Digital Capacity Building Strategy of Local Government in Palopo City

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ABSTRACT

Purpose: *Digital transformation has become a key agenda in public sector reform, particularly at the local government level where public services are delivered directly to citizens. However, the effectiveness of digital initiatives is often constrained by limited digital capacity, including human resource readiness, institutional coordination, and technological integration. This study examines strategies for improving digital capacity within the local government of Palopo City.*

Subjects and Methods: *This study employs a qualitative descriptive approach. Data were collected through in-depth interviews with local government officials, document analysis of digital governance policies, and direct observation of digital system implementation. The research focuses on human resources, institutional arrangements, and technological infrastructure as key dimensions of digital capacity building. Data were analyzed thematically to identify patterns and strategic issues shaping digital transformation at the local level.*

Results: *The findings indicate that digital capacity building in Palopo City is progressing unevenly across government units. Basic digital skills are generally present, yet advanced competencies remain limited. Institutional support and leadership commitment vary, leading to fragmented implementation of digital initiatives. Although digital systems have been developed, limited integration and underutilization persist due to capacity and governance constraints.*

Conclusions: *The study concludes that strengthening digital capacity in local government requires a holistic and sustained strategy that integrates human resource development, institutional alignment, and technological governance. Digital transformation should be approached as an organizational learning process to ensure its contribution to effective and sustainable local governance.*

INTRODUCTION

Digital transformation has become an increasingly central agenda in public sector reform, reshaping how governments organize their internal processes and deliver services to citizens (Hofisi & Chigove, 2023; Shenkoya, 2023; Manda, 2022). Advances in information and communication technologies have encouraged public institutions to adopt digital systems with the expectation of improving efficiency, transparency, and responsiveness. However, the experience of many governments suggests that the success of digital transformation depends not only on the availability of technology, but also on the capacity of public organizations to adapt, learn, and govern digital change in a sustainable manner (Gasco-Hernandez et al., 2022; Sigurjonsson et al., 2024; David et al., 2023).

In recent years, scholars have emphasized that digital government initiatives often fall short of their intended outcomes due to limitations in human resources, institutional coordination, and governance structures. While investments in digital infrastructure continue to grow, disparities in digital skills and organizational readiness remain persistent, particularly at the local government level. This has led to a growing recognition that digital capacity building is a critical precondition for effective digital governance, especially in decentralized administrative systems where local governments play a central role in public service delivery (Wang et al., 2024; Setiawan et al., 2022; Schoeman & Chakwizira, 2023).

Within the context of developing and middle-income countries, local governments face distinct challenges in advancing digital transformation (Syed et al., 2023; Hakim & Hayat, 2024; Díaz-Arancibia et al., 2024). Limited resources, fragmented institutional arrangements, and varying levels of administrative capacity often constrain the implementation of digital initiatives. At the same time, local governments are increasingly expected to respond to citizen demands for accessible and high-quality public services through digital platforms. These pressures highlight the importance of understanding how digital capacity can be strengthened within local administrative contexts, rather than relying solely on nationally driven digital policies.

In Indonesia, digital transformation has been promoted as part of broader bureaucratic reform and public service modernization efforts (Wagola et al., 2023; Prayitno, 2023). Local governments are encouraged to adopt electronic based governance systems and digital public services as a means of enhancing accountability and efficiency. Despite these policy ambitions, the pace and quality of digital transformation vary considerably across regions. Differences in leadership commitment, institutional readiness, and human resource capacity contribute to uneven outcomes, suggesting that digital transformation at the local level remains a complex and contested process (Gasco-Hernandez et al., 2022; Weerakkody et al., 2016; Trenerry et al., 2021).

Palopo City represents a relevant case for examining these dynamics. As a medium sized local government, Palopo City has initiated various digital programs aimed at improving administrative processes and service delivery. However, like many local governments, it operates within constraints related to organizational capacity, coordination, and technological integration. Studying Palopo City therefore provides an opportunity to explore how digital capacity building strategies are formulated and implemented within a realistic local governance setting (Rahmayanti, 2024; Wiwi et al., 2024).

Despite the growing body of research on digital government, empirical studies that examine digital capacity building from an integrated perspective at the local level remain limited (Sharma et al., 2022; Atobishi et al., 2024; Durokifa et al., 2023). Much of the existing literature focuses either on technological adoption or on policy design, with less attention given to the everyday organizational practices and capacity challenges faced by local governments. This study seeks to address this gap by examining strategies for improving digital capacity within the Palopo City government through a qualitative descriptive approach.

