

# Digital Transformation in Family Card (KK) Services Through the Digital Population Identity (IKD) Application

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## ABSTRACT

**Objective:** This study aims to analyze how the digital transformation of Family Card (KK) renewal services through the Digital Population Identity (IKD) application at the Sidoarjo Regency Population and Civil Registration Office is progressing, specifically in terms of technological readiness, human resource competencies, policy support, and community participation in utilizing digital services. **Method:** This study employs a qualitative descriptive approach with data collection techniques including interviews, observations, and documentation. Informants were selected using purposive sampling, involving Disdukcapil officials and members of the public who use the IKD. Data analysis was conducted using the Miles and Huberman model, referencing Vial's (2019) digital transformation framework. **Results:** The findings indicate that the IKD service has successfully made the process of splitting family cards more practical, faster, and accessible from home. Infrastructure and human resources are sufficiently supportive, though minor challenges remain, such as limited devices, network disruptions, and an activation process that initially confused some members of the public. Service procedures have become more efficient compared to manual methods, although they still depend on system stability. Public participation has also increased, although it still requires stronger guidance and digital literacy. **Novelty:** The novelty of this research lies in its specific focus on IKD-based family registration services, using a comprehensive approach that integrates technological, human resource, organizational, and community aspects within a single framework of digital transformation, thereby providing new insights into the development of more adaptive and relevant digital public services.

## INTRODUCTION

Advances in information and communication technology in the digital age have brought about significant changes in the delivery of public services, particularly through the transformation of service systems from manual to electronic-based. Digital transformation is carried out to improve the effectiveness, efficiency, transparency, and quality of services to the public so that they are faster, easier, and more flexible, unrestricted by time and space. Additionally, the digitization of public services also supports the realization of good governance through increased accountability and transparency of information. These changes are also influenced by the public's growing demands for services that are practical, integrated, and responsive to technological advancements. In practice, digital transformation can reduce cumbersome bureaucracy, minimize service queues, and accelerate administrative data processing. Therefore, digital transformation has become a critical strategy for the government in improving the quality of public services in the modern era [1]–[3].

The phenomenon of digital transformation in public services in Indonesia has been gaining momentum in recent years. The central government continues to promote the digitization of services across various agencies through the development of electronic service systems. According to the Ministry of State Apparatus and Bureaucratic Reform

(PANRB) in 2024, the digitization of public services is being carried out as an effort to accelerate bureaucratic reform and improve the quality of services to the public through the integration of national digital services. This change is marked by an increasing number of administrative services that can be accessed online through government applications or official websites. This situation indicates that digital transformation has become a national strategic agenda in enhancing the effectiveness of public services [4], [5].

The digital transformation of public services in Indonesia is also supported by various government regulations. One key regulation is Presidential Regulation No. 95 of 2018 on the Electronic-Based Government System (SPBE), which serves as the foundation for the implementation of digital-based government services. Additionally, Law No. 24 of 2013 Amending Law No. 23 of 2006 on Population Administration reaffirms the government's commitment to digitizing population administration services to create more effective, efficient, and transparent services. The implementation of these regulations is evident in the development of various digital-based population administration services by the Directorate General of Population and Civil Registration (Ditjen Dukcapil), such as online population document services and the implementation of the Digital Population Identity (IKD) in various regions across Indonesia. This regulation encourages every government agency to innovate technology-based services to improve bureaucratic effectiveness. With the support of this regulation, the digital transformation of public services in Indonesia continues to develop across various sectors, including population administration [6], [7].

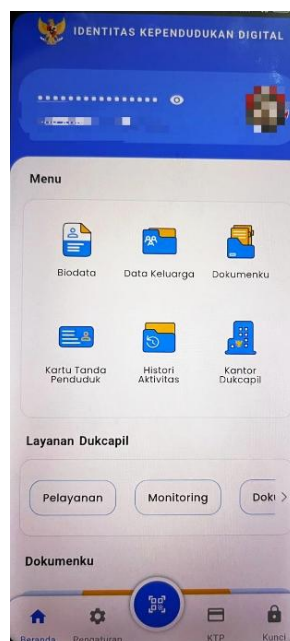
One manifestation of digital transformation in civil registration is the implementation of the Digital Identity System (IKD). IKD is a digital service innovation developed by the Directorate General of Population and Civil Registration of the Ministry of Home Affairs to make it easier for the public to access civil registration documents electronically via smartphones. The implementation of the DCI aims to improve the efficiency of civil registration services and reduce the public's reliance on physical documents. Through the DCI, the public can conveniently store and access various civil registration documents such as digital ID cards, Family Cards, and other documents. This transformation represents a strategic step by the government toward creating modern and integrated civil registration services [8].

