ISSN: 3164-6611
Volume 1 (2) 2026
Page. 29-41
DOI: 10.68211/sogpa.v1i1.22
Journal of Social Governance and Public Administration: **SOGPA**
https://ojs.prosperalumina.com/index.php/si/index

Digital Leadership in Local Government: A Case Study of the Tulungagung Office of Communication and Informatics

Sandi Ardiansah[1]*, Firdaus Lingga Kusuma[2], M. Anwar[3]

[1),2),3)] Public Administration Study Program, Faculty of Social and Political Sciences, Universitas Tulungagung, Indonesia

Received: July 3, 2026; Reviewed: July 17, 2026; Approved: August 15, 2026

*Corresponding Email: Ardiansahsandi3@gmail.com

Abstract

Digital transformation has increasingly reshaped how local governments communicate with citizens, organize digital services, and create public value. However, the presence of digital technologies does not automatically indicate that local government organizations possess the leadership capacity required to translate technology into sustained institutional transformation. This study examines how digital leadership is manifested in the digital transformation practices of the Tulungagung Office of Communication and Informatics (DisKominfo). The study employs a qualitative descriptive design based on documentary analysis of official institutional information, digital platforms, social media content, government documents, and relevant scholarly literature. The analysis combines digital leadership literature with Rogers' (2016) five domains of digital transformation: customers, competition, data, innovation, and value. The findings indicate that citizen-oriented digital communication and service provision are most visible through the agency's institutional website, evolving service menus, and use of Instagram and YouTube. Innovation is illustrated by the agency's involvement in the SI-TRUST tuberculosis specimen tracking initiative and its cross-sector collaboration. However, the available documentary evidence is insufficient to establish the agency's digital transformation practices in the domains of competition and data governance comprehensively. The study contributes empirical evidence from an Indonesian subnational government context and demonstrates how publicly observable digital practices can be examined as manifestations of digital leadership. The findings suggest that local digital leadership should be understood not merely as technology adoption but as the organizational capacity to connect digital technologies with citizen needs, innovation, and public value.

Keywords: Digital leadership; digital transformation; local government; public value; e-government.

How to Cite: Ardiansah, S., Kusuma, F. L., Anwar, M. (2026). Digital Leadership at the Local Government Level: A Case Study of the Tulungagung Office of Communication and Informatics. *SOGPA* 1 (2): 29-41

This work is licensed under a

Creative Commons Attribution-NonCommercial 4.0 International License

INTRODUCTION

Digital transformation has become an important dimension of public sector reform, changing how government organizations communicate with citizens, organize administrative processes, and deliver public services. Digital transformation, however, involves more than the introduction of digital technologies. It requires changes in organizational processes, institutional arrangements, service delivery, and the ways in which public organizations create and sustain value through technology (Vial, 2019; Mergel et al., 2019). In government, these changes occur within institutional environments characterized by public accountability, bureaucratic procedures, resource constraints, and diverse citizen capabilities. Consequently, the effectiveness of digital transformation depends not only on technological availability but also on organizational leadership capable of translating technological possibilities into institutional action.

The leadership dimension is particularly important because digital transformation changes how organizations make decisions, coordinate activities, communicate with stakeholders, and develop services. Digital leadership has therefore emerged as an important concept for understanding leadership in technology-mediated organizational environments. Rather than being limited to technical competence, digital leadership concerns the capacity to articulate direction, facilitate organizational adaptation, mobilize resources, support innovation, and connect technological change with organizational and stakeholder needs (Avolio et al., 2014; Cortellazzo et al., 2019). In public organizations, these leadership functions are complicated by the need to balance technological innovation with public value, accountability, inclusion, and institutional constraints.

Rogers (2016) provides a useful framework for understanding the broader process of digital transformation through five domains: customers, competition, data, innovation, and value. The framework emphasizes that digital transformation changes not only technologies but also the way organizations understand and interact with users, respond to changing organizational environments, use data, develop innovations, and create value. Although developed primarily in the context of organizational digital transformation, these domains provide a useful analytical lens for examining public sector organizations when appropriately contextualized. In government, "customers" can be interpreted in relation to citizens and service users, while "value" can be considered in terms of public value. The domains of competition, data, and innovation also require contextual interpretation because public organizations operate differently from private firms.

The relevance of digital leadership becomes particularly important at the local government level. Local governments are expected to provide accessible and responsive public services while operating within institutional, financial, infrastructural, and human-resource constraints. Unlike national governments, local agencies often have more direct interaction with citizens but may have fewer resources to develop and maintain sophisticated digital systems. This creates a practical tension between increasing expectations for digital public services and the institutional capacity available to support digital transformation.

