

Organizational readiness in local government for Smart City Program in Indonesia

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Abstract

Purpose – The Smart City Program is the Indonesian government's strategic initiative to promote digital transformation across society. However, its implementation at the local level remains suboptimal, primarily due to organizational and institutional readiness. This study examined the application of the organizational readiness model in local government to enhance the Program's effectiveness.

Design/methodology/approach – This study employed an exploratory qualitative approach and was conducted in Malang City, East Java, Indonesia. Data were collected from primary and secondary sources, including observations, in-depth interviews, focus group discussions (FGDs), literature review, government papers, official reports, and policies relevant to smart city efforts.

Findings – This study found that organizational readiness was a prerequisite for digital transformation and innovation in city governance, including the Smart City Program. However, some aspects of organizational readiness, such as innovation, resource, and strategic readiness, as well as a participatory and collaborative mindset, were not fully met. The results suggest that greater organizational maturity could enhance the impacts of the Program.

Originality/value – The originality of this study lies in its comprehensive analysis of how organizational readiness can optimize smart city initiatives.

Keywords Smart City, Organizational readiness, Local government, Institutions, Indonesia

Paper type Research article

Introduction

Cities are highly complex entities that offer both benefits and challenges. One of the ongoing challenges encountered by cities worldwide is rapid population growth. This issue has become a serious concern for policymakers and administrators, requiring inclusive, sustainable, and innovative solutions (Grossi *et al.*, 2020). Scholars have proposed the smart city program as one such solution (Meijer and Bolívar, 2016; Park and Yoo, 2023). Such program has been adopted by cities across both developed and developing countries, as it leverages information and communication technology, innovation, and smart governance to improve the quality of life (Ali, 2022; Sulistyaningsih *et al.*, 2024).

In Indonesia, the central government developed a Smart City policy through the Ministry of Communication and Informatics (Kominfo), now known as the Ministry of Communication and Digital (Komdigi). Malang City is one of the cities that has received assistance from Komdigi in preparing the Smart City Master Plan since 2021. The city possesses valuable



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assets, having been selected as one of the six regencies/cities with the best national Indonesian Digital Society Index (IMDI) score among 514 others, achieving 52.64 in 2024. Furthermore, in terms of the Electronic-Based Government System (SPBE) index, the Malang City Government achieved a “Satisfactory” rating with an index score of 4.24, ranking in the top 10 nationally in the 2024 Digital Government Award (DGA).

Despite the widespread adoption of the smart city program, implementation outcomes differ across local governments. Previous studies note that success or failure of the smart city implementation is determined by several factors, including bureaucracy, formal legal principles (Panjaitan *et al.*, 2023), and resources. These factors are categorized as organizational readiness and capabilities (Barrutia *et al.*, 2022; Guenduez and Mergel, 2022; Gullmark *et al.*, 2025). Many local governments lack adequate infrastructure and superstructure to support smart cities, primarily due to limited capability and readiness among policymakers (Guenduez and Mergel, 2022; Prakash, 2025). Therefore, strong organizational capacity is essential for implementing the Smart City Program equally across regional contexts.

While research on smart cities has grown in Indonesia, the concept of organizational readiness remains underexplored. This study aimed to address the gap by investigating the organizational readiness model in implementing the Smart City Program in Malang City. The study was guided by the following questions:

RQ1. What is organizational readiness for Smart City implementation?

RQ2. What are the challenges in Smart City implementation in Malang City?

The results were expected to guide other regions with similar characteristics and challenges in supporting smart city implementation in Indonesia and globally.

Smart city in Indonesia

The concept of “smart city” as a framework for developing urban environments has been widely discussed by governments, the private sector, and academics. This urban development model is believed to contribute numerous benefits to modern society (Lim *et al.*, 2024). Many scholars define a smart city as urban governance that prioritizes connectivity between government and citizens through the use of ICT, innovation, big data, AI, and IoT (Internet of Things) to improve resident’s quality of life (Anthony Jnr *et al.*, 2021; Park and Yoo, 2023; Yigitcanlar, 2015).

