

Effectiveness Application Identity Digital Population (IKD) in Public Administration Services in Sidoarjo Regency

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ABSTRACT

Objective: This study evaluates the effectiveness of implementing the Digital Population Identity (IKD) in improving the quality of public administrative services in Sidoarjo Regency as part of the government's digital transformation agenda. **Method:** A qualitative descriptive approach was adopted, employing interviews, observations, and documentation, with data analyzed using the interactive model of Miles and Huberman to capture comprehensive insights. **Results:** Findings show that although IKD has been launched across all sub-districts, the activation rate remains relatively low at 13.55% of the total ID-obligated population. Using Budiani's (2007) effectiveness indicators – program target, socialization, implementation, and evaluation – the study highlights that IKD implementation has yet to reach optimal effectiveness, especially in regions with limited digital infrastructure and low technological literacy. While outreach initiatives such as mobile services and community-based programs have been introduced, they have not sufficiently engaged all community groups. **Novelty:** This research provides a critical evaluation of IKD as a strategic innovation in population administration, offering new insights into the challenges of digital inclusion and underscoring the importance of equitable access, infrastructure development, and active community involvement for the sustainable success of e-government initiatives.

INTRODUCTION

In the era of increasingly rapid digitalization, the government is striving to advance public services by maximizing the use of information technology. Digitalization efforts in public administration aim to create services that are more efficient, transparent, and easily accessible to the public [1]. One form of digital transformation in population administration in Indonesia is the Digital Population Identity (IKD), developed by the Ministry of Home Affairs through the Directorate General of Population and Civil Registration (Ditjen Dukcapil). IKD is a digital-based population identity and can be accessed through electronic devices. It is hoped that this IKD will be able to replace the Electronic Population Identity Card (e-KTP) in various administrative services [2].

The implementation of Digital Population Identity (IKD) refers to the Regulation of the Minister of Home Affairs of the Republic of Indonesia Number 72 of 2022 [3]. This regulation establishes standards and specifications for hardware and software related to the implementation of IKD. The purpose of this regulation is to ensure the security, efficiency, and accessibility of digital population data. Thus, the public can access their population documents through mobile devices without having to rely on physical documents. The innovation initiated by the Directorate General of Population and Civil Registration of the Ministry of Home Affairs (Ditjen Dukcapil Kemendagri) is considered capable of meeting the public's needs in improving the quality of public services. This is

reflected in the assessment of the IKD application on Google Playstore and App Store with a score of 3.2 out of 5.0, which indicates quite good appreciation from users (Kemendagri, 2023) in [4].

In the context of e-Government, the transition from e-KTP to Digital Population Identity (IKD) not only aims to improve the efficiency of public services but also to reduce the burden on the state budget. According to the 2023 State Budget report issued by the Ministry of Finance [5], the implementation of IKD can help reduce the production and distribution costs of KTP forms, which currently require a significant budget. Thus, budget allocation can be further optimized for the development of a more modern and integrated digital system.

Before the advent of Digital Population Identity (IKD), people often faced various challenges in managing population administration. Long queues, complicated bureaucracy, and limited access to services, especially in remote areas or economically disadvantaged communities, were common problems [6]. In addition, data duplication, loss of physical e-KTPs, and deficiencies in the identity verification system also hampered the effectiveness of population services [7]. Therefore, the implementation of IKD is expected to be an innovative solution that can overcome these various obstacles, by providing easier access, increasing data accuracy, and accelerating the population service process [8]. This application also makes it easier for the public to access various services such as making KTPs, KKs, and birth certificates online and is designed to help administrative officers manage population data more quickly [9]. The availability of comprehensive services shows that this program is responsive and relevant to field needs and services are provided directly on site through devices carried [10].

The Sidoarjo Regency Government, as one of the regions that has achieved a fairly high level of service digitalization, has implemented Digital Population Identity (IKD) in its population administration system. This initiative aims to support comprehensive digital transformation while increasing the effectiveness of public services [11]. According to a survey conducted by the Indonesian Internet Service Providers Association (APJII) in 2022, the number of internet users in Indonesia has exceeded 210 million people [12]. This indicates a significant potential for the public to adopt digital services such as IKD. Furthermore, a study released by the Ministry of Administrative and Bureaucratic Reform (PANRB) shows that the application of technology in public services can increase operational efficiency by up to 40% and reduce administrative risk errors that often occur in manual systems [13].

