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Toward Digital Population Administration: A Qualitative Analysis of the Implementation of Digital Identity Policies in the Transformation of Population Services

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Abstract

The digital transformation of civil registration administration has become a key part of public service reform, particularly through the implementation of Digital Population Identity (*IKD*) to enhance service effectiveness, transparency, and accessibility. However, the implementation of *IKD* presents challenges related to organizational capacity, citizens' digital literacy, data security, and service acceptance at the user level. This study aims to analyze the implementation of *IKD* policy in civil registration services, identify its enabling and constraining factors, and examine its contribution to the dynamics of digital governance in civil administration. A qualitative approach with a case study strategy was used, focusing on civil registration services in a local *Dukcapil* office. Data were collected through semi-structured interviews, non-participant observation, and document analysis, and analyzed using reflexive thematic analysis to identify emerging patterns from the experiences of service officials and users. The findings reveal that *IKD* is seen as both a symbol of service modernization and a tool to accelerate administrative processes. However, its implementation heavily relies on the capacity of frontline officials to mediate technology, explain procedures, and solve operational issues. The practical benefits of *IKD* are mostly experienced by users with sufficient digital competence, while other groups face barriers such as access, device limitations, and hesitation to use digital services. Trust in *IKD* remains fragile due to concerns about data security, making service acceptance dependent on user interactions with officials and trust in public institutions. The success of digital identity initiatives depends not only on technological availability but also on organizational capacity, service inclusiveness, clear data governance, and public trust.

INTRODUCTION

Digital transformation in public administration can no longer be understood solely as replacing manual procedures with online-based applications (Alshawaaf & Alzougool, 2024; Fadhina et al., 2022). In practice, the transformation touches on a much more fundamental layer: the way the state recognizes citizens, verifies identity, manages data, distributes service rights, and rebuilds public trust in an increasingly diverse ecosystem of services digitized (Sanduan et al., 2026) (Idrus, 2025). This is where the Digital Population Identity (*IKD*) policy becomes strategically relevant. *IKD* is not just a technological instrument to store

identity on smartphones, but part of a shift towards digital governance that reorganizes the relationship between the government, data infrastructure, and citizens as service users (Zulkifli et al., 2023). Recent literature shows that the digitization of public services has the potential to speed up processes, reduce administrative transaction costs, expand service reach, and strengthen accountability. However, such transformation can also deepen exclusion when organizational capacity, system interoperability, and citizen readiness do not develop in a balanced manner (Latupeirissa et al., 2024) (Janssen et al., 2025).

In the context of population administration, the issue of digital identity has gained more serious weight because it concerns the foundation of almost all state services (Kodaneva, 2022) (Robles-Carrillo, 2024). Access to social assistance, health services, education, banking, taxation, and various other civil services depends on the government's ability to provide an accurate, secure, easily verifiable, and recognized identity across systems. As such, the international discourse on digital identity is now moving from technical questions about authentication to broader governance questions: who controls the identity ecosystem, how data is exchanged, how accountability is structured, and how the public interest is safeguarded amid the involvement of many actors. (Degen & Teubner, 2024), for example, assert that the management of the digital identity data ecosystem requires a process of governance orchestration that goes beyond technical design issues, especially when digital identities are positioned as digital public infrastructure (Selvakumar et al., 2025) (Zhang, 2025). In other words, the success of digital identity is not only determined by the applications that work, but by the ability of the state to regulate the interdependence between institutions, data, regulations, and users.

When placed in the framework of public services, the argument about the benefits of digitalization is indeed quite consistent. A comprehensive study (Latupeirissa et al., 2024) shows that digital initiatives in public services tend to increase efficiency, citizen engagement, and government accountability (Wirata et al., 2025) (Pasenko, 2022). However, they also warn that digital transformation can create new forms of inequality when citizens who do not have access to devices, connectivity, or digital skills are excluded from new service mechanisms (Latupeirissa et al., 2024). These findings are reinforced by (Djatmiko et al., 2025), which shows that digital inclusion is an important prerequisite for the sustainability of e-government; Barriers in the form of low digital literacy, infrastructure gaps, and institutional fragmentation have proven to hinder the adoption of digital services, especially among vulnerable groups and marginalized communities. In the context of population administration, this message is crucial: a digital identity system designed to facilitate services can turn into a new source of inequality if user access and capacity are treated as assumptions, rather than policy variables that must be taken seriously.

In addition to the issue of inclusion, the dimension of public trust occupies a central position in the implementation of digital identity. The use of digital identities requires citizens to submit, update, and allow the state to process highly sensitive personal data. Therefore, the acceptance of policies such as *IKD* is highly dependent on citizens' perceptions of security, privacy, risk, and integrity of the organizing institution (Spiliotopoulos et al., 2023). (Gupta et al., 2025), through meta-analytic structural equation modeling of 68 empirical studies, shows that citizens' concerns about e-government mainly revolve around trust, risk, privacy, and security. They also assert that the perception of privacy and security is directly related to

trust in government digital services (Kanaan et al., 2023) (Fahmi, 2025). These findings are very relevant for digital identity policy, because without a sense of security in the use of data and without confidence that public institutions are able to protect personal information, even the most efficient service innovations will find it difficult to gain social legitimacy. In the context of Indonesia and other developing countries, this problem is often exacerbated by the collective memory of data leaks, digital literacy inequality, and inconsistent public service experiences.

At the same time, the development of digital government research shows that cutting-edge studies increasingly demand contextual, interdisciplinary, and complex reading of implementation. (Janssen et al., 2025) emphasizes that digital government research advances not only through technological innovation, but through a contextual understanding of the relationship between technology, institutions, public values, and administrative practices (Yusifov & Gurbanov, 2024) (Scholl, 2020). In line with that, (Lips & Eppel, 2022) show—through the lens of complexity theory—that the delivery of digital public services thrives under conditions of uncertainty, rapid adaptation, and cross-actor interactions that are not always linear. This perspective is important for the study of *IKD* because the implementation of digital identity policies does not take place in a vacuum. It depends on coordination between service units, information system compatibility, interpretation of implementers, citizen response, and the ability of organizations to learn from disruptions, resistance, and new needs that arise in the field. Thus, reading the *IKD* only from indicators of program achievement or adoption rates is not enough to understand how the policy really works.

