

STRENGTHENING DIGITAL GOVERNANCE IN THE IMPLEMENTATION OF DIGITAL POPULATION IDENTITY IN RIAU PROVINCE, INDONESIA

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Abstract

The transformation of public administration in the digital era demands robust digital governance to ensure effective, transparent, and inclusive service delivery. This study examines the implementation of the Digital Population Identity (IKD) program in Riau Province, Indonesia, as a strategic effort to enhance administrative efficiency and strengthen digital public management. Using a qualitative descriptive approach, data were collected through interviews, document analysis, and observation of local government institutions responsible for population administration. The findings reveal that while the adoption of digital identity systems has improved data integration and service accessibility, several governance challenges persist, including limited digital literacy among civil servants, inadequate technological infrastructure, and fragmented institutional coordination. Strengthening digital governance through capacity building, standardized data management, and clear regulatory frameworks emerges as a key determinant of successful digital identity implementation. This study underscores the importance of aligning technological innovation with governance reform to ensure that digital transformation contributes to public service efficiency, accountability, and citizen trust. The results provide practical insights for policymakers and local governments in developing countries seeking to optimize e-government initiatives through integrated and sustainable digital governance strategies.

Keywords: *digital governance, public administration, digital identity, e-government.*

Abstrak

Transformasi administrasi publik di era digital menuntut tata kelola digital yang kuat untuk menjamin penyelenggaraan layanan publik yang efektif, transparan, dan inklusif. Penelitian ini mengkaji implementasi program Identitas Kependudukan Digital (IKD) di Provinsi Riau, Indonesia, sebagai upaya strategis untuk meningkatkan efisiensi administrasi dan memperkuat manajemen publik digital. Penelitian ini menggunakan pendekatan deskriptif kualitatif, dengan pengumpulan data melalui wawancara, analisis dokumen, serta observasi pada instansi pemerintah daerah yang bertanggung jawab dalam administrasi kependudukan. Hasil penelitian menunjukkan bahwa meskipun penerapan sistem identitas digital telah meningkatkan integrasi data dan aksesibilitas layanan, masih terdapat sejumlah tantangan tata kelola, antara lain keterbatasan literasi digital aparatur sipil negara, belum memadainya infrastruktur teknologi, serta

koordinasi kelembagaan yang masih terfragmentasi. Penguatan tata kelola digital melalui peningkatan kapasitas sumber daya manusia, standardisasi pengelolaan data, dan penyusunan kerangka regulasi yang jelas menjadi faktor penentu utama dalam keberhasilan implementasi identitas digital. Penelitian ini menegaskan pentingnya penyelarasan antara inovasi teknologi dan reformasi tata kelola guna memastikan bahwa transformasi digital berkontribusi secara nyata terhadap efisiensi pelayanan publik, akuntabilitas, dan kepercayaan masyarakat. Temuan penelitian ini memberikan wawasan praktis bagi para pembuat kebijakan dan pemerintah daerah di negara berkembang dalam mengoptimalkan inisiatif e-government melalui strategi tata kelola digital yang terintegrasi dan berkelanjutan.

Kata Kunci: Tata kelola digital, administrasi publik, identitas digital dan e-government.

INTRODUCTION

The rapid development of information and communication technology has driven fundamental transformations in the administration of public governance across countries. The digitalization of the public sector is no longer viewed merely as an instrument for bureaucratic modernization, but also as a strategic approach to enhancing efficiency, transparency, accountability, and the overall quality of public service delivery. In the global context, digital government has emerged as a new paradigm of governance, wherein the utilization of digital technologies is integrated with institutional, procedural, and policy reforms to respond to increasingly complex and dynamic societal demands.

In developing countries, including Indonesia, public sector digital transformation faces more complex challenges than in developed nations. These challenges include disparities in technological infrastructure, limited human resource capacity, low levels of digital literacy, and suboptimal inter-agency coordination. Consequently, the success of digital transformation is not determined solely by the availability of technology, but is highly dependent on the quality of digital governance that is capable of regulating, coordinating, and controlling the use of technology in an effective, inclusive, and sustainable manner.

