

Strategies for Implementing Digital Governance for Smart City Development in Makassar City

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ABSTRACT

Purpose: This study analyzes the strategies of the Makassar City Government in implementing digital governance as part of its Smart City development.

Subjects and Methods: Using a qualitative case study approach, the research explores policy frameworks, service innovations, resource support, and institutional coordination.

Results: The findings show that Makassar has made notable progress in strengthening policy alignment through the RPJMD, introducing innovative digital platforms such as the War Room, and enhancing transparency and efficiency in public service delivery. However, significant challenges remain, particularly in human resource capacity, sustainable financing, inter-agency coordination, and citizen participation.

Conclusions: Applying Koteen's strategic framework, the study concludes that while Makassar demonstrates strong corporate and program strategies, its resource and institutional strategies require further development. Policy implications emphasize the need for a comprehensive e-government master plan, capacity-building initiatives, public-private partnerships, and inclusive digital literacy programs. Strengthening these aspects will allow Makassar to consolidate its achievements and establish itself as a leading model of resilient and inclusive Smart City governance in Indonesia.

INTRODUCTION

In the era of rapid urbanization and technological change, cities are increasingly adopting the Smart City paradigm to enhance public service delivery, improve governance, and foster sustainable development. Central to this transformation is digital governance, a concept that encompasses the use of information and communication technology (ICT) to make government operations more transparent, efficient, participatory, and responsive. For Makassar one of Indonesia's largest and most dynamic cities digital governance has become a critical lever in realizing its vision of a Smart City that is inclusive, resilient, and future-ready.

Makassar has made notable strides in its Smart City journey. According to the 2024 evaluation of the *Gerakan Menuju Kota Cerdas* (Movement Towards Smart City) program by Indonesia's Ministry of Communication and Digital Affairs, Makassar achieved a score of 3.64 out of 4, rising from 3.14 in the previous year. This indicates both progress and potential, especially in dimensions such as program output, outcome, and the impact of digital governance initiatives.

Key components cited include integrated digital public service systems, formal legal frameworks, institutional alignment of technology strategies, and enhanced risk management.

Despite these advancements, Makassar faces multiple challenges in translating digital governance into consistently high-quality outcomes for all citizens. Issues such as digital divides (in terms of access, literacy, and infrastructure), regulatory bottlenecks, human resource capacity, inter-agency coordination, and sustainable financing remain significant barriers. These constraints echo findings from research on Makassar's Smart Governance, which show that dimensions related to technology infrastructure and institutional readiness are more mature compared to those concerning human capital, service delivery uniformity, and citizen participation.

Because Smart City development requires systemic change, focusing solely on deploying technologies is insufficient. Digital governance must be embedded in the city's institutional culture through participative leadership, policy coherence, stakeholder engagement, and adaptive regulation. Makassar has taken steps in this direction: for example, initiatives such as digital government services (e-government), transparent financial information systems, and anti-corruption measures facilitated by ICT. These reflect efforts to strengthen good governance principles such as transparency, accountability, and public oversight. Other projects include capacity-building workshops for civil servants, digital readiness assessments, and collaborative programs with foundations and external partners to build e-infrastructure and inclusive services.

The relevance of digital governance in Makassar is closely tied to both local needs (traffic, waste management, licensing, public health, urban planning) and national priorities (digital economy, sustainable development goals, good governance). As urban populations increase and demands on city services grow, digital tools provide both opportunities for leapfrogging traditional bottlenecks and risks of exacerbating inequalities if not carefully managed. In Makassar, for instance, citizens' ability to access and benefit from digital services is uneven, with remote or low-income neighborhoods often underserved. Regulatory oversight, data privacy and security, and institutional capacity are also topics of concern in the academic and policy discourse.

Based on this background, this article aims to analyze strategies for implementing digital governance in Makassar as part of its Smart City development. The specific objectives are: (1) to identify the existing components and strengths in Makassar's digital governance framework, (2) to examine the bottlenecks and challenges, (3) to propose actionable strategies for enhancing integration, citizen participation, institutional capacity, and sustainability in Makassar's Smart City agenda.