This is where the academic problem that is still open lies. Although the themes of digital identity and digitization of public services are rapidly evolving, many studies are still oriented towards adoption models, effectiveness evaluations, or user satisfaction measurements. Studies that actually trace the process of policy implementation—how policies are interpreted, negotiated, implemented, and adjusted at the level of service organizations—are still relatively limited. (Degen & Teubner, 2024) explicitly mentions that the understanding of orchestration in public–private data ecosystems is still underdeveloped, while (Waara, 2025) shows that even in government models of digital maturity, citizens are often not adequately placed: 17% of models do not mention citizens at all, 33% mention only minimally, and only 50% integrate citizenship considerations extensively (Ramadan et al., 2024). These findings suggest that digital transformation is often still read from an institutional or technocratic perspective, not enough from the perspective of citizens' experiences and the dynamics of interactions between policies, organizations, technology, and society. This gap is what makes a qualitative study of the implementation of *IKD* important, especially to explain how the bureaucratic efficiency agenda negotiates with issues of accessibility, trust, organizational readiness, and service quality at the practical level.

More specifically, the state-of-the-art research shows four key trends. First, the digitization of public services is understood as an instrument for creating efficiency and public value. Second, digital inclusion is recognized as a normative and operational requirement for the success of digital services. Third, trust, privacy, and security are seen as determinants of adoption and sustainability of use. Fourth, digital government research is moving towards more complex and contextual reading. However, the integration of the four themes in an analytical framework that focuses on the implementation of digital identity in

population administration is still rare. Many studies address one dimension partially—for example, data security without quality of service, or technology adoption without organizational dynamics. In fact, the *IKD* policy is actually at the intersection of all dimensions. He touched on data governance, bureaucratic procedures, apparatus capacity, user experience, and the legitimacy of the digital state. The absence of such an integrative approach risks simplifying the problem: it is as if the implementation obstacles are sufficiently answered by the socialization of applications, when what is at stake is the architecture of trust and fairness in digital public services.

RESEARCH METHOD

This study used a qualitative design with a case study strategy to understand in depth the implementation of the Digital Population Identity (*IKD*) policy in the context of population administration services. The selection of the case study is based on the character of the problem being studied, namely a policy phenomenon that takes place in a real context, involving the interaction between regulations, organizations, technology, and citizens as service users. In the tradition of social research, case studies are seen as appropriate when researchers want to produce a detailed, contextual, and holistic understanding of a phenomenon that is limited by a specific space and time, especially when the boundaries between the phenomenon and its context are not fully defined. Since the implementation of *IKD* concerns not only the technical aspects of the application, but also service practices, coordination between implementers, risk perception, and user experience, this approach is seen as the most adequate to capture such complexity.

The research setting was placed at the Population and Civil Registration Office (*Dukcapil*) in one of the local governments in Indonesia that has implemented *IKD* in population administration services. The case unit is focused on the policy implementation process at the service organization level, especially on how *IKD* is carried out in the daily flow of services, how the apparatus interprets policies, and how the community responds to these digital services. The characteristics of the participants were determined purposively by considering their direct relationship to the implementation of *IKD*. Participants include: officials or program managers who are responsible for service policy and coordination, technical officers or operators involved in the activation and verification of *IKD*, front office officers who interact directly with residents, and the service user community who have or are accessing *IKD*. Purposive selection is considered appropriate because in qualitative research, participant selection is generally based on the research objectives, research questions, and relevance of participants' experiences to the phenomenon being studied. Participant recruitment is carried out until information sufficiency is achieved, which is when the data obtained has shown a pattern that repetitive and rich enough to answer the focus of the research.

Data collection was carried out through semi-structured interviews, non-participant observations, and document analysis in order to obtain an overview of policy implementation that is not only sourced from the actors' narratives, but also from service practices and policy administrative footprints. Semi-structured interviews are used because they allow researchers to maintain a focus on key issues such as policy understanding, implementation procedures, technical barriers, public trust, data security, and service accessibility while also providing

space for participants to explain their experiences and interpretations more openly. Non-participant observations were carried out on the space and flow of services to see how *IKD* is carried out in practice, including the pattern of interaction between officers and service users. Document analysis includes regulations, technical guidelines, internal reports, socialization materials, and other administrative documents relevant to the implementation of *IKD*. The combination of these three techniques supports data depth while strengthening source triangulation. Operationally, the interviews are recorded with the consent of the participants, supplemented with field notes, and then transcribed verbatim as analysis material. This approach is in line with the principles of qualitative research that places words, experiences, and interactions as the primary sources of data.

RESULTS AND DISCUSSION

Based on the process of coding interview data, observations, and service implementation documents, the findings of this study are organized into five main themes, namely: (1) *IKD* is understood as a symbol of service modernization as well as an instrument for accelerating administration, (2) the implementation of *IKD* still relies on the capacity of the apparatus and adaptive work of the organization, (3) the community feels practical benefits, but access and digital literacy are still a real limit, (4) trust in digital services is built fragile amid concerns over data security, and (5) digitalization has not completely erased old service patterns, but rather created a hybrid form of population services. These five themes show that the implementation of *IKD* runs as a dynamic, non-uniform, and highly influenced process by the interaction between policies, implementers, technological infrastructure, and citizens' experiences as service users.