The smart city agenda has gained significant attention in Indonesia over the past decade. The capital, Jakarta, initiated the Smart City Program in 2014, followed by other major cities such as Bandung, Surabaya, Semarang, Makassar, and Yogyakarta (Aisyah *et al.*, 2024; Hardi *et al.*, 2025; Martinez and Masron, 2020; Miao *et al.*, 2024). The Program primarily aims at improving the community’s sustainability and strengthening digital transformation to enhance public service efficiency through data-driven governance (Kamil *et al.*, 2025; Rachmawati and Rohmah, 2025). Smart city also can improve environmental quality (Utami and Antoni, 2022).

At the national level, the Smart City Program was launched in 2017 as the “Movement toward 100 Smart Cities” and has been continuously refined to date. Komdigi has designated 251 regencies/cities for smart city development from 2017 to 2024. This Program provides opportunities for regencies/cities to develop smart cities based on their unique characteristics and potential. However, according to the Smart City Index 2024 released by the International Institute for Management Development (IMD), three Indonesian cities (Jakarta, Medan, and Makassar) were ranked at the lower tier, 103rd, 112th, and 114th out of 142 cities globally. These findings reflect ongoing efforts to strengthen urban digital governance and indicate that only a few cities have seriously pursued and successfully implemented smart city initiatives.

Conceptually, a smart city in Indonesia comprises six dimensions: smart governance, branding, economy, society, living, and environment, as illustrated in Figure 1.

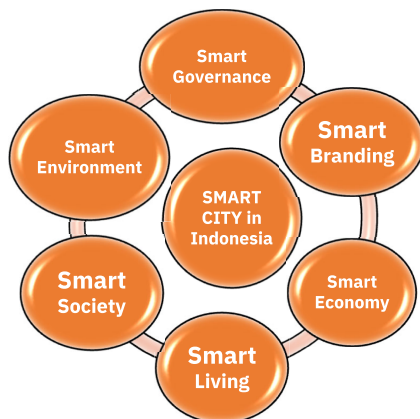


Figure 1. Six Dimensions of Smart City in Indonesia. Source: [Ministry of Communication and Digital \(2017\)](#)

Generally, smart city implementation is examined through various perspectives, including development planning ([Pratama, 2018](#); [Rachmawati and Rohmah, 2025](#)), city resilience during crises ([Pratama et al., 2023](#)), inclusiveness ([Agustiyara et al., 2024](#)), environment and renewable energy ([Mekhum, 2020](#); [Suryawan et al., 2024](#)), and the new national capital development ([Rachmawati et al., 2021](#)). Some studies focused on technological innovations, policy outcomes, and implementation challenges, but how organizational readiness within local governments shapes the implementation of smart city program remained unexplored. Studies argue that the implementation of the Smart City Program in Indonesia is suboptimal because organizational readiness has not been identified adequately. This gap is significant because digital transformation in the public sector depends not only on technology adoption but also on bureaucratic structure, resource alignment, and organizational strategy. This study is expected to contribute theoretically to enhancing the success of the Smart City Program. In practice, it is hoped to guide other policymakers in preparing the program by assessing the organization's readiness within the government.

Organizational readiness for smart city

Smart city implementation is not merely a technological transformation but an organizational one. The success of a smart city depends on the government's readiness to mobilize resources, coordinate actors, support innovation, and align strategic objectives ([Kaiser, 2024](#)). Likewise, local governments need to effectively communicate the program to the public, including how they are organized under a unified smart city vision ([Prakash, 2025](#)). When an organization's readiness for change is stronger, the potential for innovation to emerge and succeed is also greater.

