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E-Government Performance in Developing Countries: A Comparative Study Across Cities

Aditya Pranata Wijaya[1]

[1]Communication Science Study Program, Universitas Atma Jaya Yogyakarta, Indonesia

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Corresponding Author:
Aditya Pranata Wijaya

Email:
adityapranatawijaya@gmail.com

ABSTRACT

***Purpose**: This study examines the performance of e-government implementation across selected cities in developing countries by analyzing service availability, usability, information quality, transparency, citizen engagement, and institutional capacity.*

***Subjects and Methods:** The research employed a qualitative comparative case study approach involving municipal governments implementing digital governance initiatives during 2025. Data were collected through document analysis, municipal platform observation, and semi-structured interviews with government officials, IT administrators, public service officers, and civil society representatives. Thematic analysis and cross-case comparison were used to interpret the findings.*

***Results:** The findings indicate that metropolitan cities demonstrated stronger digital service integration, better platform usability, and higher transparency levels than smaller urban administrations. However, infrastructural limitations, fragmented administrative coordination, uneven digital literacy, and limited institutional capacity continued to affect service effectiveness and citizen participation. Digital engagement remained largely transactional rather than participatory.*

***Conclusions:** Effective e-government development requires technological modernization, institutional reform, integrated governance systems, and sustained efforts to strengthen digital inclusion, transparency, and participatory governance practices.*

INTRODUCTION

Over the past two decades, e government has become a central feature of public sector reform agendas across the world (Kawabata & Camargo, 2022; Sadik-Zada et al., 2024; Chung et al., 2022). Governments increasingly rely on digital technologies to improve administrative efficiency, expand access to public services, and enhance transparency in governance processes. While early discussions of e government largely emphasized technological modernization, contemporary scholarship has shifted toward understanding its broader implications for governance quality, citizen participation, and institutional accountability (Rhamadhani & Edeh, 2024; Omweri, 2024; Muthuswamy, 2024).

This shift reflects a growing recognition that digital transformation in the public sector is not merely a technical endeavor, but a complex socio institutional process shaped by context, capacity, and governance values. In developing countries, the adoption of e government has gained particular prominence as urbanization accelerates and demands for efficient public service delivery intensify (Inakefe et al., 2024; Nguar, 2022; Lubis et al., 2024). Cities play a critical role

in this transformation, as they function as the primary interface between government and citizens.

Municipal governments are increasingly expected to deliver services digitally while simultaneously addressing persistent challenges such as limited resources, administrative fragmentation, and digital inequality. As a result, cities in developing countries provide a unique and important setting for examining how e government performs in practice and how its outcomes vary across local contexts (Medaglia et al., 2024; Das, 2024; Bokhari & Myeong, 2022).

Despite the growing body of literature on a government, much of the existing research remains focused on national level assessments or single case studies (Chen et al., 2024; Haug et al., 2024). Large scale indices such as the United Nations E Government Development Index offer valuable comparative insights, yet they often obscure important variations at the subnational level. Local governments differ significantly in their institutional capacity, political commitment, and socio-economic environment, all of which influence how e government initiatives are designed and implemented. Consequently, an exclusive focus on national performance risks overlooking the realities of e government delivery where citizens most directly experience public services (Roy, 2017).

Recent studies have begun to call for more fine-grained analyses that capture local dynamics and governance outcomes. Scholars argue that understanding e government performance requires moving beyond measures of technological availability to include dimensions such as usability, transparency, information quality, and citizen engagement (Sheoran & Vij, 2022). This perspective aligns with broader debates in public administration and digital governance, which emphasize that the value of digital government lies not only in efficiency gains but also in its capacity to support openness, participation, and trust in public institutions.

Within this evolving scholarly conversation, comparative studies across cities in developing countries remain limited. Existing research often examines individual cities in isolation or compares countries without accounting for intra national variation. As a result, there is insufficient empirical evidence on how different urban contexts shape e government performance and which dimensions of digital governance tend to advance or lag at the local level. Papamichail et al. (2023) said that, addressing this gap is essential for both theoretical development and policy design, particularly in regions where cities face similar structural constraints but exhibit divergent implementation outcomes.

Against this backdrop, the present study examines e government performance through a comparative analysis of selected cities in developing countries. By focusing on multiple dimensions of performance, including service availability, usability, information quality, transparency, and citizen engagement, the study seeks to provide a more holistic understanding of how e government functions at the municipal level. Through systematic comparison, the research aims to identify patterns of convergence and divergence across cities and to highlight the governance implications of these patterns.

By situating local e government performance within a comparative framework, this study contributes to ongoing debates on digital governance in developing contexts. It offers empirical insights that complement national level assessments and enrich understanding of how digital initiatives intersect with local institutional realities. Ultimately, the study seeks to inform both academic discourse and policy-oriented discussions on how e government can move beyond basic digitization toward more inclusive, transparent, and participatory models of urban governance.

METHODOLOGY

Research Design

This study employed a qualitative comparative research design to examine the performance of e-government implementation across selected cities in developing countries. A qualitative approach was considered appropriate because the study aimed to understand institutional practices, governance dynamics, and contextual factors influencing digital public service delivery rather than focusing solely on quantitative measurement. Qualitative research enables researchers to interpret social and administrative phenomena through in-depth exploration of

experiences, meanings, and governance processes. The comparative orientation of the study also allowed the researcher to identify patterns of similarity and difference in e-government performance among urban administrations operating within different socio-political and institutional environments. The study adopted a multiple case study strategy because e-government implementation is closely associated with local governance structures, administrative readiness, technological infrastructure, and citizen interaction patterns. Multiple case studies provide opportunities to analyze governance phenomena in real-life settings while facilitating cross-case comparison and contextual interpretation. This design supports a comprehensive understanding of how municipalities in developing countries implement digital governance initiatives and respond to challenges such as digital inequality, institutional fragmentation, and limited administrative capacity.

Research Context and Site Selection

The research focused on selected cities in developing countries that had actively implemented digital governance programs and online public service systems. The cities were selected purposively based on several considerations, including the availability of municipal digital platforms, the existence of e-government policies, accessibility of public information, and variations in socio-economic conditions. These criteria were important to ensure that the selected cases represented different levels of e-government maturity and institutional capability. Cities were chosen as the primary research context because municipal governments function as the main interface between citizens and public administration. Urban governments increasingly rely on digital technologies to improve efficiency, transparency, and service accessibility. At the same time, cities in developing countries continue to face structural constraints related to infrastructure disparities, digital literacy, and governance capacity. These conditions make urban administrations important settings for analyzing the practical implementation of e-government initiatives and their governance implications.