Table 1. Summary of Themes, Categories, and Indications of Findings

Main Theme	Result categories	Indications of findings
IKD as a symbol of modernization and acceleration of services	Perception institution al benefits; Changing the image of the service	*IKD* is seen as a sign of service progress, accelerating verification, and reducing reliance on physical documents
Nested implementation on the capacity of the apparatus	Adaptation of officers; new workload; Internal coordination	The success of the implementation is greatly influenced by the officer's initiative, the ability to explain the application, and the problem solving in the field
Benefits Practical Faced with on	Ease of access; digital literacy; Limitations	Users feel convenience, but no All São should
Access barriers	**Device/Network**	**follow the digital process independently**
Trust and data security	Concerns privacy; Legitimacy institutions; Clarity of Information	User trust grows if the officer communicative, But concerns over personal data remain strong

Service digital is hybrid	Coexistence of digital and manual systems	*IKD* has not completely replaced the old mechanism; The ministry is still running through a mixed pattern

IKD is Understood as a Symbol of Service Modernization as well as an Instrument for Accelerating Administration

The first theme shows that the participants, especially the *Dukcapil* apparatus, interpret *IKD* not only as a service application, but as a representation of the change in the face of population administration towards a service model that is considered more modern, fast, and responsive. In the narrative of the implementers, *IKD* is often associated with a shift from administrative practices that rely on physical files to a more concise and digital data-based service model. For them, the presence of *IKD* gives the impression that population services are starting to move according to the demands of the times, especially in the context of people who are increasingly familiar with the use of smartphones.

A program management official emphasized that the *IKD* is seen as an important step to change the public's perception of population administration services which has often been associated with long queues, files, and procedures. He stated:

"So far, when the community talks about population affairs, the shadows come, queue, bring various copies. With *IKD*, we want to shift that. That identity can be carried on a mobile phone, can be accessed quickly, and services are no longer too paper-based." (P1)

Similar statements also emerged from front office officers who face the public on a daily basis. They see that the existence of *IKD* gives a symbolic change to the image of the service. According to one of the officers:

"People are usually more interested if there is something that looks new. When we explained that *KTP* can now be in digital form, their initial response was that government services had begun to advance." (P4)

Apart from being a symbol of modernization, *IKD* is also perceived as an instrument for accelerating administration. The apparatus said that in certain situations, digital identities simplify the process of checking data and reduce dependence on physical documents that are prone to being left behind, damaged, or not brought by residents when taking care of services. One of the operators explained:

"If the data has appeared in the application, we can confirm the identity faster. So you don't always have to wait for residents to show physical documents. In some ministries it helps a lot." (P3)

On the user side, the perception of the benefits of acceleration is also quite prominent, especially

for residents who have successfully activated *IKD* and understand how to use it. They feel that the identity stored in the mobile phone gives a sense of practicality and reduces the anxiety of losing physical documents. One user said:

"I feel safer because the identity data is on my cellphone. Thus, if you need to, you don't have to look for an ID card first. Just open the application." (P8)

However, that modern and fast perception does not appear evenly. For some participants,

especially residents who are not familiar with digital services, *IKD* is still understood as an "interesting" innovation but is not yet fully considered a real need. A resident said:

> "It's good, it looks sophisticated. But for me, if the physical ID card can still be used, yes, I don't feel like I have to use a digital one." (P10)

These findings show that at the outcome level, *IKD* has managed to form an initial image as a modern and efficient administrative innovation, but the power of meaning is still more dominant at the symbolic level and a specific user experience, not yet fully a stable collective perception across user groups.

The Implementation of *IKD* Still Relies on the Capacity of Apparatus and Organizational Adaptive Work

The second theme shows that the implementation of *IKD* at the service level is greatly influenced by the capacity of the apparatus in translating policies into daily work practices. In almost all interviews with implementers, there was an impression that the running of *IKD* services depends a lot on the ability of officers to explain procedures, guide the activation process, handle technical obstacles, and calm public doubts. In other words, the technology has not yet run autonomously; It remains very supported by the relational work of the apparatus.

One service manager described that the main challenge is not only the system, but how the officers have to continue to adapt the way they work. He stated:

> "The application is just a tool. In the field, the one who determines the road or not is the officer. If the officer can't wait to explain, the public is immediately confused or even not activated." (P2)

The front office officer also said that the implementation of *IKD* adds a new form of work that was previously not too dominant in population services, namely the digital education function. They not only check files or serve administrative requests, but also serve as a kind of technological companion for citizens. One of the officers said:

> "Now we are not only serving documents, but also teaching. Sometimes we have to show you step by step, starting from downloading the application, logging in, verifying, to how to open it again later." (P5)

Field observations show that the process of activating and using *IKD* often takes place through quite intense face-to-face interactions between officers and residents. In some situations, residents' hand over their mobile phones to officers to help navigate the activation process. This shows that the implementation of *IKD* in the service space is not completely self-service, but is still highly dependent on direct assistance.

The apparatus also described the need for internal coordination that is higher than conventional administrative services. When there is a disruption to the system, the front office officer must coordinate with the technical operator or person in charge of the system to ensure that the process remains operational. One operator explains:

> "If there are problems, for example data out of sync or slow applications, the front officer usually contacts us directly. Thus, the implementation cannot go alone." (P3)

In several interviews, the implementers mentioned that this adaptive work often takes place without technical guidance that is fully adequate for all field situations. As a result, problem-solving is largely based on experience, improvisation, and gradual learning.

An officer stated:

> "Many cases in the field are not always the same as those in the guidelines. Thus, we learned as we went. Sometimes from today's experience, tomorrow we will know how to explain it more easily." (P6)

These findings show that the implementation of *IKD* in service practice cannot be separated from the role of apparatus as policy interpreters, technology mediators, as well as guardians of service sustainability. Digital systems are present, but their effectiveness is largely determined by the intensity of organizational adaptation and the quality of officer interaction in the field.