The objective of this study is to analyze how digital capacity building is understood and pursued within the local government of Palopo City, and to identify key factors that shape its implementation. By focusing on human resources, institutional arrangements, and technological conditions, this research aims to contribute context sensitive insights to the broader discourse on digital governance and public sector transformation

METHODOLOGY

Research Design

This study adopts a qualitative descriptive research design to explore and understand strategies for strengthening digital capacity within the local government of Palopo City. A qualitative approach is considered the most appropriate, as digital capacity building is not merely a technical issue but is also closely related to organizational culture, leadership commitment, policy orientation, and the readiness of human resources. By prioritizing depth over numerical measurement, this design allows the research to capture the complexity of digital transformation as it unfolds in a local government context.

Research Site

The research is conducted in Palopo City, South Sulawesi, Indonesia. Palopo City represents an important case due to its ongoing efforts to integrate digital technologies into governance and public service delivery while simultaneously facing structural and resource limitations commonly experienced by medium-sized local governments. Focusing on this setting enables the study to examine digital capacity building within a realistic administrative environment where policy ambition, institutional capacity, and local conditions intersect.

Data Collection Techniques

Data collection is carried out through multiple qualitative techniques to ensure a comprehensive understanding of the phenomenon under study.

In-depth Interviews

Interviews serve as the primary data source, allowing the researcher to engage directly with key informants who are actively involved in digital governance initiatives. These informants include local government officials, policy planners, and technical staff responsible for information systems and digital services. The interviews are conducted in a semi-structured manner to provide flexibility for participants to share experiences, perceptions, and challenges related to digital capacity development in their own terms.

Document Analysis

To complement the interview data, document analysis is employed to examine official materials relevant to digital governance in Palopo City. These documents include local regulations, strategic plans, policy reports, and internal guidelines related to information technology and public service innovation. Reviewing these materials helps situate individual perspectives within the broader institutional and policy framework, while also revealing the extent to which digital capacity building has been formally articulated and prioritized by the local government.

Observation

Observation is conducted to gain firsthand insight into how digital systems are utilized in daily administrative and service processes. Through observation, the researcher is able to assess the practical application of digital tools, the interaction between officials and technology, and the alignment between policy intentions and actual implementation. This method provides contextual richness and helps bridge the gap between stated strategies and real-world practices.

Data Analysis

The data analysis process follows a thematic approach that emphasizes interpretation and meaning. Data from interviews, documents, and observations are carefully reviewed and organized through a process of data reduction and coding. Emerging themes related to digital skills, institutional readiness, leadership support, infrastructure, and inter-organizational coordination are identified and refined. These themes are then interpreted to construct a coherent narrative of digital capacity building strategies and the factors that shape their effectiveness within the local government.

Data Validation

To enhance the credibility and trustworthiness of the findings, data validation is conducted through triangulation. Insights obtained from different data sources are compared to ensure consistency and to capture diverse perspectives on the same issue. Member checking is also applied by sharing key interpretations with selected informants to confirm the accuracy of the researcher's understanding and to reduce potential bias.

RESULTS AND DISCUSSION

The results of this study indicate that digital capacity building within the Palopo City government is progressing through a gradual and uneven process. Digital transformation is not experienced uniformly across institutions but instead reflects differences in human resource readiness, organizational commitment, and technological conditions. Rather than being driven solely by the

availability of digital systems, capacity development is shaped by how government actors understand, adopt, and integrate digital practices into their daily administrative and service-related activities. Human resource capacity emerges as a foundational element in the digital transformation process. The findings reveal that most government employees possess basic digital literacy, particularly in relation to routine administrative tasks such as document processing and reporting. However, more advanced competencies related to data utilization, system integration, and digital innovation remain limited. Training programs have been implemented, yet they tend to emphasize technical operation rather than strategic digital thinking. As a result, digital tools are often treated as supportive instruments rather than as enablers of organizational change. Differences in adaptability are also evident, with younger staff generally showing greater openness to technological change compared to senior officials. These conditions are summarized in Table 1, which presents the current state of human resource digital capacity within the Palopo City government.