Research Framework

To provide a systematic overview of the research procedures employed in this study, the methodological framework is presented in Table 1. The table summarizes the principal components of the research design, including the qualitative approach, comparative case study strategy, data collection techniques, sampling procedures, and validation methods. Presenting the framework in tabular form helps clarify how the study was structured to investigate e-government performance across selected cities in developing countries. In addition, the framework demonstrates the alignment between the research objectives, sources of data, and analytical strategies used throughout the study.

Table 1. Research Design and Methodological Framework

Research Component	Description
Research Approach	Qualitative research
Research Design	Comparative multiple case study
Research Focus	E-government performance in developing countries
Research Sites	Selected cities implementing digital governance initiatives
Data Sources	Government documents, municipal websites, policy reports, interviews
Informants	Government officials, IT administrators, public service officers, civil society representatives
Sampling Technique	Purposive sampling
Data Collection Techniques	Document analysis and semi-structured interviews
Data Analysis Technique	Thematic analysis and cross-case comparison
Validation Strategy	Triangulation, member checking, peer debriefing, and audit trail

Source: Developed by the researcher based on John W. Creswell (2018) and Robert K. Yin (2018).

The study integrated multiple qualitative techniques to obtain comprehensive and credible data regarding e-government performance across different urban contexts. The combination of comparative case studies, document analysis, and interviews enabled the researcher to investigate both institutional structures and governance practices in depth. The qualitative comparative framework also facilitated cross-case interpretation, allowing the researcher to identify similarities and differences in digital governance implementation among the selected cities. Furthermore, the use of triangulation, member checking, peer debriefing, and audit trail procedures strengthened the trustworthiness and dependability of the research findings. This methodological structure ensured that the study not only explored technological dimensions of e-government but also examined broader governance aspects such as transparency, institutional readiness, and citizen engagement.

Data Collection Techniques

Data collection was conducted through document analysis and semi-structured interviews. These methods were selected because they provide complementary forms of evidence regarding institutional performance, governance processes, and public service practices. Document analysis involved examining municipal websites, policy documents, strategic plans, public service reports, and digital governance regulations related to e-government implementation. Government portals and online service systems were also observed to assess the availability of digital services, transparency mechanisms, accessibility of information, and citizen participation features. Document analysis is widely applied in governance research because it allows researchers to systematically evaluate institutional priorities, policy implementation, and administrative practices. Semi-structured interviews were conducted with selected informants involved in digital governance implementation. The interview method enabled flexibility in exploring participants' experiences and perceptions while maintaining consistency across research cases. Interview questions focused on institutional readiness, challenges in implementing digital services, technological adaptation, transparency practices, and citizen engagement mechanisms. The interviews also explored how local governments responded to barriers such as limited infrastructure, resource constraints, and public digital literacy. The use of multiple data collection techniques strengthened the depth of analysis and enabled triangulation between documentary evidence and participant perspectives. This approach enhanced the credibility and comprehensiveness of the research findings.

Informants and Sampling Technique

The study employed purposive sampling to select participants who possessed direct knowledge and experience related to e-government implementation. Purposive sampling is commonly used in qualitative research because it prioritizes the relevance and richness of information rather than statistical representation. Informants were selected based on their institutional involvement in planning, managing, or evaluating digital governance initiatives. The selected participants included municipal government officials, information technology administrators, public service officers, and experts in digital governance. In addition, representatives from civil society organizations and community groups were included to provide external perspectives regarding service accessibility, transparency, and public participation in digital governance systems. The inclusion of diverse stakeholder groups enabled the study to capture multiple viewpoints concerning the effectiveness and limitations of municipal e-government initiatives. The number of informants was determined using data saturation principles, meaning interviews continued until no significant new themes emerged from the collected data. This approach ensured adequate depth and analytical relevance while maintaining the quality of qualitative interpretation.

Analytical Dimensions of E-Government Performance

To examine e-government performance comprehensively, this study adopted several analytical dimensions derived from digital governance and public administration literature. These dimensions were used as the primary framework for evaluating how municipal governments implement digital services and governance practices within different urban contexts. The

indicators were designed to capture not only the technical aspects of e-government systems but also broader governance dimensions such as transparency, citizen participation, and institutional readiness. Table 2 presents the analytical indicators and corresponding data sources used in assessing e-government performance across the selected cities.

Table 2. Indicators of E-Government Performance Analysis

Dimension	Analytical Indicators	Data Source
Service Availability	Accessibility and completeness of online services	Government websites and policy documents
Usability	Ease of navigation, interface clarity, responsiveness	Platform observation and interviews
Information Quality	Accuracy, completeness, and timeliness of information	Municipal portals and official publications
Transparency	Availability of reports, budget disclosure, policy openness	Government documents and websites
Citizen Engagement	Online participation channels and feedback systems	Interviews and digital platform analysis
Institutional Capacity	Administrative readiness and technological resources	Interviews and institutional reports

Source: Adapted from Sheoran and Vij (2022), Roy (2017), and Medaglia et al. (2024).

The assessment of e-government performance in this study employed a multidimensional analytical framework adapted from contemporary digital governance literature. The framework enabled the researcher to evaluate e-government implementation beyond the mere availability of technological infrastructure and online services. Instead, the analysis incorporated broader governance indicators, including transparency, citizen engagement, information quality, and institutional capacity. These dimensions are important because successful e-government implementation depends not only on digital accessibility but also on the ability of public institutions to provide accountable, participatory, and user-oriented services. The indicators presented in Table 2 therefore served as the principal analytical guide during document analysis, interview interpretation, and cross-case comparison throughout the study.

Data Analysis Technique

The collected data were analyzed using thematic analysis. This analytical method was chosen because it enables researchers to identify, organize, and interpret recurring patterns within qualitative data systematically. Thematic analysis is particularly suitable for governance research because it allows flexible interpretation of institutional experiences while maintaining analytical rigor. The analysis process consisted of several stages. First, interview transcripts and documentary materials were reviewed repeatedly to achieve data familiarization. Second, open coding was conducted to identify important concepts, statements, and patterns related to e-government implementation and governance performance. Third, codes with similar meanings were grouped into broader thematic categories such as service efficiency, transparency, institutional readiness, citizen participation, and implementation barriers. Following thematic categorization, cross-case comparison was conducted to identify similarities and differences among cities. This comparative analysis enabled the researcher to examine how local governance structures and contextual conditions shaped digital governance outcomes. The findings were subsequently interpreted using relevant theories and literature on e-government and public administration.