Indonesia provides an important context for examining this issue. Digital government development has expanded across government institutions, while local governments increasingly use websites, social media, online applications, and digital communication channels to interact with citizens. Nevertheless, the extent to which these technologies represent genuine organizational transformation rather than simply the addition of digital communication channels remains an empirical question.

The Tulungagung Office of Communication and Informatics (DisKominfo) provides a relevant case because the agency has a central role in information and communication technology, government communication, and digital public services within the regency. The agency's digital practices include the development of an institutional website, the provision and refinement of digital service information, the use of social media platforms, and involvement in the SI-TRUST digital application for tuberculosis specimen tracking. The original study documents these practices through publicly available institutional and digital sources.

Despite increasing research on digital government and digital transformation, empirical studies examining how digital leadership is manifested through observable digital practices at the subnational government level in developing-country contexts remain limited. Existing literature has provided substantial conceptual discussion concerning digital transformation and public sector leadership, but less attention has been given to how local government organizations translate digital technologies into citizen-oriented services, organizational innovation, and public value under resource constraints.

LITERATURE REVIEW

Digital Transformation in Local Government

Digital transformation refers to organizational changes enabled by digital technologies that affect structures, processes, organizational practices, and value creation (Vial, 2019). In public administration, digital transformation is broader than the digitization of existing administrative procedures because it may alter relationships between government institutions and citizens, organizational coordination, and service delivery arrangements (Mergel et al., 2019).

Earlier e-government research emphasized the gradual development of online government services, from information provision toward more integrated forms of digital service delivery (Layne & Lee, 2001). However, the existence of an online presence does not necessarily indicate substantive institutional transformation. Local governments may adopt websites and digital channels while retaining conventional organizational processes. This distinction makes leadership and organizational capacity important dimensions of digital transformation.

Digital Leadership in Public Organizations

Digital leadership concerns the leadership capabilities required when organizations operate in increasingly technology-mediated environments. Avolio et al. (2014) demonstrate that digital environments alter traditional patterns of leadership communication, authority, and interaction. Cortellazzo et al. (2019) further show that digitalization requires leadership that combines technological awareness with strategic orientation, organizational adaptation, collaboration, and innovation.

In public organizations, digital leadership must additionally address public-sector values and institutional constraints. Leaders must connect technological development with service accessibility, public accountability, organizational capacity, and public value. Consequently, digital leadership should not be equated simply with the presence of digital technology. The analytical focus should instead concern how leadership is manifested through organizational responses to technological change.

Rogers' Five Domains of Digital Transformation

Rogers (2016) conceptualizes digital transformation through five domains:

1. Customers : organizations must reconsider how they understand, engage, and create value for customers.

2. Competition : digital transformation changes the organizational environment and the nature of competitive or collaborative relationships.
3. Data : organizations increasingly treat data as a strategic resource rather than merely a by-product of transactions.
4. Innovation : digital technologies alter how organizations experiment, develop, and scale new ideas.
5. Value : organizations must continually reconsider how value is created and where future value may emerge.