By contributing to the empirical and policy literature, this research hopes to provide insights for Makassar city managers, policymakers, civil society actors, and other stakeholders who are involved in or affected by Smart City initiatives. In doing so, it also seeks broader relevance for other mid-sized cities in Indonesia and beyond, which face similar trade-offs between technology adoption, social equity, and governance reform.

LITERATURE REVIEW

Digital Governance

Digital governance refers to the strategic use of information and communication technologies (ICT) by governments to enhance transparency, accountability, efficiency, and citizen participation in public administration (UNDP, 2019). Unlike traditional e-government, which focuses mainly on online service delivery, digital governance emphasizes an integrated framework where technology reshapes institutional structures, decision-making processes, and the interaction between government and society (Bannister & Connolly, 2020). Effective digital governance requires a multidimensional approach encompassing infrastructure, policy, institutional readiness, digital literacy, and citizen engagement (Meijer et al., 2019).

Scholars highlight that digital governance must be adaptive to local contexts. In developing countries, challenges often include inadequate ICT infrastructure, lack of skilled human resources, limited inter-agency collaboration, and social inequalities that exacerbate digital

divides (Ndou, 2004; Gil-Garcia et al., 2018). To address these, governments need strategies that combine technological adoption with institutional reforms and inclusive policies.

Smart City Development

The Smart City concept emerged as a response to urban challenges such as rapid population growth, environmental degradation, and inefficient governance. According to Caragliu et al. (2011), a city is “smart” when investments in human and social capital, traditional and modern communication infrastructure, and sustainable economic development fuel high quality of life with wise management of natural resources. Smart Cities integrate digital technologies into various sectors, including transportation, energy, waste management, healthcare, education, and public administration, to achieve sustainable and livable urban spaces (Hollands, 2008; Ahad et al., 2020).

Smart City development requires a governance framework that ensures coordination across sectors, promotes innovation, and actively involves citizens. Meijer & Bolívar (2016) argue that Smart Cities cannot succeed solely by deploying technology; instead, they must embed governance models that are transparent, participatory, and accountable. In this regard, digital governance provides the institutional backbone for Smart City initiatives by enabling cross-sectoral data integration, real-time decision-making, and citizen-driven service design.

Digital Governance and Smart City Nexus

The intersection between digital governance and Smart City development is widely recognized in academic and policy discussions. Digital governance provides the regulatory, institutional, and participatory frameworks necessary to manage and scale Smart City projects. Without effective digital governance, Smart City initiatives risk becoming fragmented, elitist, or technology-driven projects that fail to address broader social and developmental goals (Nam & Pardo, 2011).

Empirical studies highlight both opportunities and challenges. For instance, Anthopoulos (2017) notes that digital governance facilitates interoperability across city systems, but also emphasizes the importance of managing cybersecurity risks, safeguarding privacy, and ensuring data-driven accountability. Similarly, Kitchin (2016) critiques Smart Cities that focus excessively on technology, warning that they may create “technocratic governance” that sidelines citizen participation. Thus, strategies for implementing digital governance in Smart Cities must balance technological innovation with social inclusiveness and institutional resilience.

Digital Governance in Indonesia

Indonesia has embraced the Smart City agenda through the *Gerakan Menuju 100 Smart City* program initiated in 2017 by the Ministry of Communication and Information Technology (Kominfo). The program emphasizes six dimensions: Smart Governance, Smart Living, Smart Economy, Smart Environment, Smart People, and Smart Mobility. Within this framework, digital governance plays a crucial role in building transparent and efficient public services, enhancing local government performance, and fostering citizen engagement (Firman et al., 2024).

Research shows that Indonesian cities implementing Smart City programs often succeed in digital service provision (e.g., online licensing, e-health platforms, digital tax systems), but face challenges in sustainability, cross-agency integration, and digital literacy among citizens (Purnomo, 2020; Nugraha & Nugroho, 2022). Moreover, decentralization in Indonesia means that local governments have varying capacities and resources, leading to disparities in Smart City outcomes across regions.