People Feel Practical Benefits, but Digital Access and Literacy Are Still a Real Limit

The third theme shows the existence of two layers of experience that run concurrently. On the one hand, people who successfully use *IKD* recognize the practical benefits of digital services. On the other hand, access to these benefits is not felt equally because it is limited by digital literacy, device type, network quality, and confidence in using technology.

For users who are quite familiar with digital applications, *IKD* is seen as convenient because identity becomes more accessible at any time. One user said:

> "For me, who often uses applications, *IKD* is practical. There is no need to worry about the physical ID card being left behind. When you need data, just open it from your cellphone." (P9)

Other users attribute the benefits of *IKD* to time efficiency in service management. He says:

> "I feel like the process is shorter. After being explained by the officer and successfully activated, I felt that identity matters were simpler than always having to carry documents." (P11)

However, such experiences are not fully experienced by all citizens. For some participants, especially those who are older or not used to using applications, the *IKD* activation process actually causes anxiety and dependence on the help of officers or family members. One of the residents revealed:

> "I actually wanted to participate, but as soon as I saw the many steps on my cellphone, I was afraid of making mistakes. Finally, I asked for help from my son, or if I was in the office, I asked for help from the officer." (P12)

Another participant more emphatically stated that the main obstacle is not intentionality, but rather basic skills in using smartphones:

> "It's not that I don't want to, but indeed I don't understand. Sometimes for ordinary applications, I am still confused, especially if it has entered various verifications." (P13)

In addition to digital literacy, device limitations also appear as a real obstacle. Some residents said that not all mobile phones they have support the smooth use of the application. In other cases, the device's full memory or an old operating system makes the installation and usage process inconvenient. One participant explained:

> "My phone is actually usable, but it's been a while. Thus, if you open a rather heavy application, sometimes it is slow. That makes me lazy further." (P14)

The internet network factor is also mentioned several times as a determinant of user experience. Both officials and residents said that unstable connections can slow down activation or interfere with access when applications are needed. One of the officers stated:

"If the network is not good, people immediately feel that the application is difficult. Not only in the app, but connections also have an effect." (P4)

The observational findings show that these constraints make some residents still view physical documents as a more "definite" and easier to understand form of identity. In a number of interactions, residents who have heard about the *IKD* still ask for certainty whether the physical ID card is still valid, and the question comes up repeatedly. A resident said:

"I am calmer if there is still a physical one. The digital one is good, but I'm not sure if the cellphone is damaged or the battery runs out." (P15)

These findings show that the practical benefits of *IKD* are indeed recognized, but the acceptance is multi-layered. Users with adequate digital skills and devices tend to feel the ease, while other groups still face fairly clear access limits in everyday use.

Digitalization Has Not Erased Old Service Patterns, but Created a Hybrid Form in Population Services

The fifth theme shows that the implementation of *IKD* does not take place in the form of total replacement between the old system and the new system. What emerges is precisely a hybrid service pattern, in which digital mechanisms and conventional administrative procedures coexist. In service practice, physical documents are still often used as a reference, backup, or form of legitimacy that is considered safer by residents and officials in certain situations.

A front office attendant said:

"On the pitch we can't immediately leave the old one. There are still many residents who are more comfortable with physical documents, and in some matters, it is still needed." (P6)

Similar statements also came from users who had activated *IKD*. Although acknowledging the benefits of the application, they still keep a physical ID card and consider it as the main backup in case of problems. One participant said:

"I already have an *IKD*, but I still bring a physical ID card if I take care of something important. Just be careful." (P9)

In the observation of the service room, the officers often adjust the approach based on the

user conditions. For residents who are used to technology, officers are faster to encourage the use of *IKD*. For residents who seem hesitant or experiencing difficulties, officers are more flexible and continue to process services with a more conventional administrative approach. This flexibility shows that services do not run in a single digital logic, but rather in a pragmatic combination.

The apparatus also acknowledged that the transition to full digital services takes time because the changes concern not only the system, but also long-ingrained administrative habits. A service manager called:

"Changes like this cannot be immediately fully digital. Because what has changed is not only the tools, but also the way officers work and the habits of the community. So now the form is still mixed." (P2)

On the social side, this hybrid form is actually seen as providing a sense of security. Some residents are not bothered by the existence of two service models that run at the same

time; instead, they consider it to help the adjustment process. One resident explained:

"I think it's better to do this first, there is digital, but the usual ones are still there. Thus, we can learn slowly, not be forced to change right away." (P12)

These findings show that the results of the implementation of *IKD* at the current stage have not been in the form of digitalization that completely replaces old practices. More visible is the formation of a mixed-service ecosystem that combines digital innovation with conventional administrative patterns. In the context of daily services, this hybrid form is a way for organizations to maintain service continuity while managing differences in readiness between residents.

Table 2. Examples of Representative Quotes by Theme

Theme	Representative quotes
Modernization and service acceleration	"With *IKD*, we want to shift that. That identity can be carried on a mobile phone." (P1)
Apparatus capacity	"The application is just a tool. In the field, which determines the road or No, it's an officer." (P2)
Benefits and Access barriers	"It's good, it looks sophisticated. But for me... don't feel like they have to be disposable digital." (P10)
Trust and data security	"What I think is personal data ... Sometimes there is also doubt." (P8)
Hybrid services	"I think it's better to do this first, there is digital, but the Ordinary people still exist." (P12)

Thus, the results of the study show that the implementation of *IKD* in the population administration service environment takes place as a multi-layered transition process. On the one hand, this policy has resulted in an image of modernization, opened up the possibility of accelerating services, and provided real benefits for some users. On the other hand, the operation of the system is still strongly supported by the capacity of the apparatus, limited by the variation of people's digital literacy, overshadowed by concerns about data security, and run through a hybrid service pattern that brings together digital logic with administrative practices
long. These findings are consistently composed of apparatus voices, user experiences, observations of service interactions, and administrative traces of implementation observed during the research process.