Table 1. Recapitulation of the Number of IKD Activations in Sidoarjo Regency as of April 11 2025

No	Subdistrict	Number of Activations
1.	Tarik	4.864
2.	Prambon	9.281
3.	Krembung	7.095

No	Subdistrict	Number of Activations
4.	Porong	4.172
5.	Jabon	3.082
6.	Tanggulangun	5.449
7.	Candi	16.685
8.	Sidoarjo	21.042
9.	Tulangan	10.560
10.	Wonoayu	6.778
11.	Krian	13.189
12.	Balombangendo	12.622
13.	Taman	23.332
14.	Sukodono	16.496
15.	Buduran	12.519
16.	Gedangan	9.127
17.	Sedati	11.124
18.	Waru	21.303
	Total	208.720

Mandatory KTP Data	1.540.668
Target for digital population identity activation.	462.200
IKD Activation Realization.	13,55%
Percentage of Realization and Target.	45,16%

Source: Processed by the Population and Civil Registry Service of Sidoarjo Regency

Based on data from the Sidoarjo Regency Population and Civil Registration Office as of April 11, 2025, of the total 1,540,668 residents required to have a KTP, only 208,720 had activated their Digital Population Identity (IKD). This indicates that the activation rate has only reached 13.55%, reaching only around 45.16% of the set activation target of 462,200 people. The three districts with the highest number of activations are Taman (23,332 people), Waru (21,303 people), and Sidoarjo (21,042 people). However, most other districts still recorded relatively low activation rates. This condition indicates a gap between the implementation of digitalization policies and public acceptance and participation on the ground.

Although the use of Digital Population Identity (IKD) brings a number of positive benefits, several problems still require solutions. The most glaring obstacle is the unequal distribution of digital skills among the public, which is exacerbated by limited access to technological devices. Furthermore, technical disruptions such as system instability and uneven network infrastructure are also a problem. Concerns about the security of personal data are also a significant issue that can affect public trust in this system.[14]

In this context, this study aims to demonstrate the effectiveness of IKD implementation in improving the quality of public administration services in Sidoarjo

Regency. It will also identify factors that support and hinder IKD implementation and analyze its impact on efficiency, transparency, and the quality of population administration services. Therefore, it is hoped that the results of this study will provide insights and strategic recommendations for local governments in optimizing IKD implementation to make it more effective and inclusive.

Several previous studies have also discussed the implementation of IKD (Digital Population Identity) in public administration services in various regions. In a study conducted by [15], the implementation of IKD was examined in Wonorejo Village, with an emphasis on socialization and application activation. However, a comprehensive evaluation of its effectiveness has not been conducted. On the other hand, a study conducted by [16] In the era of globalization, information technology is key to creating effective, efficient, and fast governance. The government launched the Digital Population Identity Application (IKD) to facilitate population administration services. Qualitative research in Kebonwaris Village showed that the implementation of IKD was quite effective, especially in terms of efficiency, adequacy, and feasibility. However, its effectiveness was not optimal due to the lack of socialization and low digital literacy among the community, so that the indicators of equality and responsiveness were not met. However, this study was still limited to the aspect of community understanding of the system, without investigating in depth the effectiveness of population administration services. In addition, Wila and Swalaganata[17] identified that the effectiveness of IKD in East Sumba Regency was still hampered by low smartphone ownership, unequal internet access, and technical problems with the SLAK network system.

Unlike previous studies, this study specifically examines the effectiveness of the Digital Population Identity (IKD) implementation in Sidoarjo Regency. This research focuses on the impact of IKD on the efficiency, transparency, and accessibility of population administration services. Therefore, it is hoped that this research will provide new insights into measuring the effectiveness of IKD implementation and provide recommendations for local governments to optimize digital-based services.

To measure the effectiveness of the implementation of IKD in Sidoarjo Regency, this study refers to the theory of application effectiveness proposed by Budiani[18]. This theory assesses the effectiveness of technology-based systems by relying on four main indicators, namely program targets, socialization, implementation, and evaluation.

First, the program targeting indicator assesses the extent to which the IKD implementation has reached target groups, such as migrant workers, students, and residents of the Sidoarjo area. Second, the socialization indicator measures the government's efforts to introduce and educate the public about the benefits and how to use the IKD.