Table 1. Human Resource Digital Capacity in Palopo City Government

Dimension	Description of Findings	Current Condition
Digital literacy level	Understanding of basic digital tools is present among most staff	Moderate
Advanced digital skills	Limited ability in data analysis, system integration, and digital innovation	Low
Training implementation	Training programs exist but are irregular and mostly technical	Moderate
Adaptability to technology	Younger staff adapt faster compared to senior officials	Uneven

Beyond individual capacity, institutional and organizational factors play a decisive role in shaping digital development. The results show that leadership commitment significantly influences the success of digital initiatives at the agency level. Offices led by officials who actively encourage digital practices demonstrate better coordination and more consistent system use. However, this support is not evenly distributed across the local government. Although digital transformation is referenced in planning documents, the absence of an integrated governance framework results in fragmented implementation. Inter-agency coordination remains weak, and organizational culture in many units continues to favor conventional administrative routines over digital innovation. The institutional conditions affecting digital capacity building are outlined in Table 2.

Table 2. Institutional and Organizational Support for Digital Capacity Building

Aspect	Empirical Evidence	Assessment
Leadership commitment	Strong support from certain agency heads	Inconsistent
Policy alignment	Digital initiatives referenced in strategic documents	Present but not integrated
Inter agency coordinat	Limited coordination across departments	Weak
Organizational culture	Preference for conventional administrative procedures	Resistant to change

Technological infrastructure represents the third major dimension of the findings. The Palopo City government has developed various digital applications to support administrative functions and public services. However, these systems are largely designed and implemented independently, resulting in limited integration and interoperability. Observations indicate that several applications are underutilized, not due to technical failure, but because users lack confidence and sufficient support to fully adopt them. Dependence on external vendors further constrains internal learning and long-term system sustainability. Consequently, digital infrastructure development has not yet translated into optimal organizational performance. The condition of digital infrastructure and its utilization is presented in Table 3.

Table 3. Digital Infrastructure and System Utilization

Component	Observed Condition	Utilization Level

Digital applications	Multiple systems developed independently	Fragmented
System integration	Limited interoperability between platforms	Low
Technical support	Dependence on external vendors	Moderate
Daily usage	Systems used mainly for administrative reporting	Partial

These results demonstrate that digital capacity building in the Palopo City government is advancing, yet remains constrained by disparities in human resource capability, institutional coordination, and system integration. The findings suggest that strengthening digital capacity requires a more holistic strategy that simultaneously addresses skills development, organizational alignment, and sustainable technological infrastructure. These results provide a critical empirical basis for discussing strategic directions and policy implications for local government digital transformation. The findings of this study contribute to the growing body of literature on digital capacity building in local government by highlighting the interdependence between human resources, institutional governance, and technological systems. Rather than viewing digital transformation as a technical intervention, the results suggest that it is better understood as a socio organizational process shaped by learning, power relations, and administrative culture. This interpretation aligns with recent public administration scholarship that emphasizes the need to move beyond technology centric perspectives toward capacity oriented and governance sensitive approaches to digitalization.

Existing Digital Capacity Building Strategies in Palopo City

Human Resource Development and Digital Leadership Strategy

The digital capacity building strategy in Palopo City focuses on strengthening human resources through formal training programs implemented in the form of technical guidance (bimtek), application workshops, and socialization of SPBE policies. Based on document analysis and interviews, training is generally conducted when a new system is implemented or an application is updated. A technical official stated,

> *"Training is usually conducted when a new application is launched. Operators are called in for technical guidance so they can immediately run the system."*

This indicates that the training approach remains responsive to technical needs. Although training is routinely conducted, observations indicate that the material provided still focuses on operational aspects, such as the use of system features, data input, and administrative procedures. This approach does not fully address strategic digital literacy, data analysis, or change management. One administrative staff member stated,

> *"We are trained on how to use it, but not on how to utilize data for decision-making."*

This finding indicates that the capacity building strategy remains at a technical stage, not transformational. In the context of digital leadership, the commitment of regional leaders is a crucial factor in driving the digitalization agenda. Regional planning documents demonstrate the integration of digital transformation programs into development priorities. A structural official stated,

> *"The leadership always emphasizes the importance of improving the SPBE index and online-based services."*

This support is reflected in budget allocations and policies to accelerate the digitalization of public services. However, field observations indicate that digital leadership remains top-down and has not yet fully established an organizational culture that is adaptive to technology. Several informants acknowledged resistance at the operational level.

> *"Sometimes there are still those who feel that the new system actually adds more work,"* said one division head.