One strategic component of digital government transformation is the strengthening of digital identity systems. Digital identity serves as a fundamental foundation for the delivery of electronic-based public services, as it enables the integration of population data, accurate identity verification, and interoperability across service systems. International organizations such as the World Bank and the OECD emphasize that well-managed digital identity systems can enhance administrative efficiency, expand access to social services, reduce data duplication, and strengthen public trust in government institutions.

In Indonesia, efforts to strengthen digital identity are realized through the implementation of the Digital Population Identity (Identitas Kependudukan Digital/IKD) program, developed by the Ministry of Home Affairs as part of the national digital transformation agenda and the strengthening of the Electronic-Based Government System (Sistem Pemerintahan Berbasis Elektronik/SPBE). IKD is designed to digitally integrate population data, facilitate access to administrative services, and support a more integrated and responsive e-government ecosystem. This program is expected to replace or complement conventional physical identity documents with a secure, accurate, and easily accessible digital identity system.

Riau Province is one of the regions actively implementing the IKD program to

improve the quality of population administration services at the regional level. As a province characterized by a wide geographical area, socio-economic diversity, and uneven access to technology across regions, Riau faces unique challenges in the adoption of digital identity systems. The implementation of IKD in this province provides a relevant context for examining how digital governance is applied in practice and to what extent institutional readiness and resource capacity support the success of the program.

Although the implementation of IKD in Riau Province demonstrates potential for improving service efficiency and population data integration, various governance-related issues persist. Several studies and preliminary reports indicate limitations in the digital literacy of civil servants, uneven distribution of information technology infrastructure, and weak coordination and policy synchronization among relevant institutions. These conditions may hinder the optimal utilization of IKD and pose risks of inefficiency, overlapping authority, and low levels of public adoption.

From a digital governance perspective, these challenges highlight that digital transformation cannot be separated from broader governance reforms. Digital governance emphasizes the importance of clear regulatory frameworks, cross-sector coordination mechanisms, standardized data management, and the strengthening of human resource capacity to support digital technology implementation. Without robust digital governance, technological innovations risk becoming partial and unsustainable solutions that fail to deliver significant improvements in public service quality.

Furthermore, data security and privacy protection have become critical concerns in the implementation of digital identity systems. The management of sensitive population data requires strict policies and oversight mechanisms to

prevent data misuse and to safeguard public trust. Therefore, strengthening digital governance in the implementation of IKD should not only focus on technical aspects, but also encompass ethical, legal, and public accountability dimensions.

Digital transformation in public administration through the implementation of Digital Population Identity (IKD) in Riau Province represents a strategic policy aimed at enhancing service efficiency, population data integration, and the quality of digital government governance. However, in practice, the implementation of this policy is not free from governance-related challenges that may hinder the achievement of these objectives. The central issue of this research lies in the suboptimal strengthening of digital governance in the implementation of IKD at the regional level.

More specifically, the research problems encompass several fundamental aspects. First, the limited capacity and digital literacy of regional government officials in managing and operating digital population identity systems effectively and sustainably. This condition results in suboptimal utilization of digital technologies and continued reliance on conventional administrative procedures.

Second, the uneven availability and quality of information and communication technology infrastructure across Riau Province constitute a significant challenge in IKD implementation. Limited digital infrastructure may lead to disparities in access to digital population services between urban and rural areas, thereby undermining the principle of inclusivity in public service delivery.

Third, weak institutional coordination and integration among government agencies involved in digital population administration remain a significant constraint. Data fragmentation, differences in information management standards, and overlapping institutional authority result in services that are not yet

delivered in a synergistic and efficient manner.

Fourth, regulatory frameworks and supporting policies related to IKD implementation particularly those governing data governance, information security, and personal data protection are not yet fully understood or consistently implemented at the regional level. This situation poses potential risks to data security and may reduce public trust in digital identity services.