Third, implementation indicators cover infrastructure readiness, human resources, and inter-agency coordination in implementing the IKD. Finally, evaluation indicators serve to assess the IKD's success in improving the efficiency and transparency of population administration services, while also identifying ongoing issues.

By utilizing these indicators, this study aims to achieve the effectiveness of the implementation of Digital Population Identity (IKD) in Sidoarjo Regency, while also providing recommendations to increase the success of implementation in the future.

RESEARCH METHOD

This research uses a qualitative method with a descriptive type. According to Creswell in [19] qualitative research is a method used to study and understand the perceptions of individuals or groups towards social or humanitarian problems. This method allows researchers to explore social phenomena in more depth by using various data collection methods, such as observation, documentation, and in-depth interviews. The qualitative approach is used to understand in depth how the identity of the Digital Population Application (IKD) takes place in public administration services, especially in Sidoarjo Regency. Meanwhile the descriptive approach is to describe the conditions or situations that occur in the field systematically and accurately. This research was conducted in Sidoarjo Regency, precisely at the Population and Civil Registration Service (DISDUKCAPIL) of Sidoarjo Regency, which is the implementing agency for the implementation of IKD using a purposive sampling informant determination technique, namely a research method in which the sample selected is in accordance with the research objectives [20]. This research prioritizes understanding of, the meaning of perception, values and social interaction processes that occur in the context of the application of IKD in the field.

For data analysis, this study follows the interactive model proposed by Miles and Huberman, which includes data reduction, data presentation, and conclusion drawing. Data obtained from literature studies and interviews were then coded, processed, and analyzed to gain a more comprehensive understanding of the application of Big Data in public service transformation in Sidoarjo.

RESULTS AND DISCUSSION

Results

1. Program Targets

The effectiveness of digital-based public policies, such as the Digital Population Identity (IKD), is measured by its ability to improve the quality of population administration services quickly, accurately, securely, and equitably. The main goal of this program is to shorten the turnaround time for KTP/el-KTP services through digital verification, increase the percentage of on-time service delivery, and reduce the number of public complaints about delays.

In addition, this program is aimed at expanding the reach of services to remote areas through the use of the IKD application and outreach programs so that previously difficult-to-serve community groups can still access services. From a security perspective, the program's targets include improving population data protection with encryption and authentication systems to reduce the risk of loss or damage to physical documents. Thus, IKD not only speeds up and simplifies services, but also ensures inclusiveness for

vulnerable groups such as the elderly, students, migrant workers, and residents living in areas with technological limitations. The following is a detailed comparison of conditions before and after the implementation of IKD, which can be seen in Table 2 below:

Table 2. Tables and figures should be valuable, relevant, and visually attractive

Service Indicator	Before Implementation of IKD	After the Implementation of IKD	Changes that Occurred
Average processing time for ID card/e-ID card services	3-5 working days	1-2 hari kerja	Faster by $\pm 50\%$ because verification is carried out digitally
Persentase layanan selesai tepat waktu	$\pm 72\%$	$\pm 90\%$	An 18% implementation due to the acceleration of the verification and document distribution process
Number of delay complaints	± 85 cases/month	± 30 cases/mont	A significant decrease in public complaints
Level of access to services in suburban areas	Low, only served when mobile services are available	Medium, accessible through the IKD application and the jemput bola (proactive outreach) program.	Access has increased, although infrastructure remains a challenge
Population data security	Rental loss/ damage of physical documents	More secure with authentication	Data protection is increased through encryption systems

Source: Processed from the results of interviews, field observations, estimates based on data from the Sidoarjo Regency Population and Civil Registry Service 2025.

Based on the data presented in Table 2, this phenomenon suggests that the implementation of the IKD has had a positive impact on improving the performance of KTP/el-KTP services. Prior to the implementation of the IKD, the average service completion time was 3-5 business days, while after the implementation, this time was reduced to 1-2 business days. This indicates a service acceleration of approximately 50% due to the digital verification process.

The percentage of services completed on time also increased from approximately 72% before the implementation of the IKD. This 18% increase occurred thanks to the acceleration of document verification and distribution. The number of complaints about

delays decreased significantly from approximately 85 cases. This decrease indicates an improvement in service quality and public satisfaction. In terms of service access in remote areas, before the implementation of the IKD, access was limited and only available when mobile services were available. After the implementation, the public can access services through the IKD application and the jemput bola program, thus increasing access although infrastructure constraints still exist. The security of population data has also improved. Before the implementation of the IKD, data was vulnerable to loss or damage because it was in the form of physical documents. After the implementation, data security is more assured through authentication and encryption systems, thus strengthening the protection of population data. Overall, the implementation of the IKD accelerates the service process, improves the accuracy of timeliness of completion, reduces complaints, expands access, and improves the security of population data.