This shows that leadership strategies have driven structural change, but internalizing digital values in work culture remains a challenge.

Institutional Coordination and Governance Integration Strategy

The cross-OPD coordination strategy is implemented through technical meeting forums, SPBE coordination teams, and inter-work unit consultation mechanisms. Document analysis indicates the existence of a formal structure governing digital governance, including the division of roles between the information technology department and the OPDs using the system. A planning official explained,

> *"Each OPD still has its own application, but coordination is through the communications and informatics department."*

Despite the coordination structure in place, interviews revealed that system integration between OPDs is not yet fully optimized. Some applications still run separately without adequate data interoperability. A system operator stated,

> *"Our data isn't automatically connected to other OPDs, so we still often send it manually."*

This observation indicates that the coordination strategy remains at the administrative stage, not fully based on an integrated system architecture. Furthermore, there are efforts to harmonize policies through the development of standard operating procedures and technical guidelines for SPBE implementation. However, implementation at the work unit level shows varying levels of digital capacity and readiness. One informant stated,

> *"Some OPDs are already advanced, but others still rely heavily on manual methods."*

This indicates that the effectiveness of the coordination strategy is significantly influenced by internal capacity gaps. Overall, the digital governance strategy in Palopo has shown an integrative direction, but still faces challenges in system consolidation and process standardization. Technical fragmentation and differing levels of readiness among regional government agencies (OPDs) are factors hindering full integration. Therefore, the institutional strategy still requires strengthening in terms of interoperability, data integration, and consistent implementation of digital policies.

Infrastructure Strengthening and Vendor Dependency Reduction Strategy

In terms of infrastructure, the Palopo City Government has improved its internet network, procured hardware, and developed online services. Document analysis indicates a dedicated budget allocation for strengthening information systems and data security. A technical official stated,

> *"Almost all services now have online versions, although not all of them are integrated yet."*

This demonstrates a commitment to expanding digital access to public services. However, observations indicate that some systems remain standalone and not yet connected to a single, integrated platform. Limited server and storage capacity are also technical challenges acknowledged by informants.

> *"When traffic is high, the system sometimes slows down,"* said one IT staff member.

These findings indicate that the infrastructure strengthening strategy is still in the consolidation stage. Regarding vendor dependence, interviews revealed that initial information system development was largely handled by third parties. This dependence is particularly pronounced in the application design and maintenance stages. One informant stated,

> *"If there is a major error, we still have to call the vendor because not everything can be handled internally."*

This indicates that internal technical capacity remains limited. However, there are gradual efforts to reduce this dependence through knowledge transfer and internal technical training. Observations indicate that some regional government agencies (OPDs) are starting to be able to perform light maintenance independently. This strategy points to a more sustainable capacity-building path, although full independence in digital system development still requires more systematic investment in human resources and technical competency development.

Discussion

Based on empirical findings obtained through in-depth interviews, observations, and document analysis, digital capacity building in Palopo City cannot be understood as a single intervention, but rather as a multi-layered, interconnected process. Therefore, this study formulates an Integrated Digital Capacity Building Framework for Palopo City, consisting of four main layers: the Foundational Layer (Digital Literacy), the Institutional Layer (Governance Alignment), the Strategic Layer (Leadership & Learning), and the Structural Layer (System Integration). These four layers represent mutually reinforcing dimensions in forming a sustainable digital transformation ecosystem at the local government level.

Foundational Layer: Digital Literacy

The foundational layer in this framework is the digital literacy of civil servants. Findings indicate that most capacity building programs in Palopo still focus on technical-operational training. This is a crucial foundation, as without basic system competencies, digital transformation cannot be effective. Align with research from AbdulKareem & Oladimeji (2024) and Sharma et al. (2016) Digital literacy in this context includes the ability to use government applications, understand data flows, and operate online service systems. However, the research findings indicate that digital literacy still needs to be expanded beyond technical skills to analytical and strategic literacy. Civil servants need not only the ability to use systems but also to understand how data can be leveraged for decision-making, service improvement, and evidence-based policy planning. Therefore, the foundational layer should not stop at application training but should develop into comprehensive digital competency development. This layer is fundamental because weaknesses in basic literacy will directly impact the effectiveness of system integration and digital policy implementation. Therefore, continuous strengthening of digital literacy is a prerequisite for the success of subsequent layers.