The implementation of the Digital Population Identity (IKD) in Indonesia is supported by various regulations that promote the digital transformation of population administration services. Ministry of Home Affairs Regulation No. 72 of 2022 on Standards and Specifications for the Implementation of the Digital Population Identity (IKD) governs the mechanisms for the implementation and use of the IKD at the national level, while Ministry of Home Affairs Regulation No. 7 of 2019 on Online Population Administration Services serves as the legal basis for the implementation of digital-based population administration services. Furthermore, the development of the Population Administration Information System (SIK) is reinforced by Article 87(a) of Minister of Home Affairs Regulation No. 95 of 2019 on the Population Administration Information

System (SIAK), which states that the review and development of SIAK are carried out by the Ministry through the Directorate General of Population and Civil Registration. The implementation of these regulations is evident in the accelerated activation of the Integrated Population Data System (IKD) through sub-districts, Public Service Centers, and outreach services provided by the Population and Civil Registration Offices in various regions. Local governments have also begun developing digital-based population administration services integrated with the centralized SIAK to expedite services to the public. Thus, this regulation demonstrates the government's commitment to realizing population administration services that are more effective, efficient, and easily accessible to the public [9]-[11].

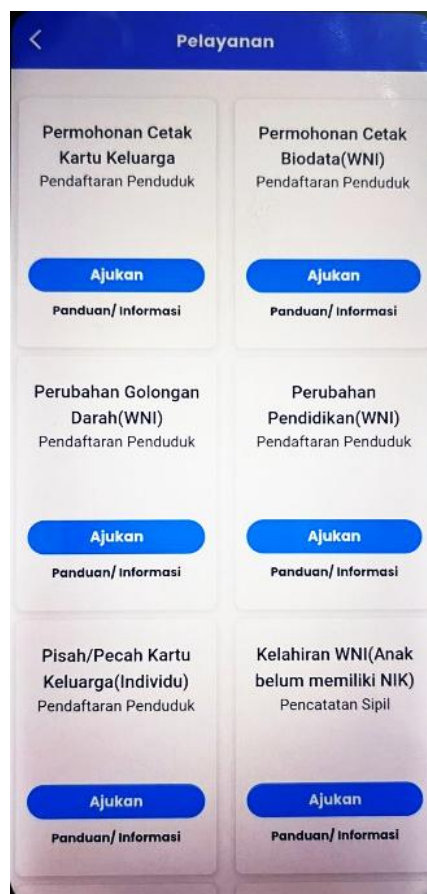
The Digital Population Identity (IKD) is an official application developed by the Directorate General of Population and Civil Registration to make it easier for the public to access population documents digitally. IKD not only serves as a digital replacement for the electronic ID card (KTP), but also integrates various population documents into a single application. Through this application, the public can independently access resident biodata, family data, civil registration documents, and the history of civil registration administrative services via their smartphones. The availability of IKD provides convenience for the public because administrative services no longer require in-person visits to service offices. Thus, IKD represents a form of digital innovation in civil registration administrative services [12], [13].

The IKD app offers a variety of online civil registration services. IKD is designed as an integrated platform that combines digital identity and various civil registration documents into a single app, allowing users to access services independently via their smartphones. To give you an idea of what the app looks like, here is a screenshot of the IKD app's home screen [14].



**Figure 1.** Home Screen of the IKD Identity App  
Source: Author's documentation, 2025

As shown in Figure 1, the IKD app's home screen displays the user's digital identity along with several main menus, such as personal information, family data, civil registration documents, and service activity history. This interface indicates that the IKD app is designed to enable the public to access various civil registration services quickly and conveniently without having to visit a service office in person. In addition to providing digital identity information, the IKD app also features various online-based civil registration service menus. Through these service menus, the public can independently submit various administrative requests, including services for splitting or separating the Family Card (KK). The following is a view of the types of services available on the IKD app [15], [16].



**Figure 2.** IKD Service Type Menu

Source: Author's documentation, 2025

As shown in Figure 2, the IKD application provides various types of online civil registration services, one of which is the service for splitting or separating Family Cards (KK). The availability of this feature reflects a digital transformation in civil registration services aimed at improving service effectiveness, facilitating public access, and reducing reliance on manual processes.