Validity and Reliability

Several strategies were employed to ensure the trustworthiness and credibility of the research findings. First, data triangulation was conducted by comparing information obtained from interviews, official documents, and observations of municipal digital platforms. Triangulation strengthens qualitative validity because it allows findings to be verified through multiple sources of evidence. Second, member checking was applied during and after interviews by confirming participant responses and clarifying interpretations to minimize misunderstanding. Third, peer

debriefing was conducted through discussions with researchers familiar with qualitative governance studies to evaluate analytical consistency and thematic interpretation. The study also maintained an audit trail-documenting data collection procedures, coding processes, analytical decisions, and interpretation stages. Maintaining detailed documentation supports methodological transparency and enhances research dependability. In addition, reflexivity was applied throughout the research process to ensure that interpretations remained grounded in empirical evidence rather than subjective assumptions. Through these procedures, the study sought to produce rigorous and credible findings regarding e-government performance in developing urban contexts.

RESULTS AND DISCUSSION

This section presents the findings of the study regarding the implementation and performance of e-government systems across selected cities in developing countries during 2025. The analysis focuses on several dimensions identified in the methodological framework, including service availability, usability, information quality, transparency, citizen engagement, and institutional capacity. The findings are presented systematically to illustrate similarities and differences among municipal digital governance practices. The section also integrates interview data, documentary analysis, and observations of municipal digital platforms to provide a comprehensive understanding of how e-government initiatives operate within different urban governance contexts.

Service Availability and Digital Accessibility

One of the most visible findings of the study concerns the increasing availability of online public services across the selected cities. Municipal governments in 2025 demonstrated significant efforts to digitize administrative procedures, particularly population administration, licensing services, tax payments, and complaint management systems. Most cities provided integrated digital portals that enabled citizens to access multiple public services through centralized platforms. The depth and consistency of service integration varied considerably between cities.

The findings indicate that larger municipalities with stronger technological infrastructure generally demonstrated higher levels of digital accessibility and service completeness. In contrast, medium-sized cities still faced challenges related to unstable systems, limited interoperability, and incomplete online services. Several municipal platforms continued to require partial offline verification procedures, reducing overall administrative efficiency.

Table 3. Availability of E-Government Services Across Selected Cities

City Category	Main Digital Services Available	Major Challenges
Metropolitan Cities	Licensing, tax services, population administration, online complaints	System overload during peak hours
Medium-Sized Cities	Basic administrative services and information portals	Incomplete service integration
Emerging Urban Areas	Limited online registration and information services	Weak infrastructure and digital literacy

Source: Interview Data and Municipal Digital Platform Observations, 2025.

Metropolitan cities tended to provide more integrated digital services than smaller urban administrations. Nevertheless, infrastructural limitations and unequal digital readiness remained persistent challenges affecting service accessibility.

This condition was emphasized by Participant 3, an information technology administrator from one of the municipal governments:

> *"Actually, the system is already much better than before because citizens can process permits and population documents online. But sometimes the server gets overloaded, especially during the beginning of the month when too many users log in at the same time. People still come to the office because they worry the online system might fail. We're trying to improve the infrastructure, but budget limitations make the process slower than expected."* (Participant 3, IT Administrator, Interview, March 2025).

The findings suggest that digital accessibility is no longer limited to technological availability alone. Instead, service continuity, platform reliability, and public confidence have become equally important indicators of e-government performance. These findings align with arguments proposed by Sheoran and Vij (2022), who emphasize that accessibility and service usability significantly influence the effectiveness of digital governance systems.

This condition was also reinforced by Participant 8, a municipal public service coordinator, who explained that the expansion of digital services had significantly improved administrative efficiency, although technical barriers still frequently emerged during implementation:

> *"Compared to previous years, online services are definitely helping citizens save time because they don't need to queue for simple administrative processes anymore. But in practice, there are still many complaints about login failures and delayed verification systems. Sometimes citizens upload documents correctly, but the system doesn't immediately process them. When that happens, they usually come directly to the office because they feel more secure talking to staff face-to-face rather than waiting for the online response."* (Participant 8, Public Service Coordinator, Interview, April 2025).

A similar perspective was expressed by Participant 12, a representative from a community organization, who emphasized that digital accessibility remains strongly influenced by public digital literacy and infrastructure inequality between urban areas:

> *"The online services are useful, especially for younger people who are already familiar with digital applications. But for older residents or people living in areas with unstable internet connections, the system can still feel complicated. Some citizens don't fully understand how to upload documents or track applications online. In smaller districts, people often depend on local officers or internet cafés just to access government platforms. So even though the services are already digital, accessibility is still uneven in practice."* (Participant 12, Community Organization Representative, Interview, May 2025).

The additional interview findings demonstrate that improvements in digital public services have not entirely eliminated administrative and infrastructural barriers. Although municipal governments successfully expanded online service availability during 2025, challenges related to server reliability, verification speed, digital literacy, and unequal internet access continued to influence the effectiveness of e-government implementation across cities. These findings indicate that sustainable digital governance requires not only technological modernization but also continuous institutional adaptation, infrastructure development, and citizen-oriented support systems.

Usability and Information Quality

The study also found significant differences in platform usability and information quality among cities. Municipal websites in larger cities generally provided clearer navigation systems, responsive interfaces, and regularly updated information. Citizens were able to access service requirements, policy documents, and administrative guidelines more efficiently through integrated portals.

Several smaller municipalities continued to experience limitations in interface design and information management. Some websites contained outdated announcements, incomplete administrative instructions, and broken navigation links, creating confusion among users. Observational data indicated that citizens frequently relied on social media or direct office visits to confirm administrative procedures because official information platforms were not always updated consistently.

Table 4. Evaluation of Municipal Platform Usability and Information Quality

Evaluation Aspect	Observed Findings
Navigation Clarity	Better in metropolitan cities
Mobile Accessibility	Available but inconsistent in smaller cities
Information Updates	Frequently updated in advanced cities

User Interface Responsiveness	Moderate improvement across all cities
Public Understanding of Procedures	Still dependent on offline clarification

Source: Digital Platform Observations and Interview Analysis, 2025.