Institutional Layer: Governance Alignment

The second layer is governance alignment. Findings indicate that cross-regional government agencies (OPD) coordination in Palopo has been implemented through formal mechanisms such as the SPBE team and technical forums. However, policy integration and system standardization still face challenges due to fragmentation and differences in readiness between work units. Governance alignment, in this framework, refers to consistency between the digital transformation vision, internal regulations, institutional role allocation, and monitoring and evaluation mechanisms. Digital transformation will not be effective if each OPD operates with its own systems and priorities without an integrated policy architecture (Anthony, 2021). This framework emphasizes that capacity building involves not only individuals but also institutional capacity. This means that policy harmonization, data interoperability, and consistent implementation are crucial components in strengthening local government digital resilience. Without institutional alignment, investments in training and infrastructure have the potential to result in a fragmented system.

Strategic Layer: Leadership & Learning

The strategic layer positions leadership and organizational learning as the primary drivers of digital transformation. Findings indicate that the support of regional leaders in Palopo has been a catalyst in driving the digitalization of public services. This commitment is reflected in policies, budget allocations, and encouragement to improve SPBE performance. However, effective digital leadership is not solely top-down but must also foster a culture of organizational learning (Rikkerink et al., 2016). Digital transformation is a dynamic process that requires continuous adaptation to changes in technology, regulations, and community needs. Therefore, capacity-building strategies need to include regular evaluation mechanisms, digital performance reflection, and opportunities for innovation for officials. Within this framework, leadership and learning serve as a bridge between policy and practice. Visionary leadership without a culture of learning will result in mere administrative compliance, rather than substantive transformation. Conversely, a culture of learning without strategic direction will lack focus and consistency.

Structural Layer: System Integration

The structural layer focuses on the integration of systems and technology infrastructure (Madni & Sievers, 2014). Findings indicate that Palopo has strengthened its network and developed online service applications, but still faces challenges in data integration and interoperability between regional government agencies (OPDs). Some systems remain standalone and dependent on external vendors. System integration in this framework encompasses not only technical connectivity but also alignment of data architecture, information security, and operational efficiency. System integration enables faster data flow, more accurate decision-making, and reduced duplication of administrative processes. Furthermore, reducing reliance on vendors is a crucial component of the structural layer. Strengthening internal technical capacity will enhance the digital independence of local governments and mitigate system sustainability risks. Thus, the structural layer is a concrete manifestation of the capacity building strengthened by the previous three layers.

Synthesis of the Integrative Framework

The four layers in the Integrated Digital Capacity Building Framework for Palopo City are interdependent and cannot stand alone. Digital literacy forms the foundation, governance alignment ensures institutional coordination, leadership and learning provide strategic direction, and system integration embodies structural transformation. This framework demonstrates that digital capacity building is not simply a technology project, but rather a comprehensive organizational transformation process. By integrating these four layers, the Palopo City Government can systematically and sustainably strengthen its digital resilience and improve the quality of public services in the long term.

CONCLUSION

This study set out to examine strategies for strengthening digital capacity within the local government of Palopo City by adopting a qualitative descriptive approach. The findings demonstrate that digital capacity building in a local government context is not a singular or technology driven endeavor, but a complex process shaped by the interaction of human resources, institutional arrangements, leadership practices, and technological systems. Digital transformation emerges as an ongoing organizational learning process rather than a finite policy outcome. The study highlights that the effectiveness of digital initiatives is closely tied to the ability of government institutions to develop and sustain meaningful digital competencies among their staff. While basic digital skills provide an important foundation, they are insufficient to support transformative governance outcomes without strategic, analytical, and adaptive capabilities. This underscores the importance of moving beyond short-term technical training toward more integrated and continuous capacity development strategies that align individual competencies with organizational goals. At the institutional level, the study underscores the significance of coherent governance structures and leadership commitment in shaping digital capacity trajectories. Fragmented implementation and uneven leadership engagement can limit the potential of digital systems, even when technological infrastructure is available. Strengthening coordination mechanisms and embedding digital transformation within formal governance frameworks are therefore critical to ensuring that digital initiatives contribute to broader administrative reform and public value creation. The study also reinforces the view that technological infrastructure must be developed in parallel with human and institutional capacity. Digital systems that are not integrated into organizational workflows or supported by internal expertise risk being underutilized and unsustainable. As such, investment in technology should be accompanied by deliberate efforts to enhance institutional learning and reduce dependency on external actors.

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