According to [Guenduez and Mergel \(2022\)](#), organizational readiness is the ability of a public organization to possess the necessary characteristics to facilitate and encourage change and innovation. This involves understanding the fundamental concepts of digital innovation and its relationship to smart city development. In a smart city, cross-sector collaboration, beyond government and community involvement, is necessary, as it involves all aspects of urban life ([Ajoudanian and Aboutalebi, 2025](#); [Gil-Garcia et al., 2016](#); [Guenduez, 2020](#)). Overall, this factor is crucial for successfully implementing smart city strategies.

All organizations with a change action plan should have strategic organizational readiness, including a clear vision, mission, objectives, action plans, resource management, and risk mitigation ([Guenduez et al., 2024](#)). As summarized from various literature, organizational readiness includes resource readiness, with a particular focus on financial, human, and

technical resources, cultural readiness, strategic readiness, Information and Technology (IT) readiness, and managerial attitudes toward change (Barham and Daim, 2020; Lokuge *et al.*, 2019). Meanwhile, Gil-Garcia *et al.* (2016) argued that a smart city requires innovation in management, policy, and technology. In Indonesia's smart city, an organization must have digital maturity and service interoperability aspects (Kurniawan *et al.*, 2025). This prerequisite is often neglected. As a result, the Smart City Program is only good at the idea (vision) level, but less optimal at technical level.

In the public administration literature, a smart city operates optimally when the government achieves organizational readiness. It serves as a game-changer at the local level by guiding local governments in ensuring the success of the smart city program. Therefore, this research follows the indicators of organizational readiness by Guenduez and Mergel (2022), which consist of: (1) Innovation readiness, reflecting openness to digital experimentation and administrative reform; (2) Resource readiness, referring to financial, human, and technological capacity; (3) Strategic readiness, including vision clarity, planning integration, and coordination mechanisms; and (4) Participatory and collaborative mindset, emphasizing cross-unit and cross-sector cooperation. These dimensions are consistent with digital-government maturity perspectives, which focus on interoperability, data integration, and organizational alignment rather than on simple application development (Lnenicka and Saxena, 2021).

Methods

This study was conducted between October 2024 and August 2025. It employed an exploratory qualitative method (Creswell and Creswell, 2022) to comprehensively examine organizational readiness in implementing a smart city in Malang. This method was chosen because it provides an in-depth analysis of the phenomena and subject matter. Malang City was selected because it is an urban area with significant appeal from tourism and the education sector. Thus, urban problems in the city are more complex and require closer investigation. Furthermore, Malang is one of the cities in Indonesia appointed by Komdigi to develop a smart city. Politically, the Mayor had a strong background in governance and urban development, including digital transformation and smart-city issues.

Data were collected from both primary and secondary sources. Primary data were specifically obtained through observation, in-depth interviews, and focus group discussions (FGDs). Three key informants were interviewed using purposive selection. Two FGDs were conducted involving a total of 20 participants. The FGDs were conducted with representatives from all Regional Apparatus Organizations (OPDs) in Malang City involved in smart city implementation. All participants provided informed consent to be included in the research reports, including this article, with their identities kept anonymous. Meanwhile, secondary data were collected through a literature review of credible scientific articles published in internationally-indexed sources such as Emerald Insight, Sage, SpringerLink, ScienceDirect, Taylor & Francis, and Wiley. Official government documents, reports, and policies relevant to the Smart City Program in Malang were also utilized. The data were subsequently analyzed using NVivo 14 Plus, followed by content analysis using the world-cloud feature. To interpret various data from the analysis, the study used indicators derived from Guenduez and Mergel (2022), as detailed in Table 1. Finally, an exploratory synthesis and mutual validation were conducted to present the results.