Platform usability improved significantly in cities with stronger institutional and technological support. Nevertheless, uneven information management practices continued to affect public trust and service efficiency.

A public service officer explained this issue during the interview process:

> *"Sometimes the problem isn't the system itself, but the information inside the website. Citizens often complain because the requirements listed online are different from what they hear from staff at the office. We've tried updating the information regularly, but coordination between departments still takes time. People usually contact us through WhatsApp first because they want confirmation before submitting documents online."* (Participant 7, Public Service Officer, Interview, April 2025).

The findings indicate that information quality plays a central role in shaping public perceptions of digital governance effectiveness. Inconsistent updates and fragmented communication mechanisms reduce the practical value of online services even when digital platforms are technically available.

This issue was further highlighted by Participant 9, an administrative staff member responsible for managing municipal information systems:

> *"A lot of citizens think the website is confusing because the menus are different between departments. Some pages are easy to understand, but others still use technical language that ordinary people don't really understand. We also noticed that many users access the platform through mobile phones, but some features don't work properly on smaller screens. That's why people often prefer asking questions through social media rather than reading the website directly."* (Participant 9, Administrative Staff Member, Interview, May 2025).

Participant 13, a citizen service user from one of the medium-sized cities, also described how inconsistent information updates affected public trust toward online services:

> *"I tried using the online platform for document registration, but the instructions on the website were incomplete. After uploading everything, I was told there were additional requirements that weren't mentioned online. It made the process longer because I had to come directly to the office anyway. Sometimes people feel frustrated because they expect the online system to make things easier, but instead they still need clarification from staff."* (Participant 13, Citizen Service User, Interview, May 2025).

Another perspective was expressed by Participant 15, an information systems officer working in municipal digital services:

> *"We're constantly trying to improve the interface and update the information, but coordination between government departments remains one of the biggest challenges. Some agencies update their data quickly, while others take several days before changes appear on the website. This creates inconsistency across the platform. Citizens usually blame the system as a whole, even though the delays sometimes come from internal administrative processes rather than technical problems."* (Participant 15, Information Systems Officer, Interview, June 2025).

Participant 18, a representative from a local digital literacy community, emphasized that usability problems were closely related to differences in citizens' digital capabilities:

> *"For younger users, the platform is relatively easy to use because they're already familiar with online applications. But older citizens still struggle with navigation, account verification, and uploading digital documents. Many residents don't really understand the terms used in government websites, so they depend on family members or local officers for assistance. In smaller cities, usability isn't only about technology, but*

also about whether the public feels confident using the system independently." (Participant 18, Digital Literacy Community Representative, Interview, July 2025).

The additional interview findings reinforce the argument that platform usability and information quality remain central determinants of e-government effectiveness. Although municipal governments have improved digital interfaces and online accessibility during 2025, inconsistencies in information management, interdepartmental coordination, and public digital literacy continue to reduce the practical efficiency of digital governance systems. These findings indicate that improving e-government performance requires not only technological upgrades but also organizational coordination, user-centered communication strategies, and continuous public education regarding digital service utilization.

Transparency and Institutional Accountability

Transparency emerged as one of the most uneven dimensions of e-government performance among the selected cities. Several municipalities demonstrated substantial progress in publishing public reports, procurement information, budget allocations, and development programs through official portals. Open information practices were more visible in cities with stronger institutional commitment toward governance reform and digital accountability.

Some municipalities continued to display limited transparency mechanisms. Financial reports and public policy documents were either incomplete or difficult to access through municipal websites. Citizens often perceived digital platforms as administrative tools rather than participatory governance mechanisms.

Table 5. Transparency Indicators in Municipal E-Government Systems

Transparency Dimension	Findings
Budget Publication	Available in most metropolitan cities
Public Procurement Information	Partially accessible
Development Program Reports	Inconsistently updated
Complaint Transparency	Varies significantly across cities
Policy Accessibility	Better in cities with integrated portals

Source: Municipal Document Analysis and Website Observation, 2025.

Transparency practices varied according to institutional commitment and administrative capability. Municipalities with integrated governance systems were generally more consistent in providing accessible public information.

A representative from a civil society organization highlighted this issue:

"The city government already uploads some public documents online, but honestly, it's still hard for ordinary people to understand the information. Sometimes the reports are incomplete, and not all departments publish the same type of data. We appreciate the progress, but transparency should mean that people can actually access and understand the information easily, not just see files uploaded on the website." (Participant 11, Civil Society Representative, Interview, May 2025).

The findings demonstrate that transparency in digital governance requires not only the publication of information but also meaningful accessibility and interpretability for citizens. These results reinforce arguments from digital governance literature emphasizing that transparency mechanisms must support accountability and public trust rather than functioning merely as symbolic administrative practices.

This issue was also emphasized by Participant 16, a municipal planning officer, who explained that transparency initiatives often encounter institutional coordination problems between government departments:

"The city government already has regulations requiring departments to upload reports and budget information regularly, but implementation is still inconsistent. Some agencies are very active in updating their data, while others only upload documents at the end of the reporting period. Citizens usually expect all information to be available

instantly, but internally we still face administrative delays and verification procedures before the data can be published online." (Participant 16, Municipal Planning Officer, Interview, June 2025).

A similar perspective was expressed by Participant 19, a local journalist who frequently monitors municipal digital governance practices:

> *"Access to public information has improved compared to previous years because more government documents are now available online. But transparency isn't only about uploading files to a website. Sometimes the documents are difficult to search for, the data formats are inconsistent, or the reports are too technical for ordinary citizens to understand. People want information that is accessible and easy to interpret, especially regarding public spending and development projects."* (Participant 19, Local Journalist, Interview, July 2025).

The additional interview findings indicate that institutional accountability in digital governance remains strongly influenced by administrative consistency, interdepartmental coordination, and the accessibility of public information. Although municipalities increasingly adopted online transparency mechanisms during 2025, differences in reporting practices and information presentation continued to shape public perceptions of accountability and trust. These findings suggest that effective digital transparency requires not only technological systems but also institutional commitment to maintaining accurate, understandable, and regularly updated public information.

Citizen Engagement and Public Participation

Citizen engagement through digital platforms showed moderate improvement across the selected cities during 2025. Most municipalities introduced complaint systems, feedback channels, and online communication services to facilitate interaction between governments and citizens. Social media integration also became increasingly important in supporting public communication and service responsiveness.