2. Socialization

Socialization is a crucial element in the successful implementation of technology-based public policies. In the context of the implementation of Digital Population Identity (IKD), socialization plays a strategic role, namely to increase public understanding, awareness, and readiness to participate actively. Without adequate support in understanding the function, benefits, and procedures for activating IKD, the public tends to be passive and less enthusiastic about adapting to this new system. Therefore, the key to building public understanding, awareness, and active participation in digital-based population services requires socialization using traditional methods, but also integrating them into various programs. Based on interviews, socialization of mobile services, such as Jemput Bola Terpadu (JBT), Gowes to Service (GTS), as well as community service activities at the neighborhood level such as neighborhood security posts. In each of these activities, IKD activation is always included as part of the services provided.

An interview with an informant from the Sidoarjo Regency Population and Civil Registration Office revealed that outreach activities are conducted routinely, twice a week. These activities are aimed at various segments of the community, including direct visits to schools and villages to reach youth groups and grassroots communities. As the informant stated:

"Socialization is carried out 5 times a week and is carried out in schools, also in villages, there are 15 to 20 villages." (Interview, Mr. Kahfi as IKD Operator, April 15, 2025)

These findings indicate that local governments have taken concrete steps to disseminate information about the IKD. However, the low activation rates in several sub-districts indicate that the intensity and methods of outreach have not been fully effective in building optimal public understanding and engagement. This may be due to a lack of a personal approach, a limited number of outreach workers, or delivery media that are not aligned with local conditions. In an analysis of previous theory and research, Budiani (2007) emphasized the importance of effective outreach in reaching all levels of society. Outreach should not only convey information, but also build engagement and trust in the program being implemented. Research conducted [15] found that in Wonorejo Village, the lack of interactive outreach methods resulted in some residents not

understanding the importance of IKD activation, even though outreach activities had been carried out. Therefore, more varied and contextual communication strategies are needed, such as a community-based approach, the use of local media, and the involvement of community leaders and students as agents of digital change.

Discussion

Evaluation

The implementation of Regional Decision Innovation (IKD) by local governments is still limited to counting the number of activations. There is no evidence of qualitative evaluations addressing service impacts, user experiences, and the technical and social challenges faced by the community. As a result, policy improvement efforts are not based on comprehensive field data. Furthermore, evaluations involving community feedback have not been systematically implemented, despite their critical importance for gradual program refinement.

In his analysis of previous theory and research, Budiani stated that the success of a program should not only be measured by outputs such as the number of activations, but also by its outcomes and impact on the community. Without a comprehensive evaluation, potential improvements cannot be implemented appropriately. Research conducted by [8] shows that the implementation of IKD without continuous evaluation tends to stagnate and risks eroding public trust. Therefore, local governments need to build a participatory and data-driven monitoring and evaluation system.

CONCLUSION

Fundamental Findings : This study found that the implementation of Digital Population Identity (IKD) in Sidoarjo Regency has had a positive impact on accelerating population administration services, improving data security, and expanding access through the outreach program. However, the low activation rate (13.55% of the total mandatory KTPs) indicates that the program's effectiveness is not optimal. The main obstacles include low digital literacy among the community, limited technological infrastructure, and the absence of a comprehensive evaluation system. **Implications :** These findings imply the need for local government strategies to strengthen more varied and community-based socialization, increase the distribution of digital infrastructure, and build participatory evaluation mechanisms. These important efforts are so that IKD is not only an administrative innovation, but also able to realize inclusive, efficient, and reliable public services. **Limitations :** The limitation of this study lies in the spatial scope that only focuses on Sidoarjo Regency with a descriptive qualitative approach, so that the results cannot be generalized widely. Furthermore, effectiveness places more emphasis on the creator's perspective and activation achievements, while the direct experiences of the user community have not been explored in depth. **Future Research :** Future research is recommended to expand the study area to other regions with different digital infrastructure conditions, and use quantitative or mixed methods to measure user satisfaction and experience more comprehensively. Comparative analysis between

regions can also provide a richer picture of the success factors and challenges in IKD implementation at the national level.

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