Results

Innovation readiness

The Malang City Government has fostered a work culture more open to the use of technology and digital innovation at the organizational level. Personnel administration, tax payments, public complaints, and public facility rentals are examples of services being digitized through

Table 1. Indicators, Key Proofs, and Policy Implications

Indicators	Key Proofs	Policy Implications
Innovation readiness	Official government report, observations, and in-depth interviews	Strengthening a culture of innovation both individually and institutionally
Resource readiness	Official government report, FGD, and in-depth interviews	Governing all resources includes administrative resources, financial budgets, and digital infrastructure.
Participatory and collaborative mindset	In-depth interviews and FGD	Perspective of collaborative and reducing a “silo mentality”.
Strategic Readiness	Official government report, FGD	Strategic vision and impact on the improvement of the quality of life in communities.

Source: By authors

various applications. Based on an interview with one of the heads of Malang City Communications and Informatics Office:

... the services provided by Malang City government to the public through digital means such as websites and other applications make things easier, more practical, and save time for the public. Informant A (11/19/2024).

Based on the Malang Smart City Masterplan 2022-2031, all OPDs in Malang City have been involved in developing digital services across various dimensions of the smart city. For instance, eight OPDs contributed to the smart governance dimension, nine to smart branding, nine to smart economy, eight to smart living, nine to smart society, and six to smart environment. Some OPDs were even involved in more than one dimension. In addition to changes in work behavior, an innovation ecosystem had begun to take shape through the development of various service applications. According to the Malang Smart City timeline, 42 public service applications and 25 internal government applications had been developed across OPDs. These applications were designed to meet sectoral needs within each OPD. However, not all of these applications were interconnected or integrated into a single system. As a result, data synchronization and information flow between OPDs were still less effective. Therefore, Malang Communications and Informatics Agency (Diskominfo) had developed the Malang Mbois application. The web applications were designed as public service dashboards that display information from OPDs that have agreed to integrate their data.

Resource readiness

Resource readiness was one of the main foundations of smart city development in Malang. In this context, three main components support the Smart City Program: human resources (HR) capability, budget support, and digital infrastructure. In terms of HR, Malang City Government currently has 6,599 employees, most of whom are in the productive age range (25-50 years old). However, only 58 employees had an educational background in information technology, spread across various OPDs:

In terms of numbers, it is actually relative. Over the past few years, we have recruited skilled personnel in technology, including website and platform operators. Although their status is contract workers. Informant A (02/11/2025).

As the primary agency, Komdigi was responsible for managing information technology, with 95 personnel (49 civil servants and 46 non-civil servants), and covering functional positions such as application developers, data managers, and system administrators. This differed from other OPDs, where digital system management was still handled by administrative staff

without specialized technical backgrounds. This situation created a capacity gap between OPDs, slowing the widespread adoption of technology across the government.

Malang City Government allocated a significant budget for digitalization development across all smart city dimensions to support the program implementation. The total identified budget was estimated at approximately IDR 336 billion, as summarized in [Table 2](#).

Digital infrastructure was also an essential component of smart city implementation. By 2024, Malang City Government would have provided 552 public Wi-Fi hotspots across government offices, markets, community health centers, city parks, and neighborhood units (RW). The main internet capacity reached 1 Gbps, supported by a backup and dedicated network for office blocks, public service malls, and a Metro Ethernet network. Furthermore, a 14-terabyte fiber-optic backbone had been built in collaboration with operators such as IM3 (Indosat Multimedia Mobile) and Telkom to provide 561 base transceiver stations (BTS) supporting the internet network. Other infrastructure, such as 346 CCTV (Closed-Circuit Television) cameras, 15 ATCS (Area Traffic Control System) points, and five electronic parking points, had actively supported the city management system and public services. On the application side, more than 42 public digital services and 25 internal government applications were available, including integrated platforms such as Malang Mbois.

Participatory and collaborative mindset

The implementation collaborative and participatory mindset remained unevenly distributed across all dimensions of the smart city. Coordination between OPDs had been predominantly sectoral and administrative. Cross-sector collaboration mechanisms, whether in the form of joint forums or cross-OPDs teams, had not been systematically and permanently established.