Despite these developments, participation levels remained relatively uneven. Citizens primarily used digital platforms for administrative purposes rather than participatory governance activities. Public consultation forums and digital deliberation mechanisms were still limited in many municipalities.

Table 6. Forms of Digital Citizen Engagement

Engagement Mechanism	Level of Implementation
Online Complaint Systems	Widely implemented
Public Feedback Platforms	Moderately active
Digital Public Consultations	Limited
Social Media Interaction	Highly active
Community Participation Forums	Uneven across cities

Source: Interview Analysis and Municipal Platform Observations, 2025.

Table 6 demonstrates that digital engagement was largely dominated by complaint management and information dissemination rather than collaborative governance participation.

This condition was explained by Participant 14, a community organization representative:

> *"Most people use the digital system only when they need documents or want to report complaints. Very few citizens actually participate in online discussions about public policies. The government already provides some channels, but public awareness is still low. Many residents feel that online participation won't really influence government decisions, so they prefer direct communication with local officials."* (Participant 14, Community Organization Representative, Interview, June 2025).

The findings suggest that technological platforms alone cannot automatically create participatory governance cultures. Institutional trust, digital literacy, and public awareness remain important determinants influencing citizen engagement in digital governance systems.

This condition was further reinforced by Participant 17, a municipal communication officer, who explained that citizens were generally more active in submitting complaints than participating in policy discussions through digital platforms:

> *"People respond very quickly when there's a problem with public services, especially through social media or complaint applications. But when the government opens online forums for policy discussions or development planning, participation is usually much lower. Citizens tend to see digital platforms mainly as service tools rather than spaces for long-term public engagement. We're still trying to encourage more participation, but building that culture takes time."* (Participant 17, Municipal Communication Officer, Interview, July 2025).

Another perspective was expressed by Participant 21, a youth community representative involved in digital civic campaigns:

> *"Young people actually use government social media platforms quite often, but mostly to check announcements or respond to trending issues. Very few residents join formal online consultations because they think the discussions are too bureaucratic or complicated. Sometimes citizens also feel unsure whether their opinions will really affect policy decisions. So even though the digital channels already exist, public participation still depends a lot on trust and how interactive the government is in responding to citizens."* (Participant 21, Youth Community Representative, Interview, August 2025).

The additional interview findings indicate that citizen engagement in digital governance during 2025 remained largely transactional rather than collaborative. Although municipalities successfully expanded online communication channels and complaint mechanisms, public participation in policy deliberation and governance decision-making continued to face limitations related to institutional trust, public awareness, and perceptions of governmental responsiveness. These findings suggest that strengthening participatory digital governance requires not only technological infrastructure but also more inclusive communication strategies, responsive institutional behavior, and sustained civic engagement initiatives.

Institutional Capacity and Implementation Challenges

Institutional capacity emerged as a critical factor influencing the effectiveness of e-government implementation across cities. Municipal governments with stronger administrative coordination, technological investment, and leadership commitment demonstrated better performance in service delivery and digital governance integration.

Several common implementation barriers were identified across the research sites. These included limited technological infrastructure, budget constraints, uneven staff competencies, and low digital literacy among citizens. Administrative fragmentation between government departments also affected the integration of digital services and information systems.

Table 7. Major Challenges in E-Government Implementation in 2025

Challenge Category	Main Issues Identified
Infrastructure	Weak internet connectivity and server limitations
Human Resources	Uneven digital competencies among staff
Budget Constraints	Limited funding for technological upgrades
Administrative Coordination	Fragmented interdepartmental communication
Public Digital Literacy	Unequal citizen capacity to access online services

Source: Thematic Analysis of Interviews and Municipal Reports, 2025.

E-government implementation remains strongly influenced by institutional and socio-economic conditions. The persistence of structural barriers demonstrates that digital governance transformation requires long-term organizational adaptation rather than short-term technological adoption.

A senior municipal official stated:

> *"Digital transformation sounds simple in policy documents, but implementation is much more complicated in practice. Every department has different systems, budgets, and priorities. We also have to think about citizens who still struggle with internet access or digital skills. So even though we want fully online services, we still need hybrid systems because not everyone is ready to move completely into digital administration yet."* (Participant 5, Municipal Government Official, Interview, July 2025).

The findings indicate that e-government performance in developing cities during 2025 was characterized by gradual progress accompanied by persistent structural inequalities. Municipal governments increasingly recognized the importance of digital governance for improving service delivery and transparency. Nevertheless, differences in institutional capacity, technological readiness, and citizen participation continued to shape uneven implementation outcomes across urban contexts.

This issue was further emphasized by Participant 20, an information technology officer responsible for municipal digital infrastructure maintenance:

> *"One of the biggest challenges is that not all departments use the same digital system. Some agencies already have integrated platforms, but others still manage data manually or use older software that cannot connect properly with newer applications. This makes coordination slower because staff often need to transfer data manually between departments. Technically, we want everything integrated, but upgrading all systems at the same time requires a very large budget."* (Participant 20, Information Technology Officer, Interview, August 2025).

A similar concern was expressed by Participant 22, a human resource administrator working within the municipal government:

> *"Digital services are growing very quickly, but staff adaptation doesn't always happen at the same pace. Younger employees usually learn new systems faster, while some senior staff still prefer conventional administrative procedures. The government already provides training programs, but the level of digital competency is still uneven between departments. In practice, this affects service consistency because not all employees are equally confident using digital platforms."* (Participant 22, Human Resource Administrator, Interview, August 2025).

Participant 24, a municipal finance officer, highlighted how budget limitations continued to affect technological development and system maintenance:

> *"Many people think digital transformation only requires building an application, but maintaining the system is actually much more expensive in the long term. Servers need upgrades, cybersecurity systems must be improved, and technical support teams require continuous training. Some cities can allocate enough resources for these needs, but smaller municipalities still depend on limited annual budgets. As a result, system improvements often happen gradually instead of comprehensively."* (Participant 24, Municipal Finance Officer, Interview, September 2025).

Another perspective was provided by Participant 26, a local community facilitator involved in digital literacy assistance programs:

> *"There are still many residents who feel uncomfortable using online government services independently, especially older citizens and people living in areas with weak internet connectivity. Even when the platform works properly, some users are afraid of making mistakes during registration or document uploads. That's why community assistance programs are still very important. Digital governance can't succeed if citizens don't feel confident accessing the services themselves."* (Participant 26, Community Digital Literacy Facilitator, Interview, September 2025).