Fifth, public understanding, participation, and trust in the use of Digital Population Identity vary considerably. Limited public outreach and education regarding the benefits, procedures, and security aspects of IKD may hinder widespread adoption of digital services.

Based on the foregoing discussion, this study is essential for comprehensively examining the strengthening of digital governance in the implementation of Digital Population Identity in Riau Province, Indonesia. The research seeks to identify governance challenges, assess the practices adopted, and analyze key factors influencing the successful implementation of IKD at the regional level. Accordingly, the findings are expected to contribute theoretically to the advancement of public administration and digital governance studies, while also providing practical recommendations for policymakers and local governments in designing integrated, effective, and sustainable digital transformation strategies.

RESEARCH QUESTIONS

Based on the research background, research problems, and research objectives that have been previously outlined, the research questions of this study are formulated as follows:

1. How is the implementation of the Digital Population Identity (Identitas Kependudukan Digital/IKD) in Riau Province supporting the digital transformation of public administration

and the improvement of population administration service quality?

2. What factors serve as barriers and enablers in strengthening digital governance in the implementation of the Digital Population Identity (IKD) in Riau Province?

RESEARCH METHODS

This study employs a qualitative approach with a descriptive-analytical design, aiming to obtain an in-depth understanding of the implementation of the Digital Population Identity (IKD) in Riau Province in supporting the digital transformation of public administration and improving the quality of population administration services. The research was conducted in Riau Province, with a focus on local government institutions that have direct authority and responsibility in administering population services and implementing the Digital Population Identity program.

The research locations include the Population and Civil Registration Offices (Dinas Kependudukan dan Pencatatan Sipil/Disdukcapil) at the provincial and district/city levels, as well as other regional government agencies related to the management of electronic-based government systems (SPBE). The research subjects consist of stakeholders who are directly and indirectly involved in the implementation of IKD.

Research informants were selected purposively based on their competence, experience, and level of involvement in digital population identity policies and practices. The informants include:

1. Structural and functional officials at the Population and Civil Registration Offices of Riau Province and district/city governments;
2. Civil servants responsible for managing the IKD system and delivering digital population administration services;

3. Officials or staff of regional government agencies responsible for information technology management and SPBE implementation;
4. Representatives of the community as users of IKD services.

The selection of informants continued until data saturation was achieved, namely when the information obtained became repetitive and no longer yielded significant new findings.

Data were collected using several primary techniques to ensure data depth and validity, including in-depth interviews, document analysis, and observation. Data analysis was conducted qualitatively by following the stages of data reduction, data display, and conclusion drawing and verification, as proposed by Miles and Huberman.

RESEARCH FINDINGS AND DISCUSSION

Research Findings on Strengthening Digital Governance in the Implementation of Digital Population Identity in Riau Province, Indonesia

The implementation of the Digital Population Identity (Identitas Kependudukan Digital/IKD) in Riau Province constitutes an integral component of the public administration digital transformation agenda aimed at enhancing bureaucratic efficiency, strengthening the integration of population data, and improving the quality of public service delivery. This transformation aligns with global demands for public sector modernization that position digital technology as a key instrument in realizing effective, transparent, and responsive governance. Nevertheless, the success of IKD implementation is not solely determined by the sophistication of information technology employed, but is highly dependent on the robustness of the surrounding digital governance framework.

Digital governance functions as a strategic framework that regulates how

digital technologies are planned, managed, and utilized within governmental processes. In the context of IKD, digital governance serves as a critical determinant in ensuring that digital identity systems operate in an integrated, secure, sustainable manner and generate tangible benefits for citizens. Accordingly, strengthening digital governance in the implementation of IKD in Riau Province must be examined comprehensively through several key indicators, including policy and regulatory frameworks, institutional capacity, human resources, technological infrastructure, data integration and management, data security and personal data protection, inter-agency coordination and collaboration, as well as public participation and trust.