Table 2. Malang Smart City Program Budget Estimate (2021-2031)

Smart City Dimensions	Smart City Program*	Related OPD*	Budget Estimate
Smart Governance	SI APEL, Integrated Regional Tax System, SIMBADA, SIMBAHE, Mayor’s Dashboard Program and Smart City Application, SIZOL, Malang One Data, JDIH, and Joint Ducting	Dispendukcapil, BAPENDA, BKAD, Disnaker PMPTSP, Diskominfo, and Legal Department	± IDR 65.4 billion
Smart Branding	Malang Sustainable Tourism, Malang Heritage Tourism, and Malang Creative	Disporapar, Diskopindag, and Disnaker PMPTSP	± IDR 14 billion
Smart Economy	Food Diversification, Employment Services, Traditional Market Revitalization, Micro-Business Assistance and Strengthening, and Social Assistance Information System Services	Dipangtan, Disnaker PMPTSP, Diskopindag, Dinsos, DP3AP2KB, and Dinkes	± IDR 20.2 billion
Smart Living	PAK SMART, Stunting Prevention, e-JKN, Smart Traffic Lights, E-Parking, RTTIC	DPUPRPKP, Dinkes, DP3AP2KB, Dishub, andDiskominfo	± IDR 84.5 billion
Smart Society	Ngalam 112, Cultivating a Love of Reading, Library Development, Preservation and Management of Cultural Heritage, and Disaster Prevention and Preparedness Services	Diskominfo, DispuSSIPda, Dikbud, DP3AP2KB, Satpol PP, and BPBD	± IDR 7.6 billion
Smart Environment	Green Open Space Management, SIPALDI, Waste and B3 Waste Management, Final Waste Management, and Fecal Waste Reuse	DLH, Perumda, and DPUPRPKP	± IDR 348.2 billion

*List of Abbreviations in the Appendix (refer [Supplementary material](#))

Source: Authors analysis adopted from the Master Plan of Malang Smart City

Each OPD generally developed digital programs based on the respective areas of expertise, without prior dialogue or joint planning between agencies.

... the implementation of smart city comprehensively in all aspects of urban life cannot be done individually by relying solely on the role of the Diskominfo (Komdigi). There needs to be strong and intensive collaboration. FGD 1 (12/07/2025).

The absence of a structural collaboration mechanism often led to public service applications developing in isolation. Applications from different OPDs often served similar functions, such as public complaint services or basic service information. This led to poor system integration and data interoperability across applications. Based on the Smart City Evaluation Support Data as shown in [Table 3](#), six collaborative programs reflected synergy between OPDs and external partners, including the private and public sectors.

The bottom-up strategy in the Malang City Government remains in its early stages. Although several OPDs had engaged in cross-sectoral discussions, digital program development was still largely driven by internal initiatives in each OPD based on its respective areas of work. This resulted in digital innovation ideas emerging primarily from upper levels, without a thorough process of gathering the needs or aspirations of service implementers or users.

Strategic readiness

Malang City Government's readiness to develop a smart city was reflected in the clarity of its vision and policy direction, as formally outlined in the Malang Smart City Master Plan 2022-2031. The vision for smart city development was explicitly stated as 'Realizing Malang as an Innovative Smart City' which the current Mayor, Wahyu Hidayat, interprets as '*Menuju Malang Mbois dan Berkelas/Toward Excellent and Classy Malang*'. The roadmap of Malang City is presented in [Figure 2](#). This vision served as the foundation for a six-dimensional, interconnected smart city development framework comprising governance, economy, social life, environment, branding, and community development.