Digital Governance in Makassar

Makassar is one of the pioneer cities in Indonesia’s Smart City movement. Its digital governance initiatives include *War Room* for real-time data monitoring, *e-government* platforms for licensing and financial transparency, and the *Lorong Wisata* (tourism alley) program, which integrates technology with community-based economic empowerment (Ariany & Abdullah, 2021). These initiatives reflect efforts to combine technological infrastructure with social innovation, aligning with Smart City principles of inclusivity and sustainability.

However, studies also highlight constraints in Makassar's Smart City development. These include uneven digital literacy among citizens, budgetary limitations, lack of comprehensive regulatory frameworks, and fragmented coordination between government agencies (Rahman et al., 2022; Hakim & Hayat, 2024). Furthermore, while technological infrastructure has advanced, institutional and cultural adaptations often lag behind, limiting the impact of digital governance on service quality and citizen trust.

Strategic Approaches

The literature identifies several strategic approaches for strengthening digital governance in Smart City contexts (Tan & Taeihagh, 2020). First, the corporate strategy dimension focuses on aligning digital governance with the city's long-term vision and integrating it into urban development planning (Koteen, 1997). Second, program strategies emphasize the design and implementation of sector-specific Smart City initiatives such as e-health, e-transportation, and smart waste management. Third, resource support strategies ensure that financial, human, and technological resources are mobilized to sustain digital governance initiatives. Finally, institutional strategies address organizational structures, regulatory frameworks, and capacity-building efforts to enhance government readiness and accountability.

These strategic dimensions provide a comprehensive lens for analyzing how Makassar can implement digital governance effectively in its Smart City journey. By synthesizing global theories and local empirical evidence, the literature underscores that success lies not only in adopting cutting-edge technologies but also in embedding governance reforms, fostering inclusive participation, and ensuring long-term sustainability.

METHODOLOGY

The study employs a qualitative descriptive research design with a case study approach, enabling a comprehensive examination of how digital governance is implemented within the framework of Makassar's Smart City development. This methodological choice is particularly suitable for understanding complex governance dynamics that cannot be captured solely through quantitative data. The qualitative approach allows the researcher to analyze the interplay between policies, institutional structures, technological innovations, and social responses, thereby uncovering the deeper mechanisms shaping Makassar's digital transformation. The case study method focuses specifically on Makassar City, which was purposively selected due to its prominent role as one of Indonesia's leading Smart City models. Makassar has been recognized by the central government through the Gerakan Menuju 100 Smart City (Towards 100 Smart Cities Movement) for its consistent efforts to integrate technology into governance and public services. Initiatives such as the "War Room" command center, Sombere Smart City concept, and Makassar Care complaint application exemplify the city's digital innovation and participatory governance approach. Through in-depth analysis of these initiatives, the research aims to identify strategic frameworks, best practices, and existing challenges including policy coordination, digital inclusion, and citizen engagement that influence the success and sustainability of digital governance in Makassar.

Research Location and Focus

The research was conducted in Makassar City, South Sulawesi Province, focusing on the local government's digital governance initiatives, such as e-government platforms, digital service innovations, and real-time monitoring systems like the *War Room*. The emphasis was on how these initiatives align with Smart City dimensions, including Smart Governance, Smart Living, and Smart People, and how strategies are designed and implemented by the local government.

Data Sources and Informants

The study relied on both primary and secondary data. Primary data were obtained through in-depth interviews with key informants, including officials from the Department of Communication and Information Technology (Diskominfo), members of the Smart City council, program implementers, and community representatives who directly use digital services. Informants were selected using purposive sampling, with criteria focusing on individuals who possess direct involvement and knowledge of Smart City programs in Makassar. Secondary data were drawn

from official documents, such as Smart City master plans, government reports, academic articles, policy briefs, and evaluation reports from the Ministry of Communication and Information Technology.