The development of the Digital Population Identity (IKD) in Sidoarjo Regency is supported by local government policies aimed at strengthening digital-based population administration services through the Population and Civil Registration Office

(Dispendukcapil). Dispendukcapil of Sidoarjo Regency also continues to conduct outreach and provide guidance on the use of IKD to the public through sub-districts, villages, and the Public Service Mall (MPP). In practice, IKD is utilized to support various population administration services, including online services for updating family data and splitting Family Cards (KK). As reported by Radar Sidoarjo in 2025, the local government continues to accelerate the activation and utilization of the IKD to support the digital transformation of population services. This situation indicates that population administration services in Sidoarjo Regency are beginning to shift toward a service system that is more practical, faster, and based on digital technology. One example of this digital transformation is the Family Card (KK) splitting service, which is a population administration service with a high level of demand among the public [17], [18].

Changes in family structure resulting from marriage, divorce, or the formation of new families require citizens to update their demographic data through the household registration split service. Previously, the process of applying for a household registration split was done manually by visiting the subdistrict office or the Population and Civil Registration Office, which often led to long lines and required a considerable amount of time to complete. However, through the implementation of the Integrated Population Data System (IKD), the public can now submit applications for splitting family registration records online without having to visit the service office in person. This service transformation is one of the government's efforts to enhance the effectiveness, efficiency, and accessibility of population administration services for the public.

Nevertheless, the implementation of digital-based family registration (KK) services still faces various challenges on the ground. According to a 2025 report by DetikJatim, the public complained about access disruptions to the Sidoarjo Population and Civil Registration Office's online services, which affected the online processing of civil registration services [19]. Additionally, there are still members of the public who do not understand the procedures for using digital services and therefore prefer to use manual services. This situation indicates that the digital transformation process in population administration still requires an adaptation period for both the public and service providers. To track the development of digital and manual household registration split services in Sidoarjo Regency, the following data presents the number of applicants for household registration split services from 2021 to 2025.

**Table 1.** Trends in the Number of Applicants for Family Card (KK) Splitting Services in Sidoarjo Regency, 2021–2025

Year	Applicants Splitting Family Registration Via IKD	Applicants Splitting Family Registration Manually	Notes
2021	-	4.808	In the early stages of Plavon's implementation, most processes were still manual

2022	-	4.274	A shift toward online services began
2023	-	3.526	The use of Plavon continued to grow
2024	104	3.367	The national government began piloting the IKD system, adding a feature for online household registration splits.
2025	230	2.542	Digitalization became increasingly established

Source: Compiled by the author, 2025

Table 1 shows a shift in the family registration split service model in Sidoarjo Regency from a manual system to a digital service. In 2021, the number of applicants for manual family registration splits reached 4,808, as the digital service was still in the early stages of development through the Plavon app. Entering 2022 and 2023, the number of manual applicants began to decline as the use of online services increased. In 2024, the household registration split service via the Integrated Data System (IKD) began to be implemented with 104 applicants, then increased to 230 applicants in 2025. Meanwhile, the number of manual applicants continued to decline, reaching 2,542 applicants in 2025. These data indicate that the digital transformation of family card splitting services is beginning to show progress, although manual services are still quite dominant among the public.

Based on this data, it is evident that the digitization of family card (KK) renewal services through the IKD is beginning to influence changes in the patterns of civil registration services in Sidoarjo Regency. The decline in the number of manual applicants indicates a gradual shift among the public toward the use of digital services. However, the number of users of KK renewal services via the IKD remains relatively low compared to the still-high volume of manual services. This situation suggests that the digital transformation process has not yet been fully optimized. In addition to technological factors, the public's level of understanding regarding the use of digital services is also a factor influencing the implementation of the IKD. Therefore, further evaluation is needed regarding the effectiveness of the digital transformation of family registration services via the IKD.

This situation highlights a gap between policies on the digitization of civil registration services and their implementation on the ground. In theory, the implementation of the Digital Identity System (IKD) is expected to provide fast, convenient, and efficient services. Currently, the public can also apply for a split Family Card (KK) online through the IKD app without having to visit the sub-district office or the Population and Civil Registration Office (Dispendukcapil) in person as before, thereby providing greater convenience in managing population documents in a more independent and flexible manner.