The six dimensions were further detailed in strategic missions, such as strengthening technology-based governance, developing the creative and digital economy, improving community quality of life, ensuring sustainable environmental management, and promoting a distinct city identity. These strategic directions were not only conceptual but also formally embedded within the city's policy framework, as highlighted in the following interview:

Table 3. Collaboration of Malang Smart City Program

No	Smart City Dimensions	Collaborator*	Program
1.	Smart Governance	Dispendukcapil and Diskominfo	SI APEL application integration
2.	Smart Branding	OPDs, Pokdarwis, and the community	2023 Tourism Village Award assessment collaboration
3.	Smart Economy	District Attorney's Office, Legal Metrology Unit, and Diskopindag	Legal metrology socialization in trade (Sepasar Pedas Program)
4.	Smart Living	Dispangan and Health Service	Food education and stunting prevention program
5.	Smart Society	Social Services and BLK Singosari	Vocational skills training for social welfare recipients
6.	Smart Environment	Universitas Muhammadiyah Malang and Malang City Government	Ijen Road revitalization program

*List of Abbreviations in the Appendix (refer [Supplementary material](#))

Source: By authors

Roadmap of Malang Smart City



Figure 2. Roadmap of Malang Smart City. Source: By authors

... the vision and mission statements were not merely planning documents but had been integrated into official regional policies, such as the Malang City Medium-Term Development Plan (RPJMD) for 2018–2023 and the Smart City Action Plan. FGD 2 (06/07/2025).

The government’s commitment was also reflected in various derivative policies, including Malang Mayor Regulation Number 43 of 2020 on the Malang Smart City Master Plan 2020–2025, which serves as the legal basis for its implementation. Furthermore, the government had conducted four cross-regional discussions to determine the direction of smart city development. These forums served not only as coordination platforms but also as a means of aligning strategies and program priorities across sectors.

From a leadership perspective, the Mayor emphasized that smart city development was not merely about digitalization but also about increasing the capacity and integration of public services. This reflected a vision oriented toward building an adaptive and collaborative government system. The policy direction outlined in the Malang Smart City Master Plan reinforced this by strategically focusing on strengthening digital infrastructure, improving data integration, and developing integrated public services.

Discussion

Main organizational readiness for smart city

The finding indicates that Malang has established a clear strategic vision for smart city development. It supports previous studies stating that a clear perspective on the project’s mission and vision will generate real value for the organization (Barham and Daim, 2020; Guenduez and Mergel, 2022). The findings also indicate that the Malang City Government has made significant progress in organizational readiness to implement a smart city, especially in strategic planning and technology infrastructure. However, progress is uneven across OPDs (Figure 3), especially in human resource capacity and cross-sector collaboration.

Digital initiatives have begun to emerge from work units closely connected to public services in the OPDs of Malang City. Applications for population administration, tax payments, and public complaint information are being developed, with some even being developed independently by OPDs. Therefore, technology adoption has become part of the bureaucracy’s daily routine in adapting to changing urban complexities (Appio et al., 2019).



Figure 3. Aspects of Organizational Readiness of the Smart City Program in Malang City. Source: By authors

Some units have special technical teams, while others still rely significantly on support from Komdigi. This is slightly different from the implementation of smart cities in Yogyakarta and Makassar, where cross-sector collaboration and interoperability have emerged as drivers of innovation (Hardi *et al.*, 2025).

Investment in digital infrastructure and technology-based public services is already quite substantial in Malang. As explained by Lokuge *et al.* (2019) and Meijer *et al.* (2016), the Smart City Program required substantial investment in digital infrastructure and technology-based public services. Despite this significant investment, employees' capabilities as smart city administrators should be considered (Guenduez and Mergel, 2022). Only a small proportion of employees have an information technology background and possess innovation skills, even though creativity and innovation are essential elements of human capabilities (Gil-Garcia *et al.*, 2016).

In a coordinated manner, the Malang City government has structured smart city development plans, as evidenced by the four smart city discussion forums held to develop the master plan. However, these forums are insufficient to foster active participation from all stakeholders in the city's digital planning process. A smart city should be promoted as a collaborative platform that prioritizes public values not only during the planning stage but in the entire process, typically benefiting the community (Barrutia *et al.*, 2022). According to Prakash (2025), a smart city is a cross-collaborative paradigm whose management is highly challenging.