1. Digital Policy and Regulatory Framework

From a policy and regulatory perspective, the implementation of IKD in Riau Province is grounded in national policies on population administration and the Electronic-Based Government System (Sistem Pemerintahan Berbasis Elektronik/SPBE). These policies provide strategic direction and legal legitimacy for local governments to develop and implement digital population identity as part of bureaucratic reform and public service transformation. The existence of national-level policies serves as a crucial foundation for promoting the widespread adoption of digital technologies in the population administration sector.

However, in practical implementation, the strengthening of digital governance continues to face challenges, particularly related to the suboptimal translation of national policies into technical and operational regulations at the local level. This condition is reflected in variations in civil servants' understanding of IKD standard operating procedures, as well as differences in service patterns and delivery mechanisms across districts and municipalities. Such disparities indicate that macro-level policies have not been

fully supported by detailed and context-specific technical regulations that reflect local characteristics and capacities.

Strengthening digital governance therefore requires the establishment of more adaptive, operational, and implementable local regulatory frameworks. Local regulations should be designed not merely as extensions of national policies, but as instruments capable of providing legal certainty, clarifying roles and authorities among institutions, and ensuring uniform service standards for all citizens. In the absence of clear and consistent regulations, IKD implementation risks becoming partial, sectoral, and poorly integrated, thereby undermining the achievement of public administration digital transformation objectives in an optimal and sustainable manner.

2. Institutional Capacity in Digital Governance

Institutional capacity constitutes a fundamental indicator in strengthening digital governance, as institutions serve as the primary actors responsible for managing, coordinating, and controlling the implementation of digital policies. In Riau Province, the Population and Civil Registration Office (Dinas Kependudukan dan Pencatatan Sipil/Disdukcapil), as the leading sector, plays a strategic role in coordinating the implementation of the Digital Population Identity (IKD) at both the provincial and district/city levels. Structurally, institutional arrangements supporting IKD implementation have been established, including organizational units and service mechanisms related to digital population administration.

Nevertheless, institutional capacity to manage digital transformation still requires significant strengthening. Digital transformation demands institutions that not only perform routine administrative functions, but also act as drivers of innovation, agents of change, and coordinators across sectors. In this context,

limitations remain in institutional capabilities to formulate long-term strategies, manage resources effectively, and adapt organizational structures and work processes to the rapidly evolving dynamics of digital technology.

In addition, internal coordination mechanisms and cross-agency collaboration among regional government units in IKD implementation have not yet functioned optimally. These coordination constraints have contributed to delays in integrating digital population services with other public services, such as healthcare, education, and social assistance. Consequently, the potential of IKD as a foundation for integrated, data-driven public service delivery has not been fully realized.

Strengthening institutional capacity in digital governance requires a comprehensive approach that includes organizational restructuring, enhancement of coordination functions, and the development of managerial capabilities for managing digital innovation. With strong and adaptive institutional capacity, the implementation of IKD in Riau Province can be more strategic, integrated, and capable of making a tangible contribution to improving public service quality and the effectiveness of government administration.

3. Human Resource Capacity and Digital Literacy

Human resources within the public bureaucracy constitute a decisive factor in the successful implementation of the Digital Population Identity (IKD), as civil servants directly function as designers, managers, and frontline implementers of digital population services. In the context of Riau Province, the analysis indicates that the level of digital literacy and competence among public officials remains uneven. Some officials demonstrate adequate technical skills in operating IKD applications, understanding digital service workflows, and interacting with service

users. However, others continue to experience difficulties, both in technical system usage and in comprehending the broader concept of digital-based public service delivery.

This variation in digital literacy reflects capacity gaps across organizational units and geographical areas. Civil servants in urban areas tend to be more adaptive to digital technology utilization compared to those in geographically remote regions. Such disparities affect the quality of IKD services received by citizens and influence the speed and effectiveness of population administration processes.

