participation.

- a. **Efficiency** Public service efficiency focuses on reducing the time and costs required for the public to access services. The implementation of IKD in Surabaya significantly reduces the need for physical documents. Identity can be accessed directly through digital devices, reducing long queues at the Population and Civil Registration Office (Dispendukcapil). According to Dispendukcapil Surabaya data, the waiting time for reprinting e-KTPs has drastically decreased as many residents use IKD as a physical identity card replacement. Additionally, administrative costs have decreased as additional document printing is no longer required. Supriyanto et al. (2023) state that efficiency has increased due to adequate technological infrastructure, such as stable internet networks and user-friendly IKD applications. However, some challenges in efficiency still arise. The biggest challenge is the unpreparedness of the public, who do not fully understand digital technology use. Minimal socialization about how IKD works and its benefits also slows widespread adoption. Therefore, enhancing digital literacy and conducting massive campaigns about IKD use are important steps to overcome these obstacles.
- b. **Effectiveness** The effectiveness of public service transformation through IKD is evident from improved service quality and public satisfaction levels. According to a survey by Fadhli (2023), 78% of respondents stated that using IKD facilitates the submission of population documents such as e-KTPs and Family Cards (KK). The digital system allows for automatic data verification, reducing the risk of human error in data processing. The main factor driving effectiveness is intensive training for administrative officers in using the new digital system. Additionally, the IKD application is designed with an intuitive interface that facilitates user navigation. However, resistance to change from the community accustomed to manual methods is

- a significant challenge. Low digital literacy levels in some groups slow the adoption of new technology. Therefore, digital literacy training programs focusing on the elderly and communities with limited access are important solutions to enhance effectiveness.
- c. **Transparency** Transparency is a key element in realizing accountable public services. The implementation of IKD provides more open and real-time information access to the public. The status of document submission services can be monitored through the IKD application, integrated with the population information system. Users can know the stages of their application process, data changes, and requirements to be met. Regulatory support encouraging information openness is an important factor in increasing transparency. The application interface designed for easy navigation also promotes information accessibility. However, the main challenge to transparency is the public's low awareness of their right to obtain public information. Rosyida (2023) mentions that concerns related to personal data privacy and information security are transparency barriers that must be addressed with strong data protection regulations and awareness campaigns about information access rights.
  - d. **Accountability** Accountability refers to the government's ability to be responsible for the public services provided. The implementation of IKD strengthens accountability by providing a digital complaint mechanism. This feature allows the public to report service-related complaints, which can be monitored directly through the application. Data from Dispendukcapil Surabaya shows a significant increase in government response to citizen complaints. Before IKD implementation, the average complaint resolution time reached five days. After complaints were submitted online through the IKD system, the resolution time decreased to two days (Nugraha et al., 2022). Regulations encouraging public oversight and transparent reporting systems are key factors in strengthening accountability. However, the lack of trained human resources to handle complaints quickly and consistently remains a constraint. Therefore, capacity development for officers and enhancement of supporting technology are needed to ensure more effective complaint management.
  - e. **Public Participation** Digital transformation of public services aims to increase public participation in decision-making and service oversight. The implementation of IKD in Surabaya allows the public to provide input and feedback through online forums and input systems in the application. Citizen participation in online forums increased by 40% in the first six months since the launch of IKD, according to Zafira (2022). Active digital literacy campaigns are one of the drivers of increased participation. Easy access

to online platforms also encourages more people to get involved. However, the digital divide among communities lacking technological devices or adequate internet access is a major barrier. Solutions to increase participation include providing wider and cheaper internet access and technology device subsidy programs for underprivileged communities. This is important for creating more inclusive engagement and ensuring that all citizens have equal opportunities to participate in public service processes.

- f. **Comprehensive Analysis** The transformation of public services through IKD in Surabaya City offers many significant benefits. In terms of efficiency, reduced waiting times and administrative costs have a major positive impact. However, resistance from those not accustomed to digital technology and lack of socialization are challenges that must be addressed promptly. Service effectiveness has improved with faster document processing, although low technological literacy remains a barrier. Transparency has improved with more open real-time information access, but data privacy concerns must be addressed with stricter protection. Stronger accountability is realized through digital complaint systems, but there is a need to enhance staff capacity to maintain consistent response quality. Public participation has increased significantly, but more inclusive solutions are needed to reach all community levels. In conclusion, although digital transformation through IKD brings significant advancements in public services, strengthening digital literacy, data security, and digital inclusion is key to ensuring maximum and sustainable benefits.

## **5. CONCLUSIONS AND RECOMMENDATIONS**

### **Conclusions**

The digital transformation of public services through the implementation of Digital Population Identity (IKD) in Surabaya City has positively impacted efficiency, effectiveness, transparency, accountability, and public participation. Efficiency has improved with reduced waiting times and administrative costs, as physical documents are no longer needed, although the lack of socialization and public readiness remains a challenge. Effectiveness has increased with faster data verification and higher public satisfaction, but resistance to change and low digital literacy continue to be obstacles. Transparency is strengthened with real-time information access through the IKD application and information disclosure regulations, although low public awareness and concerns about personal data security need to be addressed. In terms of accountability, digital complaint features enhance government response, although workforce limitations restrict service consistency. Public participation has increased with the

presence of online forums and feedback features, supported by digital literacy campaigns, but the digital divide still hampers inclusivity. Overall, IKD brings significant changes to public services in Surabaya, although further strategies are needed to address various technical and social challenges.

## **RECOMMENDATIONS**

To optimize IKD in Surabaya, there is a need for increased socialization and digital literacy through targeted campaigns across various media, as well as intensive training and mentoring, especially for vulnerable groups. Educational materials should be easy to understand and available in various formats. Technological infrastructure also needs improvement by ensuring widespread and affordable internet access, enhancing the capacity of IKD application servers, and developing more user-friendly and responsive application features. Enhancing support features and application usage guides is also crucial. These steps will address socialization, digital literacy, and technical challenges, maximizing the benefits of IKD for all Surabaya residents.

## **FURTHER RESEARCH**

Further research recommendations related to the impact of Digital Population Identity (IKD) in Surabaya include a comparative study of implementation in various regions in Indonesia. This research will compare the implementation of Digital Population Identity in Surabaya with its implementation in other cities in Indonesia that have different demographic characteristics and levels of technological development.

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