The findings of this study show that the implementation of Digital Population Identity (*IKD*) does not move as a fully linear digitalization process, but as a multi-layered institutional transition, where the service modernization agenda meets with limited organizational capacity, variations in citizen readiness, and the need to maintain the legitimacy of public services. The most important meaning of the findings is that *IKD*, in the context of population administration, cannot be understood only as a technological innovation, but as a form of reorganization of the relationship between data, bureaucracy, and citizens. This reading is in line with the reflection (Janssen et al., 2025) that mature digital government research must see digital transformation as a phenomenon that is at once technological, institutional, and social; while (Yang et al., 2024)(Kraus et al., 2021) (Degen & Teubner, 2024) show that digital identity is fundamentally a matter of data ecosystem orchestration and governance, not just the provision of identity applications.

The first theme, namely *IKD* as a symbol of modernization as well as an instrument for accelerating administration, shows that this policy has produced a strong symbolic value in the eyes of implementers and some users. In field findings, *IKD* is perceived as a sign that population services are starting to leave the image of file-based bureaucracy towards faster and more concise services. The contextual significance of these findings is that the digitization of services operates not only at the procedural level, but also at the level of public perception of the state. When citizens see identity available in digital format, they are witnessing not only a change in tools, but also a change in the representation of the state as a service provider. These results support a study (Latupeirissa et al., 2024) which shows that the digitization of public services often increases the perception of service efficiency, accountability, and responsiveness. However, the study's findings also add a more critical nuance: "modern" perceptions are not yet automatically synonymous with full acceptance. In many cases, modernization comes first as an image and a promise, while the meaning of its real use is still negotiated in the experience of everyday use.

At this point, the results of the study also show a slight gap with the optimistic narrative in much of the digital transformation literature. While a number of studies emphasize that digitalization accelerates services through the reduction of manual procedures, then the findings of this study show that the acceleration is selective and contextual. For users who have adequate digital skills, the benefits of efficiency are immediately felt. However, for residents who are not familiar with the application or still rely on the help of officers, the speed of service still depends on face-to-face interaction. Thus, the acceleration of administration in the implementation of *IKD* has not entirely come from system automation, but from a combination of the digital capabilities of users and the capacity of officers to mediate the process. These results reinforce the argument that public digital transformation cannot be judged by the existence of a platform alone, but rather by how it works in the social context of different users.

The second theme, namely the implementation of *IKD* which relies on the capacity of the apparatus and the adaptive work of the organization, is one of the most important findings of this study. In context

Empirical research, apparatus is not only administrative implementers, but also policy interpreters, technology mediators, problem solvers, and citizen anxiety managers. These findings are particularly relevant to the proposed complexity perspective (Lips & Eppel, 2022), which views digital public services as adaptive systems that evolve through constant interaction, improvisation, and adjustment under conditions of uncertainty. These findings are also in line with (Moser-Plautz & Schmidthuber, 2023), which suggests that the digital transformation of government is strongly influenced by an organization's capacity to respond to external pressures and make internal adjustments. In the case of *IKD*, this can be seen from the importance of coordination between officers, field-based learning, and improvisation when the system or user presents challenges that are not fully anticipated in the formal guidelines.

The contextual significance of these findings is that successful implementation of digital identity cannot be separated from the quality of front-level bureaucratic work, even when policies are designed with a high digital orientation. This is interesting because part of the digital governance discourse is often associated with the reduction of human roles

through automation. On the contrary, this study shows that in the implementation phase of population services, humans are actually the infrastructure that determines the work of technology. In a practical sense, *IKD* has not replaced the need for a communicative, patient, and able apparatus to bridge the complexity of technology for citizens. Here, the findings of this study enrich the previous literature by emphasizing that human mediation is still a key component in the digitization of identity services, especially in environments where the level of digital literacy and the quality of infrastructure are not evenly distributed.

The third theme, namely the practical benefits of being limited by digital access and literacy, emphasizes that identity digitization does not take place on an equal social terrain. These findings show that residents who have adequate devices, are used to using applications, and have relatively good connectivity tend to see *IKD* as an easy innovation. On the other hand, residents who are less familiar with technology or have limited devices perceive *IKD* as a process that requires additional assistance. These results strongly support (Djatmiko et al., 2025), which assert that the digital transformation of public services can expand inclusion only when policies take into account barriers to access, digital capacity, and social conditions of marginalized groups. The same is also in line with the review (Latupeirissa et al., 2024), which warns that digitalization can deepen the digital divide if groups that do not have access to or familiarity with technology are left behind.

However, this study does not only confirm the existence of access gaps; He also points out that digital exclusion in identity services operates more subtly. Residents do not always explicitly reject *IKD*. Many of them admit to being interested, but hesitant for fear of making a mistake, confused by the steps of the application, or not sure if their mobile phone is supportive enough. This means that implementation barriers are not always in the form of open resistance, but are often present as delays in adoption, reliance on assistance, or the choice to remain dependent on physical documents. These findings deepen the criticism (Waara, 2025), which suggests that many models of government digital maturity have not really placed citizens at the center of evaluation. In

In the context of this research, the issue is not only whether the system is available, but whether the system is built on realistic assumptions about who the real user is.

Thus, the scientific contribution of these findings lies in the affirmation that *IKD* accessibility should be read as an issue of service fairness, not merely an issue of interface or socialization. These findings expand the discussion of digital governance by showing that digital identity, because it is fundamental to citizens' access to other rights and services, has more serious exclusion consequences than administrative services that are optional. In practical terms, the implications are clear: the *IKD* implementation strategy needs to integrate user assistance, simple communication design, easily accessible help channels, and transition schemes that do not punish citizens who are not yet digitally ready.