However, various technical and non-technical challenges have been encountered in its implementation. First, regarding human resource capabilities, the outreach efforts conducted by IKD service staff are considered insufficient, resulting in many members of the public still not understanding the app's functions and how to use it. Second, regarding public participation, not everyone is ready to switch to digital services, as some still prefer offline services, which they consider easier and less complicated. Third, regarding technological readiness and infrastructure, challenges persist, such as inadequate devices among the public, a confusing account activation process, and unstable internet connectivity, which prevent optimal use of the application. Additionally, regarding policy support and organizational culture, the adaptation process toward a digital service system still requires strengthened commitment and more structured implementation strategies. These conditions indicate that digital transformation requires not only technological readiness but also organizational readiness, as well as the readiness of government officials and the public as service users.

Previous research indicates that digital transformation in civil registration services is a key factor in efforts to improve the quality of public services in Indonesia. First, a study conducted by L. Mursyidah, I. U. Choiriyah, and I. F. Agustina (2024), titled "Transformation of Population Administration Services in Sidoarjo Regency," indicates that the Sidoarjo Regency Population and Civil Registration Office has implemented various innovations in population administration services through the Peduli Dilan program, PLAVON Dukcapil, and the Integrated Outreach Service. The research results indicate that the digital transformation of services has been effective in enhancing the effectiveness and efficiency of population administration services, particularly in expanding service reach to the public. The digitization of services through the PLAVON application is also considered significant in supporting online administrative services during the Covid-19 pandemic. However, the study still focuses on the transformation of population administration services in general and has not specifically discussed the implementation of Family Card (KK) splitting services through the Digital Population Identity (IKD) [20].

Second, a study conducted by S. A. N. S. Dewi et al. (2023) titled "Digital Transformation of Public Service Innovation via the JAKI App in Realizing Smart Governance in DKI Jakarta" shows that the DKI Jakarta government has implemented digital transformation through the JAKI app to support smart governance. The research findings indicate that aspects of leadership, collaboration, accountability, and transparency have been implemented quite significantly in supporting digital-based public services. However, digital transformation through the JAKI application still faces several challenges, such as low public participation, suboptimal service integration, and data security issues resulting from cyberattacks. This study also indicates that the success of digital transformation is influenced by regulatory support, the availability of experts, and inter-agency collaboration, although the optimization of digital services still needs to be improved [21].

Third, a study conducted by A. A. Zahro and E. S. Wahyuni (2024) titled “The Transformation of the E-KTP into a Digital KTP through the Digital Population Identity (IKD) Application in Bulak Banteng Subdistrict” shows that digital transformation via the Digital Population Identity application has a significant impact on improving the efficiency of population administration services. The research findings explain that the implementation of the IKD is capable of simplifying services, accelerating access to population documents, and improving operational efficiency across various public service sectors. Furthermore, digital transformation via the IKD is also considered capable of reducing the use of physical documents and supporting the digital integration of population data. However, the study identified a challenge in the form of low public understanding regarding the use of the application, necessitating outreach efforts and the optimization of digital media to increase public participation in the use of the IKD [22].

This study aims to analyze and describe the digital transformation in the issuance of Family Cards (KK) through the Digital Population Identity (IKD) application at the Sidoarjo Regency Population and Civil Registration Office, using Vial’s (2019) theory of digital transformation. The success of digital transformation is influenced by four main aspects, namely (1) technological and infrastructure readiness, which refers to the availability of systems and facilities supporting digital services; (2) human resource competence, which refers to the ability of officials to manage and deliver digital-based services; (3) policy support and organizational culture, namely the organization’s commitment to supporting the adaptation of digital services; and (4) community participation, namely the public’s acceptance and readiness to use digital services. The novelty of this study lies in its specific focus on the digitization of family card (KK) splitting services through the IKD, examining the interrelationship between technology, civil servant capacity, and public digital literacy regarding the effectiveness of digital-based population administration services.