The grand vision of making Malang an innovative smart city has been outlined in the master plan and aligned with other regional planning documents. This vision transcends the normative level and has been translated into a strategic mission. Vision, mission, and strategic planning are essential frameworks for a city's digital transformation, particularly in a smart city program (Guenduez and Mergel, 2022; Hu and Zheng, 2021; Lokuge *et al.*, 2019). However, reflecting on the practices of other Indonesian cities, such as Jakarta (Martinez and Masron, 2020), the institutional structure in Malang City reflects similar challenges and organizational readiness to those faced by other local governments in Indonesia when implementing smart cities. For example, Jakarta has established a dedicated unit, Jakarta Smart City, operating directly under the Jakarta Provincial Communication, Informatics, and Statistics Office. This unit is specifically tasked with managing the planning, development, and evaluation of all aspects of digital government services.

In Malang City, the Smart City management is currently handled by Komdigi, under the direct supervision of the Mayor. Although this arrangement may offer advantages in terms of political will, it also carries potential drawbacks, including political interference and shifting priorities (Prakash, 2025). Compared to other cities in Indonesia, the current Mayor of Malang City has a strong interest in digital transformation, including smart cities. This is proven by the provision of Malang Mbois as a public service dashboard and by the strategic vision contained

in several planning documents. Therefore, the next crucial step is to establish a cross-sectoral institutional structure with the authority and resources to coordinate the entire smart city agenda in Malang, free from political influence. This should not merely be a technical team or discussion forum, but a functional institution capable of strategically and sustainably bridging the planning, implementation, and evaluation of transformation policies.

The challenges of organizational readiness

Malang City Government has shown a strong commitment to developing various digital initiatives in smart city implementation. However, several key challenges hinder the organizational readiness to function optimally. As shown in Figure 4, these challenges relate not only to technical aspects but also to institutional dimensions, budget, team sustainability, and the interconnectedness of service systems.

From a budgetary perspective, smart city development requires significant and sustainable funding. In the 2024 fiscal year, for example, the government allocated more than IDR 581 billion, or approximately 22.17 percent of the total regional budget (APBD), to support the implementation of the Smart City Program. However, of this total, only approximately IDR 110 billion was actually allocated for direct ICT expenditures, such as computers, networks, and information systems across Diskominfo and 27 other OPDs. Budget allocation can be a classic problem in any public organization. This is similar to the allocation of the Smart City Program in Songdo (South Korea), Masdar (Abu Dhabi), and Gujarat (India) (Desouza *et al.*, 2020). To address budgetary issues, the Smart City Program can utilize a public-private partnership mechanism, with several proposed models (Barrutia *et al.*, 2022).

The interoperability and integration of public service systems are equally important challenges. With the large number of applications initiated by each OPD, Komdigi faces technical integration challenges, specifically when older application versions are incompatible with the new system. Furthermore, public service application development can be handled by external vendors (Roziqin *et al.*, 2026). Interoperability and integration of public service applications are classic issues consistently encountered in the development of smart cities (Hardi *et al.*, 2025; Nukpezah *et al.*, 2025). Therefore, the organizational framework for implementing technology-based innovation should be strengthened through collaborative and integrative work throughout the planning stage.

From a human resources perspective, team changes or employee transfers are common in local government governance. A smart city program requires sustainable technical capabilities



Figure 4. The Challenges of Organizational Readiness for Smart City Practice. Source: By authors

to interpret strategic planning (Guenduez and Mergel, 2022). However, in practice, the team structure frequently experiences rotations or transfers. This turnover not only slows implementation but also leads to the loss of institutional memory, which is crucial for maintaining program direction and consistency.