Strengthening digital governance in IKD implementation necessitates a well-planned and sustainable human resource development strategy. Technical training alone is insufficient; digital competency development must also encompass conceptual understanding of digital governance, data security, ethics in digital public service delivery, and organizational change management. Moreover, digital transformation requires a shift in bureaucratic work culture from procedural and administrative routines toward more innovative, adaptive, collaborative, and citizen-oriented approaches.

Within this framework, public officials are expected not only to operate digital technologies, but also to possess a digital mindset that supports public service innovation. Officials with strong digital literacy are better positioned to respond to policy changes, optimize the use of population data, and build more effective and transparent service interactions with citizens. Therefore, enhancing human resource capacity and digital literacy represents a central pillar in strengthening digital governance and ensuring the sustainability of IKD implementation in Riau Province.

4. Technological Infrastructure and Digital System Readiness

Technological infrastructure constitutes a basic prerequisite for the

implementation of the Digital Population Identity, as it forms the foundation for the operation of all digital-based population service systems. In Riau Province, the availability of information and communication technology infrastructure remains uneven across regions, particularly between urban areas and geographically remote locations. Limitations in stable internet connectivity, adequate hardware, and supporting systems directly affect the operational continuity of IKD services.

Unequal infrastructure conditions have significant implications for service accessibility. In areas with relatively well-developed infrastructure, digital population services can be delivered more efficiently and effectively. Conversely, in regions with limited infrastructure, IKD services often encounter technical disruptions, service delays, and continued reliance on manual procedures. This situation has the potential to create disparities in public service quality across regions, which contradicts the principle of inclusivity in digital governance.

Strengthening digital governance requires inclusive, integrated, and sustainable planning and development of technological infrastructure. Digital infrastructure should not be viewed as a short-term investment, but rather as an integral component of long-term regional development strategies. Accordingly, IKD implementation policies must be aligned with regional digital infrastructure development plans, including the expansion of internet networks, provision of technological equipment, and development of reliable and secure supporting systems.

Without adequate technological infrastructure, digital identity innovations risk failing to achieve their primary objectives and may even exacerbate inequalities in public service delivery. Therefore, technological infrastructure readiness is a critical factor in ensuring that the digital transformation of public administration through IKD can be

implemented equitably, effectively, and sustainably across all regions of Riau Province.

5. Integration and Management of Population Data

The integration and management of population data represent one of the principal benefits of implementing the Digital Population Identity (IKD). The implementation of IKD in Riau Province has demonstrated progress in the digital management and continuous updating of population data, enabling information to become more accurate, up to date, and accessible to relevant government institutions. Integrated population data holds substantial potential to support development planning, public policy formulation, and the improvement of cross-sectoral public service delivery.

Nevertheless, challenges persist, particularly in terms of system interoperability across institutions and the standardization of data management practices. Differences in technological platforms, data formats, and information management procedures among government agencies have resulted in suboptimal data integration. This fragmentation constrains the effective utilization of population data, both for public service provision and for data-driven policymaking.

Strengthening digital governance requires the establishment of integrated, standardized, and professionally managed data governance mechanisms. Data standardization, clarity of authority in data management, and secure data access arrangements constitute essential elements of digital population data governance. Moreover, effective data integration necessitates strong policy support and cross-sectoral coordination to ensure that population data can be utilized synergistically by multiple government institutions without compromising data security and personal data protection.

With well-managed and integrated population data, the Digital Population Identity functions not merely as an administrative instrument, but also as a strategic tool for realizing data-driven governance that is more responsive, accountable, and oriented toward improving public welfare.

6. Data Security and Privacy Protection

Data security and privacy protection constitute critical indicators in the implementation of the Digital Population Identity (IKD), given that the system manages sensitive and strategic personal data of citizens. In the context of Riau Province, the analysis indicates that although data security has been recognized as an important aspect of IKD implementation, the level of awareness and understanding among both public officials and citizens regarding the importance of personal data protection remains insufficient. This reflects a broader challenge in public sector digital transformation, where technological innovation often advances more rapidly than the strengthening of information security governance and awareness.