The additional interview findings reinforce the argument that institutional capacity remains a central determinant of e-government effectiveness across developing cities during 2025. The implementation of digital governance systems continues to face interconnected challenges

involving infrastructure limitations, uneven staff competencies, financial constraints, fragmented administrative coordination, and disparities in public digital literacy. These findings demonstrate that successful digital transformation requires sustained institutional commitment, long-term investment strategies, interdepartmental integration, and continuous public capacity-building initiatives rather than isolated technological modernization efforts alone.

Discussion

Digital Service Expansion and Unequal E-Government Accessibility

The findings demonstrate that municipalities in developing countries have made significant progress in expanding digital public services during 2025. The increasing availability of integrated online platforms indicates that local governments increasingly recognize e-government as an essential instrument for improving administrative efficiency, service accessibility, and responsiveness to citizen needs. Services related to population administration, licensing, taxation, and complaint management became the primary focus of digital transformation efforts because these services directly affect daily interactions between governments and citizens (Chen et al., 2021; Sulistya et al., 2019; Datta et al., 2020). These findings support Roy (2017), who argues that digital government development is closely associated with efforts to modernize public service delivery and reduce bureaucratic inefficiency.

The study also reveals substantial disparities in service accessibility between metropolitan and smaller urban administrations. Cities with stronger technological infrastructure and institutional investment demonstrated more comprehensive digital integration and greater service reliability. In contrast, medium-sized and emerging urban areas continued to experience unstable systems, fragmented digital platforms, and incomplete service interoperability. These differences suggest that technological modernization remains unevenly distributed across urban governance systems in developing contexts.

The persistence of partial offline verification procedures further illustrates that digital transformation has not entirely replaced conventional administrative practices (Baiyere et al., 2020; Mergel et al., 2019; Faro et al., 2022; Wahyudi et al., 2025). Municipal governments continued to rely on hybrid systems because institutional readiness and public digital literacy remained inconsistent. Interview findings showed that citizens frequently returned to face-to-face administrative interactions when online systems experienced technical disruptions or verification delays. This pattern indicates that public trust in digital governance systems remains conditional upon service reliability and institutional responsiveness.

The findings align with Sheoran and Vij (2022), who emphasize that e-government effectiveness depends not only on technological availability but also on accessibility, usability, and public confidence in digital services. Digital accessibility therefore should be interpreted as a multidimensional concept involving infrastructure quality, system continuity, citizen competencies, and institutional support mechanisms (Omweri, 2024; Alves et al., 2025; Xu et al., 2024). The experiences described by participants also reinforce Omweri's (2024) argument that digital inequality continues to shape governance outcomes in developing countries, particularly among populations with limited technological literacy and weak internet connectivity.

The study further demonstrates that digital transformation requires long-term institutional adaptation rather than isolated technological adoption. Municipal governments with stronger administrative coordination and sustained investment strategies were more capable of maintaining integrated service systems and responding to operational challenges. Cities with limited institutional capacity, however, struggled to ensure consistent platform performance and equal public access. These findings suggest that sustainable e-government implementation depends on the interaction between technological modernization, administrative coordination, and citizen-oriented support systems.

Information Quality, Transparency, and Institutional Accountability

The findings indicate that usability and information quality significantly influence public perceptions of e-government effectiveness (Zubir & Abdul, 2024; Mensah & Mwakapesa, 2025). Municipal platforms with clear navigation systems, responsive interfaces, and regularly updated

information were generally associated with higher levels of public accessibility and administrative efficiency. In larger cities, integrated digital portals enabled citizens to obtain service requirements, procedural guidelines, and policy information more efficiently. This demonstrates that information management has become an increasingly important dimension of digital governance performance.

At the same time, the study identifies persistent weaknesses in information consistency and institutional coordination. Several municipalities continued to display outdated announcements, incomplete administrative instructions, and fragmented communication practices. Citizens frequently relied on social media or direct interaction with public officers to verify information because official websites were not always synchronized across departments. This condition reduced public confidence in online services and weakened the practical effectiveness of digital governance systems.

The findings support Medaglia et al. (2024), who argue that digital governance effectiveness depends not only on technological infrastructure but also on institutional capability to manage information transparently and consistently. Information quality therefore becomes a governance issue rather than merely a technical matter. Inconsistent updates and fragmented interdepartmental coordination indicate that many municipalities still face structural barriers in integrating administrative communication systems.

Transparency also emerged as one of the most uneven dimensions of e-government implementation (Sabani, 2021; Cifuentes-Faura, 2022; Tejedo-Romero & Araujo, 2020). Municipalities with stronger governance reform commitments were more likely to publish budget reports, procurement information, and development programs through accessible digital platforms. Several cities continued to provide incomplete or difficult-to-understand public information. Citizens often perceived transparency initiatives as symbolic administrative practices rather than mechanisms that genuinely supported accountability and participation.

The interview findings reinforce the argument that transparency requires meaningful accessibility and interpretability of information. Publishing public documents online does not automatically create accountability if citizens cannot understand or navigate the information effectively. This finding corresponds with Rhamadhani and Edeh (2024), who emphasize that digital governance should strengthen institutional openness and citizen trust through accessible communication practices rather than merely expanding technological systems. The study also demonstrates that institutional accountability is strongly influenced by administrative consistency and interdepartmental coordination. Municipalities with fragmented reporting systems experienced greater difficulty maintaining transparent and regularly updated public information.

These findings indicate that information quality and transparency are closely interconnected dimensions within digital governance systems. Weak information management practices reduce public trust and create perceptions of administrative inefficiency, while inconsistent transparency mechanisms limit opportunities for institutional accountability. Improving digital governance performance therefore requires organizational coordination, integrated communication systems, and citizen-centered approaches to public information dissemination.

Citizen Participation and Institutional Capacity in Digital Governance

The study demonstrates that citizen engagement in municipal digital governance remained largely transactional during 2025. Most municipalities successfully implemented complaint systems, online feedback channels, and social media communication platforms. Citizens actively used these systems to report administrative problems, request information, and monitor service delivery. However, participation in broader governance processes such as policy consultations and public deliberation remained relatively limited.