The fourth theme, namely fragile trust amid concerns over data security, shows that the legitimacy of digital identity services is highly determined by the relationship between the perception of system security and the quality of service interactions. These findings support (Gupta et al., 2025), which suggests that trust, risk, privacy, and security are core factors in the use of e-government. In this study, citizens tended to accept *IKD* not because they fully understood its security architecture, but because they obtained a reassuring explanation from officers and saw the service institution as a trustworthy actor. This is in

line with (Virnandes et al., 2024), who found that trust in the government's digital transformation is built through communicative, equitable, and accountable service experiences, not just through the technical performance of the platform.

However, the study also shows an important difference from some of the research on technology adoption that tends to treat trust as an individual or psychological variable. In the context of the implementation of *IKD*, trust appears to be an institutional experience that is relational. Citizens trust the system because they trust the officers, trust the process because it is explained patiently, and feel safe when the procedures look organized. This means that trust in technology is not yet fully autonomous; He is still mediated by trust against the bureaucracy that is present face-to-face. These findings are important because they shift the focus from technically secure system design to broader questions: how that security is communicated, how procedural transparency is built, and how service experiences shape a country's digital legitimacy. Scientifically, this study enriches the literature on trust in e-government by showing that in digital identity policy, trust works through institutional and interpersonal nodes at the same time.

The fifth theme, namely the survival of the hybrid service pattern, shows that the digitalization of population administration at the implementation stage has not taken the form of full replacement, but rather the co-existence between the digital system and conventional administrative mechanisms (Jayasinga & Triono, 2023). These findings are conceptually significant. He points out that the transformation of public services does not always lead to the complete elimination of the old system; Often what happens is a hybrid phase that is longer and more pragmatic than envisioned in policy. These findings are in line with (Lips & Eppel, 2022), which emphasizes that the evolution of digital services is taking place through complex adaptations and is not entirely linear. It is also consistent with the broader reflection in the study of government digital transformation that institutional change usually takes place gradually, with a combination of new innovations and old routines that are maintained to maintain the continuity of service.

In the context of *IKD*, this hybrid form has two meanings. First, administratively it becomes a buffer mechanism that allows services to continue to run for citizens with different levels of readiness. Second, socially, it functions as a transition space that provides a sense of security for residents who are not ready to release physical documents. This means that the existence of an old system is not always a sign of digitalization failure; In a certain phase, it actually becomes a form of rational adaptation. However, these findings also contain a caveat: if hybrid patterns last too long without a clear transition design, organizations can potentially bear a double burden, while citizens remain in uncertainty about expected service standards.

Table 3 *IKD*

Key findings	Contextual meaning	Suitability/tension with literature	Implications
IKD is perceived as modern and speed up services	Digitalization creates a new image country as a service provider	Supports the digital service efficiency literature, but shows that "modernization" often comes first as a symbol	It is necessary to connect technical innovation with practical benefits that users actually perceive
	Technology Still		Training, mentoring, and

Implementation relies on apparatus	Human-Mediated and service	Consistent with the perspective of complexity and organizational adaptation	communication capacity of the apparatus Be the key
Access and literacy Digital limits benefits	Digitalization works uneven between residents	Supporting the digital inclusion literature and criticism of the less citizen-centric model	Need for a more inclusive, gradual, and user-friendly service design
Trust is built on fragility	System security must present as an experience that can Understood by the Citizens	Supporting trust–privacy–security literature, but adds an interpersonal trust dimension	Risk communication, procedural transparency, and officer attendance are essential
Service Stay Hybrid	The transformation takes place gradually, Not a total replacement	Align with Complexity theory and gradual institutional change	A clear transition strategy is needed for hybridity no Become Permanent load

Thus, the scientific contribution of this research lies in three things. First, this study shows that the implementation of *IKD* needs to be read as a digital governance issue that connects data orchestration, organizational capacity, service quality, and citizen experience simultaneously. Second, the study offers an empirical explanation that Trust and accessibility are not additional variables at the periphery of implementation, but are central to the success of digital identity as a public service. Third, this study shows that the hybrid phase is an important character in the transition of digital population services, so policy evaluation should not be too quick to use the binary measure of "successful" or "failing". In the practical realm, these findings suggest that strengthening the implementation of *IKD* must move beyond the logic of providing applications: the government needs to strengthen citizens' digital literacy, apparatus communication capacity, system interoperability, and communicative, not just formal, security and privacy governance.

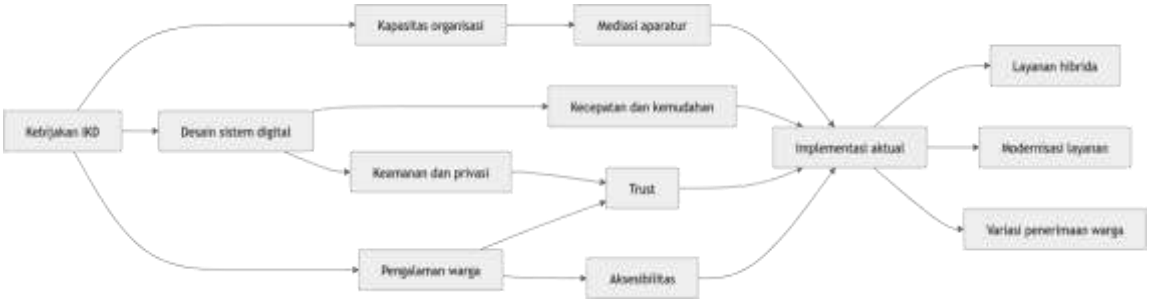

Figure 1. The Position of Findings in the *IKD* Implementation Framework

This research still has a number of limitations that need to be explicitly stated. First, the design of a qualitative case study in a single context of a service organization limits the breadth of generalization of findings. The results of this study are more appropriately understood as a rich contextual explanation than a representation of the entire implementation of *IKD* in various regions. Second, the data relies heavily on participants' subjective experiences and observations at specific phases of implementation, so policy changes, system improvements, or institutional dynamics after the research has been conducted may result in different patterns. Third, because the focus of the research is on the implementation process at the service level, the study has not in-depth examined the more macro technical dimensions, such as national interoperability

architectures, cross-agency governance, or system security audits. Fourth, the character of the interviewed user may be more representative of the citizens who have interacted with the service, while the voices of citizens who are completely unreached by digital channels may not have been adequately captured. These limitations are in line with methodological reflections in digital government case studies and research, which emphasize the importance of caution in drawing cross-context inferences from findings that are highly tied to specific organizational settings.