## RESEARCH METHOD

This research method employs a qualitative descriptive approach to systematically describe phenomena as they occur in the field without introducing external variables, with the aim of gaining a comprehensive understanding through narrative descriptions. The focus of the research is the implementation of the Family Card (KK) issuance service through the Digital Population Identity (IKD) Application at the Sidoarjo Regency Population and Civil Registration Office, covering service effectiveness, implementation procedures, and the challenges encountered. The informant selection technique in this study used purposive sampling, namely the selection of informants based on specific considerations in accordance with research needs, such as knowledge, experience, and direct involvement in the implementation of IKD services. Informants in this study included officials from the Sidoarjo Regency Population and Civil Registration Office in the field of population administration information management, the Head of the Population and Civil Registration Division, and members of the public who use IKD services. The research data consisted of primary and secondary data. Primary data were

obtained through interviews, observations, and documentation from stakeholders involved in the KK separation service via the IKD, while secondary data were derived from regulations, official reports, scientific journals, and relevant literature to support the analysis. Data analysis in this study employs the Miles and Huberman (2014) model, which comprises four stages: (1) data collection from various sources related to the implementation of the Healthy Village Program, (2) data reduction to filter relevant information, (3) presentation of data both narratively and in tabular form for ease of understanding, and (4) drawing conclusions aligned with the research focus. To understand digital transformation in family registration services through the IKD, this study employs Vial's (2019) conceptual framework of digital transformation, which encompasses four key aspects: technological and infrastructure readiness, human resource competencies, policy support and organizational culture, and community participation.

## RESULTS AND DISCUSSION

### *Results*

#### **Technology and Infrastructure Readiness**

Based on an interview with Mr. M. S. Khafili, an official from the Population and Civil Registration Office of Sidoarjo Regency in the Population Administration Information Management Division, it was found that the Digital Population Identity (IKD) service is supported by technological infrastructure, including operator workstations and an internet network used in the population administration service process. The IKD service system has been operational with the support of the technological facilities available within the organization. However, in practice, there are still challenges related to the account activation process and the validity of population data linked to the central system.

*"In terms of infrastructure, the devices and network are already in place for the IKD service, so operators already have their own equipment and the system is up and running. Challenges usually arise during the activation process by the public, because after scanning the barcode, they assume the process is complete when in fact they still need to activate it via email. Additionally, issues sometimes arise from the central system, such as an inactive NIK or duplicate data, preventing the service from being processed immediately." (Interview, August 7, 2025)*

Regarding technical challenges in the family card (KK) issuance service, an interview with Arif Semeru, Head of the Population and Civil Registration Division, revealed that the technological infrastructure available at the Sidoarjo Population and Civil Registration Office has been utilized to support the implementation of digital services, including the IKD.

*"The service facilities for IKD at the Population and Civil Registration Office are actually already in place, including both service computers and the internet network used by staff. Digital services are already being provided using this system, but in some cases there are still network issues – especially when residents come from areas with unstable internet connections – which can cause the activation process or service requests to take a little longer." (Interview, August 6, 2025)*

To reinforce the findings of the interview, the availability of technological infrastructure can be seen in the number of facilities and equipment used to support digital population administration services at the Sidoarjo Population and Civil Registration Office. This data indicates that, in terms of quantity, the equipment needed to support digital services has been provided to facilitate the operations of population administration services.

**Table 2.** Data on the Technology Infrastructure for IKD Services at the Sidoarjo Population and Civil Registration Office

No	Type of Infrastructure	Quantity	Notes
1	Service computers	4 units	Used by service operators
2	Field officer laptop	2 units	For outreach services
3	Internet network (WiFi)	3 units	Covers all areas

Source: Compiled by the researcher, 2025

Based on indicators of technological and infrastructure readiness at the Sidoarjo Regency Population and Civil Registration Office, it is evident that equipment such as computers, laptops, and internet networks is available and supports IKD services; however, the quantity remains limited, thereby affecting service capacity and the implementation of outreach services, as well as network stability, which is not yet fully optimal. Thus, infrastructure readiness is considered sufficiently supportive but not yet optimal. This situation can be further observed in the documentation of IKD services in the following figure.



**Figure 3.** Field Officers Providing IKD Services

Source: Documentation from the Sidoarjo Population and Civil Registration Office, 2025

### Human Resources (HR) Competencies

Based on an interview with Mr. M. S. Khafili, an official from the Population and Civil Registration Office of Sidoarjo Regency in the Population Administration Information Management Division, it was learned that service staff have received

training on the use of the IKD application as part of efforts to improve their ability to operate digital service systems, he stated.

*“Every year, there is training on how to use the IKD application, and there are usually coordination meetings via Zoom from headquarters to explain updates to the system. During these coordination meetings, we also review how the application is used in service delivery, so staff are equipped to effectively provide digital-based services.” (Interview, August 7, 2025)*

In addition, according to an interview with Arif Semeru, Head of the Population and Civil Registration Division, all service staff have received training on the IKD service and are therefore able to assist the public in using the application.