Transfers make program adjustments more time-consuming because the new team needs to re-understand the previously formulated smart city vision, mission, and strategy. Furthermore, program sustainability is often hampered by leadership or bureaucratic changes, which can lead to shifts in policy direction and priorities. Without a strong and sustainable framework, the implementation of these digital initiatives is vulnerable to interruption (Park and Yoo, 2023).

The expected results of various digital innovations in public services have not been fully achieved. Although many applications are available, public participation remains low. Most citizens still prefer using conventional services over app-based. This shows that digital literacy remains unevenly distributed, service information is not well conveyed, and public trust in digital systems remains limited.

These findings reinforce the view that organizational readiness for smart city implementation is not only a technical matter but also an institutional process involving leadership stability, cross-sector collaboration, and organizational capacity for smart city management (Guenduez *et al.*, 2024). It is supported by the content analysis using word clouds in Figure 5. Therefore, Malang could emulate Jakarta, which already has a dedicated smart city unit specifically focused on implementation. Establishing a similar institution in Malang could serve as a long-term solution to ensure that smart city development corresponds to the needs of the local community.

Conclusion

This study revealed that Malang City Government's organizational readiness to support the Smart City Program remained insufficient across all assessed indicators. The findings highlight several critical areas that require policymakers' attention, particularly resource readiness and the need to foster a more participatory and collaborative mindset. Key challenges included imbalances in human resource capacity, lack of system and data integration across OPDs, and weak cross-sectoral coordination. Furthermore, no consistent human resource management mechanism existed to ensure program continuity, especially during employee transfers or leadership changes. Collaborative and participatory work

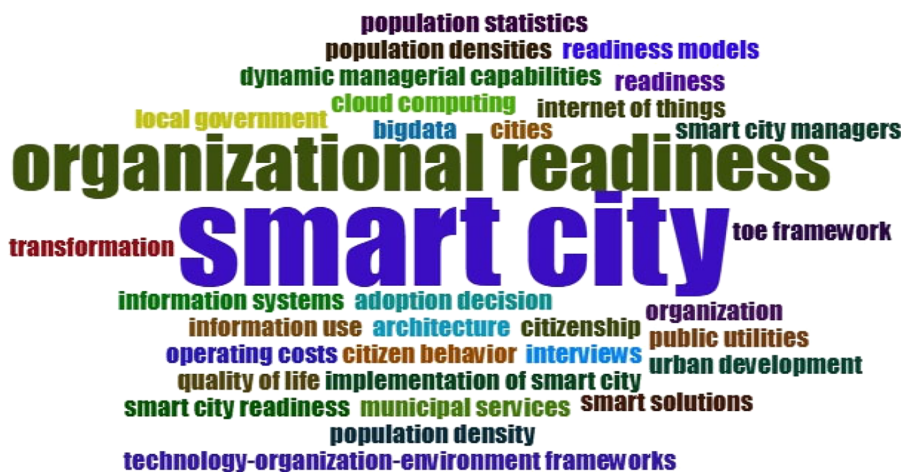


Figure 5. Word cloud of organizational readiness of the Smart City Program. Source: By authors

patterns were also limited by the absence of a regular cross-OPD forum and a dedicated organizational unit with full authority over smart city development. Consequently, the implementation of digital programs that should be interconnected remained fragmented.

Malang City Government needed to strengthen its organizational structure and internal governance. This could be achieved by establishing a dedicated smart city unit or institution focused on integrating digital programs across sectors, standardizing systems, and fostering an innovation ecosystem based on OPD collaboration. With consistent institutional arrangements and effective governance of innovative resources, the Smart City Program could become a transformative step in urban governance. Conceptually and practically, this study contributed to the discourse on smart city implementation in Indonesia, particularly how the regional governments prepare organizational instruments to adopt technology and innovation. A comprehensive assessment of government readiness can potentially increase the success of smart city implementation at the regional level.

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Supplementary material

The supplementary material for this article can be found online.

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