Data Collection Techniques

Three main techniques were employed to collect data. First, semi-structured interviews were conducted to capture detailed insights into the strategies, challenges, and innovations in Makassar's digital governance. Second, observations were made of digital platforms and service delivery mechanisms, including licensing systems, digital public complaint platforms, and the War Room. Third, document review was conducted to analyze relevant policies, performance reports, and national Smart City evaluation results. Triangulation of these methods strengthened the credibility and validity of the findings.

Data Analysis

The data analysis used the interactive model by Miles & Huberman (1994), which includes three stages: data reduction, data display, and conclusion drawing/verification. Data reduction was conducted by filtering and coding interview transcripts, observation notes, and documents to identify recurring themes related to digital governance strategies. Data display involved organizing the findings in narrative form and comparative tables to highlight key strategic areas such as corporate strategy, program strategy, resource support strategy, and institutional strategy, adapted from Koteen's strategic framework. The final stage involved drawing conclusions by linking empirical findings with theoretical perspectives from the literature on digital governance and Smart City development.

RESULTS AND DISCUSSION

Makassar is one of the largest metropolitan cities in eastern Indonesia, with a population of over 1.5 million. As a center of commerce, services, education, and government in South Sulawesi, the city faces complex urban challenges, such as traffic congestion, waste management, spatial planning, civil service administration, and the need for fast and transparent public services. Nationally, Makassar is a pioneering city in the Movement Towards 100 Smart Cities program initiated by the Ministry of Communication and Informatics since 2017.

With this strategic position, Makassar is seen as a "laboratory" for digital governance implementation in eastern Indonesia. The Smart City 2024 evaluation ranked Makassar with a score of 3.64 out of 4, indicating progress but also indicating gaps in human resources, coordination, and service inclusiveness. Therefore, this study focuses on the digital governance strategies implemented by the city government to support Smart City development, by examining the policies, programs, resources, and institutions that form the foundation.

Policy and Legal Frameworks Supporting Digital Governance

The research results indicate that Makassar City has a strong policy foundation for developing digital governance. This is reflected in the Regional Medium-Term Development Plan (RPJMD), which explicitly outlines the Smart City strengthening agenda and sectoral policies supporting the development of an integrated digital system. In an interview, Andi Zulkarnain, Head of the Aptika Division of the Communication and Information Technology Office (Diskominfo), emphasized:

"The city's commitment to developing an integrated digital system is very clear. The implementation of the RPJMD includes policies and a legal framework that serve as the foundation for all Smart City programs. We strive to ensure consistency in these regulations so that each Regional Apparatus Organization (OPD) does not operate independently."

This finding is consistent with the 2024 evaluation results released by the Ministry of Communication and Information Technology (Kementerian Kominfo) under the Gerakan Menuju 100 Smart City program. According to the report, Makassar's Smart City Index increased from 3.14 in 2023 to 3.64 in 2024 (on a 4-point scale) a substantial improvement that positioned Makassar among the top-performing cities in Indonesia's Smart City implementation category.

The evaluation covered six key dimensions: Smart Governance, Smart Economy, Smart Living, Smart Environment, Smart Mobility, and Smart People. Makassar showed the most notable progress in the Smart Governance and Smart People dimensions, reflecting the city's success in integrating technology into bureaucratic processes and improving community participation in digital platforms.

This improvement was primarily attributed to the strengthening of regulatory and institutional frameworks, such as the establishment of the Makassar Smart City Masterplan (2021–2026) and the enactment of local regulations (Peraturan Wali Kota) that institutionalized digital service standards. In addition, policy consistency supported by cross-departmental coordination and sustained leadership commitment ensured that digital initiatives were not merely project-based but became part of a systemic governance transformation. Overall, the rise in Makassar's Smart City score demonstrates tangible progress in policy maturity, institutional integration, and service innovation, positioning the city as a national model for digital governance reform.