*“All service staff have received training on the IKD app, covering everything from how to download the app to the barcode scanning process during activation. Thanks to this training, front-office staff can assist members of the public who come to use the service, especially when they are still having trouble using the app.” (Interview, August 6, 2025)*

To reinforce the findings of the interview, the human resources’ capacity to support the IKD service can be seen in the number of staff and the capacity-building activities that have been carried out at the Sidoarjo Population and Civil Registration Office.

**Table 3.** Data on Human Resource (HR) Competencies in IKD Services

No	Type of Staff / Activity	Number	Description
1	Front-office staff	5 people	Responsible for serving and assisting the public
2	IKD system operators	3 people	Manage the IKD system and activation
3	Field staff	2 people	Support outreach services
4	Annual training sessions	2 times	Training and technical coordination from headquarters

Source: Compiled by the researcher, 2025

The table above shows that, in terms of quality, the human resources have sufficient capabilities to support IKD services through regular training, coordination with the central office, and the ability to assist the community. However, in terms of quantity, the limited number of staff – namely 5 front-office staff, 3 system operators, and 2 field staff – indicates a potential imbalance with the increasing service workload, which impacts service effectiveness; Thus, the readiness of the human resources is considered competent but not yet optimal. This situation can be further observed through the documentation of meetings and staff training sessions in the following image.



**Figure 4.** IKD Orientation Meeting at the Sidoarjo Population and Civil Registration Office

Source: Documentation from the Sidoarjo Population and Civil Registration Office, 2025

The figure shows an initial orientation meeting on the Digital Population Identity (IKD) conducted by staff of the Sidoarjo Population and Civil Registration Office at the office premises as part of preparations for digital services. This activity was conducted in the early stages before the IKD service was launched, with the aim of providing staff with an understanding of the concept, benefits, and mechanisms for using the IKD application. The orientation was conducted through presentations and interactive discussions so that staff could understand their roles in supporting the service and be able to properly apply the IKD system when interacting with the public.

### **Policy Support and Organizational Culture**

Based on interviews with officials from the Sidoarjo Regency Population and Civil Registration Office, the process of splitting family registration cards (KK) through the IKD system is governed by clear Standard Operating Procedures (SOPs) that serve as guidelines for every stage of the service. These SOPs cover the service workflow, the division of duties among staff, and mechanisms for addressing challenges to ensure that the service proceeds in accordance with regulations. Mr. M. S. Khafili stated:

*“As for the service for splitting family registration cards, there are actually existing regulations and procedures that staff follow, ranging from the service process structure to the flowchart. So, staff already have guidelines they use in providing the service to ensure the process adheres to applicable procedures.” (Interview, August 7, 2025)*

The SOP was then implemented in an IKD-based service workflow that begins with the applicant logging into their account, selecting a service menu, entering data, and submitting the application, and continues through the verification, validation, and document issuance processes carried out by staff. In addition, the SOP also includes coordination mechanisms in the event of any issues, as explained by Mr. Arif Semeru:

*“If, during the course of our work, there is an issue that requires a decision or if an officer has difficulty making a decision, we usually contact the relevant department at the main office or advise the applicant to come directly to the Disdukcapil office for further resolution.” (Interview, August 6, 2025)*

In terms of service time, the implementation of digital-based procedures through the IKD offers greater efficiency compared to manual services. This was emphasized by Mr. M. S. Khafili:

*“If done manually, it usually takes over a week because you have to go back and forth to the office, whereas with IKD, you can do it from home and it’s usually finished in about 3 to 5 days.”* (Interview, August 7, 2025)

To clarify this comparison, the following are estimated service times:

**Table 4.** Comparison of Processing Times for Family Card Splits

No	Service Type	Estimated Time	Notes
1	In-person	≥ 7 days	Repetitive process, waiting in line, and multiple trips to the office
2	IKD (digital)	3–5 days	Submit from home, processed through the system

Source: Compiled by the researcher, 2025

Based on the table, it is evident that services provided through the IKD are more efficient because they streamline processes that were previously conducted in person by shifting them to a digital system. However, service times may still be affected by technical issues such as system outages or data validation from the central office.