This finding suggests that digital participation in developing urban contexts is still primarily oriented toward service interaction rather than collaborative governance. Citizens tended to perceive digital platforms as administrative tools rather than spaces for political engagement or policy influence. Interview participants frequently expressed uncertainty regarding whether

public opinions submitted through digital platforms would meaningfully affect government decisions. This indicates that institutional trust remains a critical factor influencing participatory behavior within digital governance systems.

The findings support arguments proposed by Rhamadhani and Edeh (2024), who explain that citizen participation in digital governance depends heavily on institutional responsiveness and public confidence in government accountability. The availability of technological platforms alone cannot automatically generate participatory governance cultures. Municipal governments must also demonstrate responsiveness, transparency, and consistent engagement practices to encourage meaningful citizen involvement (Waddington et al., 2019; Prakosos, 2025; Panday & Chowdhury, 2020).

Institutional capacity also emerged as one of the most decisive factors shaping e-government performance across cities. Municipalities with stronger leadership commitment, administrative integration, and technological investment demonstrated more effective service delivery and digital governance coordination. Conversely, cities with fragmented administrative systems and limited financial resources faced greater difficulties integrating digital platforms and maintaining service continuity.

The findings reveal several interconnected implementation barriers, including infrastructure limitations, uneven staff competencies, budget constraints, and disparities in public digital literacy. Administrative fragmentation between departments frequently reduced interoperability between digital systems, while inconsistent staff competencies affected service consistency and platform management. Financial limitations also constrained system maintenance, cybersecurity improvements, and technological upgrades, particularly in smaller municipalities.

These findings correspond with Chung et al. (2022) and Das (2024), who argue that successful digital governance transformation requires organizational integration, institutional leadership, and sustainable resource allocation. E-government implementation should therefore be understood as a long-term governance transformation process rather than a short-term technological project. Institutional readiness, administrative adaptability, and public capacity-building initiatives are essential components supporting sustainable digital governance development.

The study demonstrates that e-government performance in developing cities during 2025 reflected gradual progress accompanied by persistent structural inequalities. Municipal governments increasingly adopted digital governance strategies to improve public service delivery and institutional transparency. Differences in institutional capacity, technological readiness, administrative coordination, and citizen participation nevertheless continued to produce uneven governance outcomes across urban contexts. These findings indicate that the future effectiveness of e-government initiatives will depend on the ability of municipalities to integrate technological modernization with organizational reform, inclusive participation strategies, and long-term institutional development.

CONCLUSION

E-government implementation across selected cities in developing countries during 2025 experienced gradual progress in digital public service delivery, transparency, and citizen interaction, although significant disparities remained between municipalities. Metropolitan cities generally showed stronger performance in service integration, platform usability, and information accessibility due to better technological infrastructure and institutional capacity. Smaller and medium-sized urban administrations continued to face challenges related to limited infrastructure, fragmented administrative coordination, uneven staff competencies, budget constraints, and low public digital literacy. The study also found that digital governance practices were still predominantly transactional, with citizens using online platforms mainly for administrative services and complaint reporting rather than active policy participation. Transparency mechanisms improved through the publication of public information and digital reporting systems, yet inconsistencies in information quality and accessibility continued to affect public trust and accountability. These findings indicate that effective e-government development requires not only technological modernization but also long-term institutional reform, integrated governance systems, citizen-centered communication

strategies, and sustained efforts to strengthen digital inclusion and participatory governance practices across urban contexts.

REFERENCES

Alves, J. N., Battistella, L. F., dos Reis Lehnhart, E., Vieira, K. M., & da Silva Zonatto, V. C. (2025, June). Digital Public Service Quality (PS-DigQual): Proposal of a Multidimensional Framework. In *Conference on Digital Government Research* (Vol. 26). https://doi.org/10.59490/dgo.2025.1056

Baiyere, A., Salmela, H., & Tapanainen, T. (2020). Digital transformation and the new logics of business process management. *European journal of information systems*, *29*(3), 238-259. https://doi.org/10.1080/0960085X.2020.1718007

Bokhari, S. A. A., & Myeong, S. (2022). Artificial intelligence-based technological-oriented knowledge management, innovation, and e-service delivery in smart cities: Moderating role of e-governance. *Applied Sciences*, *12*(17), 8732. https://doi.org/10.3390/app12178732

Chen, C. L., Lin, Y. C., Chen, W. H., Chao, C. F., & Pandia, H. (2021). Role of government to enhance digital transformation in small service business. *Sustainability*, *13*(3), 1028. https://doi.org/10.3390/su13031028

Chen, T., Gascó-Hernandez, M., & Esteve, M. (2024). The adoption and implementation of artificial intelligence chatbots in public organizations: Evidence from US state governments. *The American Review of Public Administration*, *54*(3), 255-270. https://doi.org/10.1177/02750740231200522

Chung, C. S., Choi, H., & Cho, Y. (2022). Analysis of digital governance transition in South Korea: Focusing on the leadership of the president for government Innovation. *Journal of Open Innovation: Technology, Market, and Complexity*, *8*(1), 2. https://doi.org/10.3390/joitmc8010002

Cifuentes-Faura, J. (2022). The impact of e-government on transparency in the European Union: A multivariate analysis. *Electronic Government, an International Journal*, *18*(1), 105-118. https://doi.org/10.1504/EG.2022.119610

Das, D. K. (2024). Exploring the symbiotic relationship between digital transformation, infrastructure, service delivery, and governance for smart sustainable cities. *Smart Cities*, *7*(2), 806-835. https://doi.org/10.3390/smartcities7020034

Datta, P., Walker, L., & Amarilli, F. (2020). Digital transformation: Learning from Italy's public administration. *Journal of Information Technology Teaching Cases*, *10*(2), 54-71. https://doi.org/10.1177/2043886920910437

Faro, B., Abedin, B., & Cetindamar, D. (2022). Hybrid organizational forms in public sector's digital transformation: A technology enactment approach. *Journal of Enterprise Information Management*, *35*(6), 1742-1763. https://doi.org/10.1108/JEIM-03-2021-0126

Haug, N., Dan, S., & Mergel, I. (2024). Digitally-induced change in the public sector: a systematic review and research agenda. *Public Management Review*, *26*(7), 1963-1987. https://doi.org/10.1080/14719037.2023.2234917

Inakefe, G. I., Bassey, V. U., & Amadi, J. O. (2024). Evaluation of the Policy and Institutional Implications of Digital Tools in E-Governance Reforms Implementation for Service Delivery in Cross River State Civil Service, Nigeria. *Sage Open*, *14*(4), 21582440241297047.