Data security in IKD implementation extends beyond technical measures, such as protecting systems from cyberattacks or data breaches, to encompass institutional and procedural dimensions. Access control mechanisms, clear delineation of authority in information management, and audit and oversight processes form integral components of information security governance. Without standardized and integrated security systems, digital population data is vulnerable to misuse by both internal and external actors, potentially undermining citizens' rights and trust.

Strengthening digital governance must therefore include the consistent and rigorous application of information security standards across all levels of government. These standards include the use of reliable authentication systems, data encryption,

role-based access controls, and comprehensive audit trails. In addition, public officials must be equipped with adequate understanding of data ethics and legal obligations related to personal data protection. Without sufficient data security literacy, even technologically advanced systems cannot guarantee optimal privacy protection.

Ensuring robust data security has direct implications for public trust. Citizens are more likely to adopt digital identity services when they are confident that their personal data is managed securely, transparently, and responsibly. Consequently, privacy protection is not merely an administrative requirement, but a fundamental pillar in building legitimacy and public trust in IKD services as an integral component of the digital transformation of public administration.

7. Interagency Coordination and Collaboration

Interagency coordination and collaboration represent a longstanding challenge in digital public administration, including in the implementation of the Digital Population Identity (IKD) in Riau Province. The IKD program involves multiple actors and institutions at both the provincial and district/city levels, each with distinct roles and authorities in population data management and public service delivery. This multiplicity of actors necessitates strong and well-structured coordination mechanisms to ensure that IKD implementation proceeds effectively and in an integrated manner.

The analysis indicates that suboptimal coordination has frequently resulted in task duplication, data inconsistencies, and delays in decision-making processes. Divergent perceptions among institutions, limited communication, and the absence of standardized data-sharing mechanisms constitute key barriers to effective collaboration. These conditions have negatively affected administrative efficiency and constrained the optimal

utilization of IKD as a foundation for cross-sectoral public service integration.

Strengthening digital governance requires the establishment of clear and sustainable coordination mechanisms, including the formation of cross-sectoral forums, the formulation of joint operational procedures, and the development of secure and integrated data-sharing systems. Furthermore, strong digital leadership is essential to foster interagency synergy, align organizational interests, and ensure consistency in the implementation of IKD policies across regions.

Effective interagency collaboration not only enhances the efficiency of population administration but also accelerates the integration of digital identity-based public services, such as healthcare, education, and social assistance. In this context, IKD can function as a core foundation for building an integrated digital government ecosystem that is responsive to citizens' needs.

8. Public Participation and Trust

Public participation and trust constitute the final and most decisive indicators in assessing the success of Digital Population Identity implementation. The success of digital transformation in public administration is not solely measured by the extent of technological deployment, but also by the level of public acceptance and utilization of digital services. In the context of Riau Province, the findings indicate that the adoption rate of IKD remains heavily influenced by public understanding of its benefits, procedures, and data security.

Insufficient public outreach and education have emerged as major factors limiting citizen participation in IKD utilization. Some segments of society continue to express concerns regarding personal data security, the practical benefits of IKD, and the transition from conventional administrative procedures to digital systems. This condition suggests that digital transformation has not been

fully accompanied by effective and inclusive public communication strategies.

Strengthening digital governance must therefore prioritize a citizen-centered governance approach, positioning citizens as central stakeholders in the digital transformation process. Public engagement can be enhanced through continuous socialization initiatives, transparent information dissemination, and feedback mechanisms that allow citizens to share their experiences and concerns regarding IKD services.

Transparency, accountability, and effective public communication are key determinants in building public trust in digital population identity services. When citizens feel actively involved, adequately protected, and well served, their trust in government institutions increases. Consequently, public participation and trust are not only outcomes of successful IKD implementation but also critical enabling factors for the sustainability of digital public administration transformation in Riau Province.