Based on these limitations, further research can be developed in several directions. First, a comparative study between regions will be very useful to identify how variations in organizational capacity, digital infrastructure, and social characteristics of citizens affect the implementation of *IKD* differently. Second, future research could use a multi-level design that links the service experience in the front office with data governance and interagency coordination at a higher level. Third, the theoretical approach can be expanded by combining the perspectives of digital governance, socio-technical systems, and digital justice so that the analysis does not stop at the issue of effectiveness, but also reaches the power relations, inclusion, and rights of citizens in the digital identity ecosystem. Fourth, methodologically, a combination of in-depth qualitative studies and targeted surveys can help bring together a wealth of context with a picture of variations in acceptance patterns wider public. These agendas are in line with the current literature that emphasizes the need for digital government research that is more contextual, citizen-centric, and sensitive to the interaction between technology, organizations, and public values.

In the end, this discussion emphasized that the implementation of *IKD* is not just a question of technological readiness, but rather about how the state manages the transition to digital population administration in a fair, reliable, and operational manner. The research findings show that efficiency is important, but not enough; modernization is indeed necessary, but it must not ignore the inequality of access; data security must be guaranteed, but it must also be understandable and trusted by citizens; And digital transformation, instead of marginalizing the apparatus, demands a higher human capacity to bridge the system with public needs. In this sense, the most substantive contribution of the research is not only to the explanation of how *IKD* is implemented, but to the affirmation that the future of digital population administration will be largely determined by the government's ability to maintain a balance between technological innovation and public service fairness.

CONCLUSION

This study showed that the implementation of Digital Population Identity (*IKD*) in the transformation of population administration services is a more complex process than just digitizing service procedures. *IKD* does open opportunities for more effective, more transparent, and more accessible services, but its success is largely determined by the ability of service organizations to manage changes, assist users, and build public trust in digital systems. Thus, the transformation of population administration does not take place solely through the adoption of technology, but through a dynamic interaction between policies, apparatus capacity, digital infrastructure, and community readiness. The findings of this study directly answer the purpose of the study, which is to explain how *IKD* policies are implemented in population administration services, identify supporting and inhibiting factors,

and examine their contribution to the effectiveness, transparency, and accessibility of public services. At the same time, this study also answers the gap that has been seen in previous studies, especially the tendency of research to highlight more technical aspects, measurement of program effectiveness, or user adoption rates, without paying enough attention to the dynamics of policy implementation at the level of service organizations and the experiences of the actors involved in it. Through a qualitative approach, this study shows that the implementation of *IKD* needs to be read as a layered digital governance process, not as a neutral and uniform administrative innovation.

REFERENCE

Alshawaaf, N., & Alzougool, B. (2024). Evaluating success in digital transformation of government services: Insights and evidence from Kuwait.

Degen, K., & Teubner, T. (2024). Wallet wars or digital public infrastructure? Orchestrating a digital identity data ecosystem from a government perspective. *Electronic Markets, 34*, 50. https://doi.org/10.1007/s12525-024-00731-1

Djatmiko, G. H., Sinaga, O., & Pawirosumarto, S. (2025). Digital transformation and social inclusion in public services: A qualitative analysis of e-government adoption for marginalized communities in sustainable governance. *Sustainability, 17*(7), 2908. https://doi.org/10.3390/su17072908

Fadhina, H. R., Fauzi, N., Siskawati, E., Sakti, M. R. P., & Aziz, N. A. A. (2022). Change management on digital transformation in vehicle tax payment process: An understanding from institutional analysis. *Economics, Business, Accounting & Society Review, 1*(3), 167–178.

Fahmi, A. R. (2025). Digital public services and citizen trust in government. *VISIONER: Journal of Local Government in Indonesia, 17*(2), 49–60. https://doi.org/10.54783/jv.v17i2.1419

Gadde, S. (2025). Decentralized identity governance in multi-cloud ecosystems: Challenges, frameworks, and future directions. *European Modern Studies Journal, 9*(3), 350–357. https://doi.org/10.59573/emsj.9(3).2025.30

Gupta, P., Hooda, A., Jeyaraj, A., Seddon, J. J. M., & Dwivedi, Y. K. (2025). Trust, risk, privacy and security in e-government use: Insights from a MASEM analysis. *Information Systems Frontiers, 27*, 1089–1105. https://doi.org/10.1007/s10796-024-10497-8

Hooda, A., Gupta, P., Jeyaraj, A., & Dwivedi, Y. K. (2023). Clarifying the role of e-government trust in e-government success models: A meta-analytic structural equation modeling approach. *Australasian Journal of Information Systems, 27*. https://doi.org/10.3127/ajis.v27i0.4079

Idrus, S. (2025). *Digital human resource management: Increasing the competitiveness of MSMEs in the global market*.