### Community Participation

Based on interviews with members of the public who use the IKD services at the Sidoarjo Regency Population and Civil Registration Office, it was found that the implementation of digital services has simplified the process of handling population administration, as most steps can be completed online via the app. He stated:

*“In my opinion, the IKD app is very helpful because it eliminates the need to visit the Civil Registry Office multiple times. Whereas before I had to go there and wait in line to process documents, now I can do it from home using my phone, making the process much more convenient and less time-consuming.”*

In addition, the public’s positive response is also evident in the greater flexibility of access to services, which are no longer restricted by time or location. This is reinforced by the views of other members of the public who have also experienced similar benefits from using the IKD services.

*“Using IKD is more convenient because it’s accessible anytime – you don’t have to wait for business hours. So if there’s an urgent matter, you can submit it right away without having to ask for time off or come into the office.”*



**Figure 5.** Residents Resolving IKD Issues

Source: Documentation from the Sidoarjo Population and Civil Registration Office, 2025

However, in practice, some members of the public still encounter difficulties, particularly during the initial stages of using the app—such as the account activation process, understanding the service workflow, and using the app’s features. This was also mentioned by other users of the service:

*“At first, I was a little confused during the activation process because it had to be done via email, so I needed some help from a staff member. But after that, it was much easier to use.”*

Meanwhile, according to interviews with service staff, the Sidoarjo Regency Population and Civil Registration Office is actively conducting outreach efforts to increase public awareness and usage of the IKD service.

*“We are educating the public about how to use the IKD app through flyers, social media, and in-person outreach in villages and subdistricts. During these activities, we explain to the public how to use the app so they can try handling civil registration services digitally.”*

These outreach efforts demonstrate that the organization not only provides digital services but also works to improve the public’s readiness to use them.

### **Discussion**

The digital transformation of Family Card (KK) issuance services through the Digital Population Identity (IKD) app is a technology-based innovation in population administration services that makes it easier for the public to manage documents online. Through IKD, processes that previously required in-person visits can now be accessed via mobile devices, making them faster, more convenient, and more efficient. This service aims to improve the quality of public services, reduce waiting lines, and promote a more modern, integrated, and responsive administrative system that meets the needs of the public.

### **Technology and Infrastructure Readiness**

From the perspective of digital transformation as outlined by Didier Vial (2019), digital technology serves as a means to drive changes in an organization’s operational

processes and create new value for service users. The implementation of application-based service systems, such as IKD, is part of public organizations' efforts to leverage digital technology to improve the efficiency and accessibility of civil registration services.

Based on findings regarding the technology and infrastructure readiness indicators at the Sidoarjo Regency Population and Civil Registration Office, the availability of service computers, field officers' laptops, and internet connectivity indicates that technology has been implemented in service delivery. However, the limited number of computers means that service capacity cannot yet optimally accommodate the increase in requests, potentially leading to queues and slowing down service processes. The limited number of field officers' laptops also impacts the suboptimal implementation of outreach services aimed at expanding public access. Additionally, although the internet network covers the service area, its stability still affects the smooth operation of system access, particularly during outages or spikes in user traffic.

These findings are consistent with the research by Aisyah Aulia Zahro and Elli Setiyo Wahyuni (2024), which indicates that digital transformation through the IKD application still faces challenges in terms of technology and the implementation of digital services. Furthermore, this situation aligns with Didier Vial's (2019) theory, which emphasizes that digital transformation depends not only on the adoption of technology but also on the readiness of infrastructure to support service effectiveness. Thus, while digital transformation in family card (KK) services via the IKD system in Sidoarjo Regency is underway, it remains suboptimal due to ongoing limitations in devices and internet network stability during service delivery [22].

### **Human Resource Competencies**

According to Didier Vial (2019), digital transformation involves changes in organizational processes that include the use of digital technology and the adaptation of human resource capabilities. The competencies of public servants are a key factor in ensuring that the digital systems implemented can be utilized optimally in public service delivery.

In the context of IKD services at the Sidoarjo Regency Population and Civil Registration Office, findings indicate that, in terms of quality, HR has developed sufficient capabilities through regular training, coordination with the central government, and the ability to assist the public in using the application. However, in terms of quantity, the limited number of staff—namely 5 front-office staff, 3 system operators, and 2 field staff—indicates an imbalance with the increasing service workload, thereby impacting the effectiveness and quality of services, including the suboptimal implementation of outreach services.