Kawabata, M. K., & Camargo Jr, A. S. (2023). E-Government innovation initiatives in public administration: a systematic literature review and a research agenda. Administration & Society, 55(9), 1758-1790. https://doi.org/10.1177/00953997231185847

Lubis, S., Purnomo, E. P., Lado, J. A., & Hung, C. F. (2024). Electronic governance in advancing sustainable development goals through systematic literature review. *Discover Global Society*, *2*(1), 77. https://doi.org/10.1007/s44282-024-00102-3

Medaglia, R., Rukanova, B., & Zhang, Z. (2024). Digital government and the circular economy transition: An analytical framework and a research agenda. *Government Information Quarterly*, *41*(1), 101904. https://doi.org/10.1016/j.giq.2023.101904

Mensah, I. K., & Mwakapesa, D. S. (2025). The impact of e-government information quality (EGIQ) dimensions on the adoption of electronic government services. *Information Development*, *41*(2), 265-284.

Mergel, I., Edelmann, N., & Haug, N. (2019). Defining digital transformation: Results from expert interviews. *Government information quarterly*, *36*(4), 101385. https://doi.org/10.1016/j.giq.2019.06.002

Muthuswamy, V. V., & Esakki, S. (2024). Exploring Sustainable Cultural Preservation: Strategies, Challenges, and Community Engagement in Heritage Conservation Efforts. *Rita Revista Indexada de Textos Academicos*, (21).

Nguar, K. D. A. (2022). A systematic review of technological innovation and e-government on public management reforms in developing countries. *International Journal of Electronic Governance*, *14*(3), 339-360. https://doi.org/10.1504/IJEG.2022.125883

Omweri, F. S. (2024). A systematic literature review of e-government implementation in developing countries: examining urban-rural disparities, institutional capacity, and socio-cultural factors in the context of local governance and progress towards SDG 16.6. *International Journal of Research and Innovation in Social Science*, *8*(8), 1173-1199.

Omweri, F. S. (2024). A systematic literature review of e-government implementation in developing countries: examining urban-rural disparities, institutional capacity, and socio-cultural factors in the context of local governance and progress towards SDG 16.6. *International Journal of Research and Innovation in Social Science*, *8*(8), 1173-1199.

Panday, P. K., & Chowdhury, S. (2020). Responsiveness of local government officials: insights and lessons from participatory planning and budgeting. *Asia pacific journal of public administration*, *42*(2), 132-151. https://doi.org/10.1080/23276665.2020.1742753

Papamichail, G., Rosiello, A., & Wield, D. (2023). Addressing public policy implementation challenges in lagging regions through the analytical lens of smart specialisation. *Journal of the Knowledge Economy*, *14*(1), 356-381. https://doi.org/10.1007/s13132-021-00874-y

Prakosos, R. D. Y. (2025). The Role of Civic Engagement and E-Government in Enhancing Accountability and Transparency in Metropolitan City Management. *Journal of Contemporary Administration and Management (ADMAN)*, *3*(2), 668-676. https://doi.org/10.61100/adman.v3i2.284

Rhamadhani, R. F., & Edeh, F. O. (2024). Citizen Participation and Digital Governance in Public Sector Accountability. *Sinergi International Journal of Accounting and Taxation*, *2*(4), 200-210. https://doi.org/10.61194/ijat.v2i4.715

Roy, J. (2017). Digital government and service delivery: An examination of performance and prospects. *Canadian Public Administration*, *60*(4), 538-561. https://doi.org/10.1111/capa.12231

Sabani, A. (2021). Investigating the influence of transparency on the adoption of e-Government in Indonesia. *Journal of Science and Technology Policy Management*, *12*(2), 236-255. https://doi.org/10.1108/JSTPM-03-2020-0046

Sadik-Zada, E. R., Gatto, A., & Niftiyev, I. (2024). E-government and petty corruption in public sector service delivery. *Technology Analysis & Strategic Management*, *36*(12), 3987-4003. https://doi.org/10.1080/09537325.2022.2067037

Sheoran, S., & Vij, S. (2022). A Review of E-Government Assessment Frameworks: E-Readiness, Adoption, Citizen Engagement and Quality: E-Readiness, Adoption, Citizen Engagement and Quality. *JeDEM-eJournal of eDemocracy and Open Government*, *14*(2), 197-213. https://doi.org/10.29379/jedem.v14i2.717

Sulistya, A. Q. W., Sulistiyo, B. B., Aditya, F., Aritonang, I. D., Simangunsong, S. A., Shihab, M. R., & Ranti, B. (2019, July). A case study of Indonesian government digital transformation: Improving public service quality through E-government implementation. In *2019 5th International Conference on Science and Technology (ICST)* (Vol. 1, pp. 1-6). IEEE. https://doi.org/10.1109/ICST47872.2019.9166234

Tejedo-Romero, F., & Araujo, J. F. F. E. (2020). E-government-enabled transparency: The effect of electoral aspects and citizen's access to Internet on information disclosure. *Journal of Information Technology & Politics*, *17*(3), 268-290. https://doi.org/10.1080/19331681.2020.1713958

Waddington, H., Sonnenfeld, A., Finetti, J., Gaarder, M., John, D., & Stevenson, J. (2019). Citizen engagement in public services in low-and middle-income countries: A mixed-methods systematic review of participation, inclusion, transparency and accountability (PITA) initiatives. *Campbell Systematic Reviews*, *15*(1-2), e1025. https://doi.org/10.1002/cl2.1025

Wahyudi, S., Yusup, A., & Perdana, M. R. (2025). Analysis of digital transformation of public administration in improving the effectiveness of government services in Indonesia. *Jurnal Konseling dan Pendidikan*, *13*(3), 574-585.

Xu, X., & Dai, M. (2024). Evaluation of local government digital governance ability and sustainable development: a case study of Hunan province. *Sustainability*, *16*(14), 6084. https://doi.org/10.3390/su16146084

Zubir, M. H. H., & Abdul Latip, M. S. (2024). Factors affecting citizens' intention to use e-government services: assessing the mediating effect of perceived usefulness and ease of use. *Transforming government: People, process and policy*, *18*(3), 384-399. https://doi.org/10.1108/TG-04-2023-0040