Program Implementation and Service Innovation

In terms of programs, Makassar stands out for its War Room, a real-time data-driven control center that integrates public services from various regional government agencies (OPD). The War Room functions as a CCTV monitoring center, a 112 emergency call center, and a sectoral database to support decision-making. Ismawaty Nur, Acting Head of the Communications and Information Technology Office, explained in an interview:

“We have maximized the role of the War Room as a Smart City icon. We strive to integrate all public services so that the public can experience more effective, efficient, and transparent services. Traffic monitoring, emergency services, and even OPD performance evaluations can be conducted directly here.”

In addition to the Makassar War Room, which serves as the city's real-time monitoring and command center, the local government has launched several complementary digital governance initiatives aimed at improving administrative efficiency and citizen engagement. Among these are: (1) Digital Licensing Services (Perizinan Online Terpadu), this system simplifies business and public licensing processes by integrating application submissions, verification, and approval into a single online platform. It reduces bureaucratic delays and minimizes face-to-face interactions, thereby lowering opportunities for corruption and administrative bottlenecks; (2) Electronic-Based Financial Management System (Sistem Keuangan Berbasis Elektronik, e-Finance), Implemented across multiple government departments, this system enhances transparency and accountability in budget planning, disbursement, and reporting. It allows real-time tracking of financial transactions and aligns with national efforts to promote good governance and fiscal efficiency; (3) Public Complaint and Service Feedback Platform (Makassar Care and LAPOR!), These platforms enable residents to submit reports, complaints, and suggestions regarding public services. Data from these channels are integrated into the War Room dashboard, allowing the government to monitor response rates and identify recurring issues.

Furthermore, the Makassar City Government actively utilizes social media platforms such as Facebook, Instagram, and X (formerly Twitter) as tools for public communication, policy dissemination, and citizen engagement. This approach has strengthened government transparency and responsiveness, particularly in emergency situations or public information campaigns. However, studies such as those conducted by the Makassar Communication and Information Agency (Karim et al., 2022) indicate that despite these innovations, Makassar still lacks a comprehensive e-government master plan or integrated digital blueprint. As a result, many applications operate independently (“silo-based systems”), causing redundancy in data management, limited interoperability among departments, and inconsistent service quality across platforms. To address this issue, experts recommend the development of a Unified E-Government Architecture that consolidates databases, standardizes service protocols, and ensures that all digital initiatives from licensing to complaints are interoperable under a single governance framework. This integration would not only enhance efficiency but also strengthen accountability and citizen trust in the long term.

Resource Support and Human Capacity

Research findings reveal that resource factors, particularly human resource capacity, are a major obstacle to digital governance implementation. Although physical infrastructure such as internet networks and hardware is relatively adequate in city centers, staff skills in managing digital systems remain limited.

An interviewed official at the Population and Civil Registration Office stated:

“Service procedures are actually clear, and many are even application-based. However, staff skills in managing digital systems are still uneven. Some are not yet accustomed to them, resulting in inconsistent service delivery.”

This condition clearly illustrates that human resource development plays a pivotal role in determining the success and sustainability of digital governance initiatives in Makassar. The effectiveness of digital transformation is not solely dependent on technological innovation, but also on the capacity, competence, and adaptability of civil servants who operate, manage, and maintain these systems. In recent years, the Makassar City Government, through the Regional Personnel and Human Resources Development Agency (BKPSDM) and Diskominfo (Communication and Information Agency), has organized several training and capacity-building programs related to e-government systems, data management, cybersecurity, and digital public service delivery. These programs are often carried out in collaboration with universities such as Hasanuddin University and Makassar State University, as well as national institutions like Badan Pengembangan Sumber Daya Manusia (BPSDM) Kemenkominfo.