Overall, this discussion underscores that strengthening digital governance in the implementation of the Digital Population Identity (IKD) in Riau Province is a multidimensional and interrelated process. Digital governance enhancement cannot be understood as a single intervention focused solely on technology; rather, it represents a systemic effort encompassing policy and regulatory harmonization, institutional capacity strengthening, human resource development, reliable technological infrastructure provision, integrated and secure data management, as well as enhanced public participation and trust. Each of these dimensions mutually influences and determines the overall success of IKD implementation.

The findings demonstrate that IKD implementation cannot be separated from broader public governance reform agendas. The digitalization of population administration requires fundamental changes in how governments design

policies, manage organizations, and deliver public services. Therefore, strengthening digital governance must be positioned as an integral component of bureaucratic reform, rather than merely as an information technology project. Without comprehensive governance reform, IKD implementation risks resulting in the mere digitalization of traditional administrative procedures without producing significant improvements in public service quality.

In the context of Riau Province, integrated and sustainable digital governance strengthening holds strategic potential to position IKD as a core foundation for developing a digital government ecosystem. Digital population identity can function as a connector among public services, enable cross-sectoral data integration, and support more accurate and responsive data-driven decision-making. With strong digital governance, IKD not only enhances the efficiency of population administration but also contributes to improved governmental accountability and increased public trust in public institutions.

Furthermore, this discussion emphasizes that the sustainability of IKD implementation is highly dependent on the long-term commitment of local governments to consistently strengthen digital governance. Such commitment is reflected in the provision of adaptive regulatory frameworks, sustained investment in human resource development and digital infrastructure, and systematic efforts to engage citizens in the digital transformation process. Without long-term commitment, IKD implementation risks stagnation and may fail to adapt to evolving technological dynamics and societal needs.

In conclusion, strengthening digital governance in the implementation of the Digital Population Identity in Riau Province can be regarded as a strategic instrument for realizing a modern, responsive, inclusive, and service-oriented public administration. Through an integrated and sustainable digital governance approach, IKD has the potential

to act as a catalyst for public administration transformation that not only enhances bureaucratic efficiency but also strengthens the relationship between government and citizens within the framework of democratic and equitable digital governance.

Factors Hindering the Strengthening of Digital Governance in the Implementation of Digital Population Identity (IKD) in Riau Province

Strengthening digital governance in the implementation of the Digital Population Identity (IKD) constitutes a complex process involving multiple policy, organizational, technological, and social dimensions. International studies in public administration and e-government indicate that failures or delays in the implementation of digital government services are often not caused solely by technological limitations, but rather by a range of structural and institutional barriers. In the context of Riau Province, similar inhibiting factors have also been observed to affect the strengthening of digital governance in IKD implementation.

1. Limitations in Operational Policy and Regulatory Frameworks

One of the primary inhibiting factors is the suboptimal development of operational policy and regulatory frameworks at the regional level. Although national policies provide a legal foundation for IKD implementation, the translation of these policies into technical regulations and operational guidelines at the local level has not been fully standardized. This situation has resulted in variations in interpretation and implementation practices across districts and municipalities in Riau Province.

In the international e-government literature, regulatory ambiguity is frequently associated with weak legal certainty, overlapping authorities, and inconsistencies in digital public service delivery. In the context of IKD, such

conditions may hinder system integration and weaken accountability in the administration of digital identity services.

2. Suboptimal Institutional Capacity

Another significant barrier lies in the limited institutional capacity to manage digital transformation. Public administration studies emphasize the importance of adaptive, collaborative institutions supported by strong digital leadership. In Riau Province, although the institutional structures required for IKD implementation are formally in place, institutional capacity in planning, coordinating, and controlling the implementation process remains constrained.

These limitations are reflected in weak inter-agency coordination, the absence of effective collaborative working mechanisms, and restricted institutional authority to integrate cross-sectoral services based on IKD. As a result, digital governance practices tend to operate in a fragmented and sectoral manner.