These findings are consistent with the research by S. A. N. S. Dewi et al. (2023), which shows that digital transformation in public services is influenced by the readiness of human resources and the availability of experts to support digital-based services. Furthermore, this situation aligns with Didier Vial's (2019) theory, which emphasizes that digital transformation depends not only on the use of technology but also on the ability of human resources to operate service systems optimally. Thus, digital transformation in

family card (KK) services through the Integrated Data System (IKD) in Sidoarjo Regency has been progressing quite well in terms of civil servant competence; however, it has not yet been optimal because the limited number of staff still affects the effectiveness of services and the implementation of outreach services [21].

### **Policy Support and Organizational Culture**

From the perspective of digital transformation as outlined by Didier Vial (2019), service transformation is characterized not only by the use of technology but also by the simplification of procedures and increased efficiency. Based on findings regarding service procedure indicators at the Sidoarjo Regency Population and Civil Registration Office, the existence of clear and structured SOPs serves as the foundation for implementing family card (KK) splitting services through the IKD system. These SOPs not only outline the main workflow but also establish coordination mechanisms for addressing challenges, ensuring services proceed in accordance with regulations.

The implementation of digital-based procedures through the IKD demonstrates changes in the service process, particularly in terms of time and ease of access. Whereas manual services previously required more time and necessitated the public to visit in person repeatedly, the process can now be completed from home in a shorter timeframe via the IKD. This indicates that the digitization of procedures is capable of improving service efficiency and reducing administrative burdens.

However, the effectiveness of services is still influenced by technical factors such as system disruptions and central data validation processes, indicating that digital transformation also depends on the reliability of supporting systems.

This finding aligns with the research by L. Mursyidah, I. U. Choiriyah, and I. F. Agustina (2024), which shows that digital transformation in civil registration services can enhance service effectiveness and efficiency through the implementation of digital-based services. Furthermore, this situation aligns with Didier Vial's (2019) theory, which emphasizes that digital transformation relies not only on technology but also on changes to service processes to make them faster, easier, and more efficient. Thus, digital transformation in family card (KK) issuance services through the Integrated Population Data System (IKD) in Sidoarjo Regency has been able to simplify service procedures and improve service time efficiency; however, it has not yet been optimal as it is still affected by system disruptions and data validation processes from the central office [20].

### **Community Participation**

From the perspective of digital transformation as outlined by Didier Vial (2019), the success of transformation is determined not only by the implementation of technology, but also by users' acceptance of and ability to utilize that technology. Findings regarding community response indicators at the Sidoarjo Regency Population and Civil Registration Office indicate that the IKD service has provided convenience, flexibility, and efficiency in managing population administration, particularly because it can be accessed anytime and from anywhere without the need to visit the office in person. This reflects a shift in service delivery patterns toward greater user-centric accessibility for the public.

However, there are still challenges in the early stages of use, such as the activation process and understanding the application's features, indicating that the public's level of digital literacy still impacts the optimization of the service. This situation underscores that digital transformation is not merely about providing systems but also about users' readiness to operate them.

These findings are consistent with the research by A. A. Zahro and E. S. Wahyuni (2024), which shows that digital transformation through the IKD application can provide convenience and efficiency in service delivery, but still faces challenges regarding public understanding and use of the application. Furthermore, this situation aligns with Didier Vial's (2019) theory, which emphasizes that digital transformation depends not only on the availability of technology but also on users' readiness and ability to utilize digital services optimally. Thus, digital transformation in family card (KK) renewal services via the IKD in Sidoarjo Regency has provided easier access to services for the public, but it has not yet been optimal due to remaining challenges in the activation process and the public's low digital literacy in using the IKD application [22].

## CONCLUSION

**Fundamental Finding :** The digital transformation of the Family Card issuance service through the IKD app at the Sidoarjo Regency Population and Civil Registration Office demonstrates that public services have become more efficient, accessible, and organized compared to manual systems; however, they are not yet fully optimized due to ongoing challenges related to infrastructure, human resource capacity, system stability, and public digital literacy. **Implication :** These findings indicate the need for balanced strengthening of technology, human resources, and community readiness through infrastructure improvements, ongoing training, and more intensive outreach to ensure more effective and equitable digital services. **Limitation :** This research is limited to one agency and uses a qualitative interview-based approach so that the results cannot be generalized widely and still have the potential to contain subjectivity. **Future Research :** Further research is recommended to expand the scope of the region, use a quantitative approach, and examine in more depth user satisfaction, community behavior, and digital literacy levels in supporting the success of digital transformation of public services.

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