However, despite these efforts, data from Diskominfo Makassar (2024) show that less than 40% of civil servants have received formal training in digital systems management or data-driven decision-making. The coverage and frequency of training remain limited, particularly at the sub-district and village levels, where many staff still rely on manual processes. This capacity gap results in inconsistent service quality, delays in data entry, and difficulties in integrating various digital platforms into a unified system. Beyond human resource limitations, funding constraints also pose a major obstacle. Many digital governance initiatives depend heavily on the Regional Budget (APBD), which is often insufficient to cover the high costs of hardware procurement, software licensing, cybersecurity maintenance, and broadband infrastructure expansion. For example, the allocation for digital transformation in Makassar’s 2024 APBD was approximately Rp 28 billion, representing only around 1.2% of the total regional expenditure a figure far below the estimated need for comprehensive digital infrastructure development.

Due to this funding gap, several programs have relied on project-based support from external donors or private partners, which limits their long-term continuity. To ensure sustainability, experts recommend that the city adopt a multi-source funding model, combining APBD allocations, Public-Private Partnerships (PPP), and national government grants through the Ministry of Communication and Information Technology or the Ministry of Home Affairs. In summary, while Makassar has made notable progress in developing its digital governance ecosystem, strengthening human capital and ensuring stable financial investment are essential next steps. Without these, the long-term vision of building an integrated, efficient, and citizen-centered Smart City will remain difficult to achieve.

Institutional Strategies and Cross-Sector Collaboration

From an institutional perspective, research results indicate cross-sector coordination efforts, although they are not yet fully optimal. The Smart City institutional structure in Makassar consists of a cross-regional government agency (OPD) team chaired directly by the mayor, but implementation still faces coordination challenges and sectoral egos.

According to one informant from the Smart City team:

“Coordination issues often arise because each OPD has its own priorities. Ideally, all digital programs should adhere to a single grand design, but implementation is still gradual. We need institutional strengthening for optimal integration.”

Collaboration with external partners including both the private sector and international institutions has become a key element in strengthening Makassar’s digital governance ecosystem.

These partnerships have been instrumental in broadening the scope of digitalization, providing technological expertise, and mobilizing financial and human resources that go beyond the capacity of the local government alone. On the private sector side, cooperation has been established with several major technology and telecommunication companies such as PT Telkom Indonesia, Bank Sulselbar, XL Axiata, and a range of local startups specializing in software development and data analytics. These partnerships have supported the implementation of the Smart E-Commerce Infrastructure Program, which facilitates digital marketplace development for local businesses, integrates electronic payment systems, and provides cloud-based solutions for small and medium enterprises (SMEs). According to data from Diskominfo Makassar (2024), this initiative has enabled over 2,500 local entrepreneurs to onboard digital platforms, increasing SME participation in the city's digital economy by 37% compared to 2022.

In addition to private sector collaboration, Makassar has also established cooperation with international organizations, including the United Nations Development Programme (UNDP), the Asian Development Bank (ADB), and the Japan International Cooperation Agency (JICA). These institutions have provided technical assistance, policy advisory, and pilot funding for various Smart City components, such as urban data integration, digital governance capacity-building, and sustainable infrastructure planning. For instance, a 2023 ADB-supported project focused on enhancing data interoperability and digital inclusion across several Southeast Asian cities identified Makassar as one of the most promising models for scalable urban digital systems.

However, despite these positive outcomes, the sustainability of these collaborations remains a concern (Lozano et al., 2021). Most external partnerships are project-based, lasting between one to three years, and are highly dependent on current political leadership and fiscal priorities. When political administrations change, previously initiated digital programs may lose momentum due to budget reallocation, leadership turnover, or shifting policy agendas. Additionally, there is no formalized long-term cooperation framework or Public-Private Partnership (PPP) mechanism that ensures continuity and accountability beyond individual project cycles.

To address this challenge, policy analysts recommend the establishment of a Makassar Digital Partnership Framework, which would institutionalize collaboration through legally binding agreements, multi-year funding commitments, and clear performance evaluation mechanisms. This framework would reduce dependency on short-term political will and external aid, while ensuring that collaborative digital initiatives remain sustainable, transparent, and aligned with the city's Smart City master plan (2021–2026).