3. Low and Uneven Digital Literacy Among Civil Servants

Global e-government literature consistently identifies human resource capacity as a critical determinant of digital governance success. In the implementation of IKD in Riau Province, the level of digital literacy and technical competence among civil servants varies significantly across regions and organizational units. Civil servants with limited digital skills often experience difficulties in operating digital systems, adapting to new procedures, and delivering optimal services to citizens.

This condition hampers the consistency of IKD implementation and slows the pace of digital transformation in population administration. Furthermore, a bureaucratic work culture that remains oriented toward conventional administrative procedures presents an additional obstacle to the internalization of digital governance values.

4. Inequality in Technological Infrastructure and Digital Access

Limited and uneven technological infrastructure constitutes a classic barrier in e-government development, particularly in regions with diverse geographical characteristics. In Riau Province, disparities in internet connectivity, hardware availability, and supporting digital systems across regions directly affect the effectiveness of IKD implementation.

International studies suggest that digital infrastructure gaps may exacerbate inequalities in public service provision, commonly referred to as the digital divide. In the context of IKD, inadequate infrastructure restricts citizens' access to digital identity services and undermines the principle of inclusivity in digital governance.

5. System Fragmentation and Weak Data Integration

System fragmentation and weak inter-agency data integration represent significant barriers to strengthening digital governance. IKD implementation requires high levels of system interoperability and data standardization to enable cross-sectoral utilization of digital identity. However, in practice, differences in technological platforms, data formats, and information management procedures continue to constrain integration efforts in Riau Province.

In e-government literature, data fragmentation is often linked to low public service effectiveness and limited use of data for evidence-based policymaking. These conditions also restrict IKD's potential to function as a foundational instrument for integrated public service delivery.

6. Weaknesses in Data Security and Privacy Protection

Data security and privacy protection are critical concerns in digital identity implementation. Barriers arise when information security standards are not

consistently enforced and when civil servants' understanding of personal data protection remains limited. In the context of Riau Province, such weaknesses increase the risk of data breaches and misuse of population information.

International studies demonstrate that inadequate data protection can significantly erode public trust in digital government services. Consequently, deficiencies in data security governance constitute a serious obstacle to strengthening digital governance in IKD implementation.

7. Weak Interagency Coordination and Collaboration

Insufficient interagency coordination and collaboration represent structural barriers commonly identified in e-government implementation. In Riau Province, the involvement of multiple actors and institutions in IKD implementation has not been matched by effective coordination mechanisms. This has resulted in role duplication, policy misalignment, and slow decision-making processes.

Public administration literature emphasizes that without strong cross-sectoral collaboration, digital government transformation tends to remain partial and unsustainable. These coordination weaknesses therefore limit the strategic impact of IKD as an integrated digital governance instrument.

8. Low Public Participation and Trust

Another significant inhibiting factor is the low level of public participation and trust in digital identity services. Limited public outreach, insufficient understanding of IKD benefits, and concerns regarding personal data security hinder widespread adoption of IKD among citizens.

From an international e-government perspective, public trust is a fundamental prerequisite for the success of digital government services. Without public trust, digital innovations risk being underutilized

and losing social legitimacy. Consequently, low public participation and trust constitute critical barriers to the effective strengthening of digital governance in IKD implementation.

CONCLUSION

Strengthening digital governance in the implementation of the Digital Population Identity (IKD) in Riau Province represents a key determinant in advancing the success of digital transformation in public administration. Based on the discussion presented in this study, it can be concluded that IKD implementation is not merely a process of adopting information technology, but rather a comprehensive and multidimensional reform of public governance. The success of IKD is highly dependent on the consistent and sustainable application of digital governance principles, including regulatory clarity, institutional capacity, human resource competence, system integration, data security, and public participation.

Overall, this study concludes that strengthening digital governance in the implementation of Digital Population Identity in Riau Province constitutes a strategic process that requires the integration of technological innovation with broader governance reform. Through a comprehensive, coordinated, and sustainable approach, IKD has the potential to become a critical instrument in realizing a modern, efficient, transparent public administration that is oriented toward improving the quality of population administration services and strengthening public trust in government institutions.

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