Janssen, M., Zhang, H., Ojo, A., Nikiforova, A., Loukis, E., Viale Pereira, G., Scholl, H. J., Liu, H. K., Durkiewicz, J., Hughes, L., Zheng, L., Anthopoulos, L., Panagiotopoulos, P., Janowski, T., & Dwivedi, Y. K. (2025). Reflections on the nature of digital government research: Marking the 50th anniversary of *Government Information Quarterly*. *Government Information Quarterly, 42*(4), 102086. https://doi.org/10.1016/j.giq.2025.102086

Jayasinga, I., & Triono, A. (2023). Digitalization of population administration to facilitate public services in the era of regional autonomy. *International Journal of Multicultural and Multireligious Understanding, 10*, 484. https://doi.org/10.18415/ijmmu.v10i5.4725

Jopang, J., Aryatama, S., Muazzinah, M., Qamal, Q., & Ansar, A. (2024). Exploring the relationship between e-government, transparency, and citizen trust in government

services. *Global International Journal of Innovative Research, 2*(6), 1354–1363. https://doi.org/10.59613/global.v2i6.206

Kanaan, A., Al-Hawamleh, A., Abulfaraj, A., Al-Kaseasbeh, H., & Alorfi, A. (2023). The effect of quality, security and privacy factors on trust and intention to use e-government services. *International Journal of Data and Network Science, 7*, 185–198. https://doi.org/10.5267/j.ijdns.2022.11.004

Kodaneva, S. I. (2022). Digital government: The state as a platform. *Social Sciences and Humanities: Russian and Foreign Literature, 3*, 8–20. https://doi.org/10.31249/rgpravo/2022.03.01

Kraus, S., Jones, P., Kailer, N., Weinmann, A., Chaparro-Banegas, N., & Roig-Tierno, N. (2021). Digital transformation: An overview of the current state of the art of research. *SAGE Open, 11*(3), 21582440211047576. https://doi.org/10.1177/21582440211047576

Latupeirissa, J. J. P., Dewi, N. L. Y., Prayana, I. K. R., Srikandi, M. B., Ramadiansyah, S. A., & Pramana, I. B. G. A. Y. (2024). Transforming public service delivery: A comprehensive review of digitization initiatives. *Sustainability, 16*(7), 2818. https://doi.org/10.3390/su16072818

Lazor, O., Yunyk, I., Zubar, I. V., Dzeveliuk, M., & Dzeveliuk, A. (2024). The impact of e-governance on shortening public service delivery terms. *Telos: Revista de Estudios Interdisciplinarios en Ciencias Sociales, 26*(3), 1131–1145. https://doi.org/10.36390/telos263.21

Lips, M., & Eppel, E. (2022). Understanding public service provision using digital technologies during COVID-19 lockdowns in New Zealand through a complexity theory lens. *Global Public Policy and Governance, 2*(4), 498–517. https://doi.org/10.1007/s43508-022-00057-8

Moser-Plautz, B., & Schmidthuber, L. (2023). Digital government transformation as an organizational response to the COVID-19 pandemic. *Government Information Quarterly, 40*(4), 101815. https://doi.org/10.1016/j.giq.2023.101815

Pasenko, N. (2022). Current trends in digital transformation of public administration. *Naukovyi Visnyk Mukachivskoho Derzhavnoho Universytetu, 9*(2), 46–51. https://doi.org/10.52566/msu-econ.9(2).2022.46-51

Ramadan, Q., Boukhers, Z., AlShaikh, M., Lange, C., & Jürjens, J. (2024). Data trading and monetization: Challenges and open research directions. *arXiv*. https://doi.org/10.48550/arxiv.2401.09199

Robles-Carrillo, M. (2024). Digital identity: An approach to its nature, concept, and functionalities. *International Journal of Law and Information Technology*. https://doi.org/10.1093/ijlit/eaae019

Sanduan, H., Madubun, J., & Bahasoan, A. (2026). Digital transformation and work culture change in public administration: Evidence from Indonesia. *Jurnal Ilmiah Global Education, 7*, 278–290. https://doi.org/10.55681/jige.v7i1.5419

Scholl, H. J. (2020). Digital government: Looking back and ahead on a fascinating domain of research and practice. *Digital Government: Research and Practice, 1*(1), 1–12. https://doi.org/10.1145/3352682

Selvakumar, P., B., P. S., Mishra, B. R., Satyanarayana, P., Mohit, M., & Nitika. (2025). Digital government and digital governance. In *Advances in computational intelligence and robotics* (pp. 1–22). https://doi.org/10.4018/979-8-3693-9286-7.ch001

Spiliotopoulos, T., Sheik, A. T., Gottardello, D., & Dover, R. V. H. (2023). Onboarding citizens to digital identity systems. https://doi.org/10.1049/icp.2023.2575

Virnandes, S. R., Shen, J., & Vlahu-Gjorgievska, E. (2024). Building public trust through digital government transformation: A qualitative study of Indonesian civil service agency. *Procedia Computer Science, 234*, 1183–1191.

https://doi.org/10.1016/j.procs.2024.03.114
Waara, A. (2025). Examining digital government maturity models: Evaluating the inclusion of citizens. *Administrative Sciences, 15*(3), 73. https://doi.org/10.3390/admsci15030073
Wirata, G., Gunawan, M., Judijanto, L., Sarmento, A., & Permono, A. (2025). The role of e-government innovation in enhancing public service performance and strengthening transparent governance. *International Journal of Accounting and Economics Studies, 12*, 710–717. https://doi.org/10.14419/zxpzp606
Yang, C., Gu, M., & Albitar, K. (2024). Government in the digital age: Exploring the impact of digital transformation on governmental efficiency. *Technological Forecasting and Social Change, 208*, 123722. https://doi.org/10.1016/j.techfore.2024.123722
Yusifov, F., & Gurbanov, E. (2024). Digital transformations in public administration. https://doi.org/10.59849/aidd.2024.26
Zhang, Y. (2025). Silent exclusion: An analysis of the healthcare integration dilemma for the elderly in seeking medical treatment under urban digital transformation. *Scientific Journal of Humanities and Social Sciences, 7*(9), 79–90. https://doi.org/10.54691/7n73gg10
Zulkifli, F. R., Abidin, R. Z., Ariff, M. I. M., Ahmad, N. A., Arshad, N. I., & Ependi, U. (2023). National digital identity: Current landscape, emerging technologies and future directions. *International Journal of Academic Research in Business and Social Sciences, 13*(3). https://doi.org/10.6007/ijarbss/v13-i3/16603