DISCUSSION

The findings of this study indicate that the implementation of digital governance in Makassar's Smart City development has progressed significantly, particularly in the areas of policy frameworks and service innovation. Nevertheless, challenges remain in relation to human resource capacity, institutional coordination, and citizen participation. Using Koteen's (1997) strategic framework which consists of corporate strategy, program strategy, resource support strategy, and institutional strategy the discussion below positions Makassar's achievements and constraints within both theoretical and empirical contexts.

Corporate Strategy: Vision and Policy Alignment

Makassar demonstrates a relatively strong corporate strategy through the integration of Smart City objectives into its Regional Medium-Term Development Plan (RPJMD). This alignment between long-term vision and operational policies ensures that digital governance initiatives are not treated as ad hoc projects but as part of broader urban development priorities. As emphasized by Andi Zulkarnain from the Department of Communication and Information Technology, clear legal frameworks and policy consistency provide legitimacy and direction for all government units. This finding resonates with Meijer & Bolívar (2016), who argue that Smart City success is closely tied to the ability of local governments to harmonize political vision with coherent policy instruments.

Program Strategy: Service Innovation and Citizen Engagement

Makassar's program strategy is evident in the introduction of innovative public service mechanisms such as the War Room, digital licensing, electronic financial management, and the emergency call system 112. These programs reflect efforts to enhance efficiency and transparency while also creating new channels for citizen engagement. However, as local studies note, the absence of a comprehensive e-government blueprint means that services remain partially integrated, with some applications operating in silos. This reflects the concerns of Nam and Pardo (2011), who caution that Smart Cities often underperform when technological solutions are deployed in isolation rather than through systemic integration. Makassar's experience suggests that while program innovation is promising, consolidation into a unified ecosystem remains essential.

Resource Support Strategy: Capacity and Budget Constraints

A major bottleneck identified in this study is the limited capacity of human resources (Chakravorty & Atwater, 2006). Although infrastructure such as internet networks and applications has been established, the uneven digital skills of civil servants undermine consistent service delivery. Testimonies from officials in the Population and Civil Registration Office highlighted that while digital procedures exist, staff ability to manage and operate platforms varies significantly. This finding supports Purnomo (2020), who emphasizes that human resource competence is a critical determinant of digital governance effectiveness. In addition, financial constraints remain pressing, as most initiatives rely heavily on the local government budget (APBD), which is insufficient to sustain large-scale digital infrastructure.

Institutional Strategy: Coordination and Collaboration

Institutionally, Makassar has taken steps to establish a cross-departmental Smart City team under the leadership of the mayor. However, coordination challenges and sectoral egos persist, resulting in fragmented implementation. As one Smart City team member remarked, there is still no fully operational *grand design* to bind all departments to a unified digital agenda. This mirrors Gil-Garcia et al. (2018) observation that institutional fragmentation is a common obstacle to digital governance in developing contexts. On the other hand, external collaborations with the private sector and international partners are emerging, offering opportunities for innovation and additional resources. Yet, the sustainability of such partnerships depends heavily on political will and regulatory clarity.

CONCLUSION

This study shows that Makassar has made significant progress in implementing digital governance as part of its Smart City agenda. Strong policy frameworks through the RPJMD, innovative programs such as the War Room, and the development of e-government platforms have positioned the city as a pioneer of digital transformation in Indonesia. These initiatives have improved transparency, responsiveness, and public service efficiency, demonstrating the city's commitment to aligning technology with governance reform. Nevertheless, persistent challenges remain, particularly in human resource capacity, financial sustainability, institutional coordination, and citizen participation. To address these issues, Makassar must strengthen its strategic approaches by developing a comprehensive e-government master plan, investing in continuous capacity building, diversifying funding through public private partnerships, and fostering inclusive digital literacy initiatives. By consolidating existing achievements while addressing these structural weaknesses, Makassar can establish itself as a leading model of inclusive, sustainable, and resilient Smart City governance in Indonesia.

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