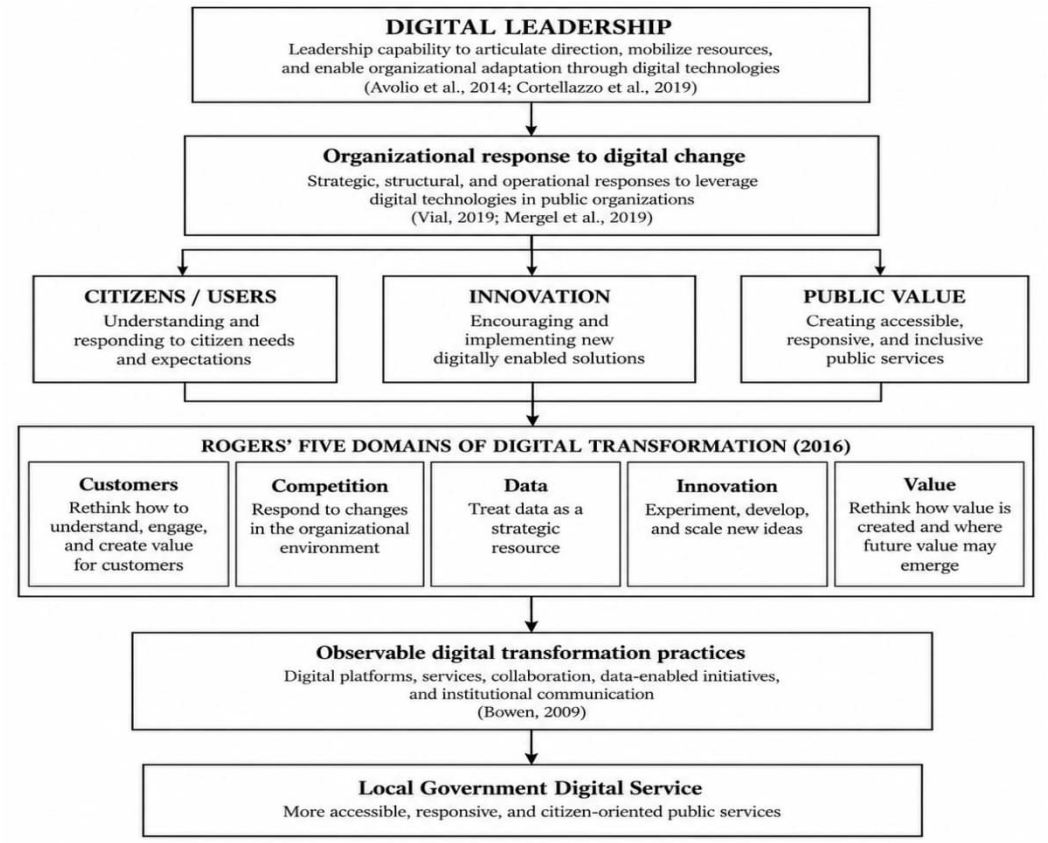
These five domains were originally formulated in the context of business transformation. Therefore, this study does not mechanically transfer the framework to local government. Instead, the domains are contextualized for public administration.

Research Gap and Analytical Framework

Three gaps can be identified. First, digital leadership research has increasingly addressed leadership capabilities in digitally transformed organizations, but empirical evidence from subnational public organizations in developing-country contexts remains limited. Second, digital government research frequently evaluates technological adoption, service availability, or digital maturity, while less attention is given to the leadership processes through which organizations translate technology into citizen-oriented practices and innovation. Third, Rogers' five-domain framework has primarily been applied to organizational digital transformation, particularly in business contexts. Its analytical usefulness for examining local government digital transformation therefore requires contextualization, particularly concerning the domains of customers, competition, data, innovation, and value.

This study addresses these gaps by examining publicly observable digital practices at DisKominfo Tulungagung through the combined lens of digital leadership literature and Rogers' five domains of digital transformation.

Figure1. Figure 1. Analytical Framework of Digital Leadership and Digital Transformation in Local Government



Source: *Authors' elaboration based on Avolio et al. (2014), Bowen (2009), Cortellazzo et al. (2019), Mergel et al. (2019), Rogers (2016), and Vial (2019).*

Figure 1 shows that digital leadership functions as an enabling capability through which local government organizations respond to digital change. This response is oriented toward citizens/users, innovation, and public value and is examined through Rogers' (2016) five domains of digital transformation: customers, competition, data, innovation, and value. These domains provide an analytical lens for identifying observable digital transformation practices, such as digital service platforms, institutional communication, innovation, and collaboration. In the local government context, the framework emphasizes that digital transformation is not simply about adopting technology, but about translating technological change into organizational practices that can support more accessible, responsive, and citizen-oriented public services (Cortellazzo et al., 2019; Mergel et al., 2019; Vial, 2019).

RESEARCH METHODS

Research Design

This study used a qualitative descriptive design literature review. Design suits the objective of describing and interpreting how digital leadership is manifested in the observable digital transformation practices of one local government agency, rather than estimating causal relationships (Sandelowski, 2000; Yin, 2018). Documentary analysis served as the principal strategy because the evidence of interest, namely institutional platforms, public communication, and policy documents, exists as recorded material

that can be examined systematically without interacting with participants (Bowen, 2009).

Research Setting

The case was the Office of Communication and Informatics (DisKominfo) of Tulungagung Regency, East Java, Indonesia, formed under Regional Regulation No. 11 of 2016. The agency was selected because it holds a central institutional role in information and communication technology, government communication, and digital public services in the regency, and because its digital practices are publicly documented

Data Sources

Because the study did not involve interviews, there were no human informants; the sources themselves were the units of evidence. Two categories of secondary data were analyzed empirically: (1) official digital outputs of DisKominfo, namely the institutional website, its service menus, and the Instagram and YouTube accounts, together with publicly available documentation of the SI-TRUST tuberculosis specimen-tracking initiative; and (2) government and policy documents on digitalization and the institutional responsibilities of the agency. Peer-reviewed literature on digital leadership, digital transformation, and e-government was used only to build and interpret the analytical framework, not as evidence about the agency.

Informant Selection

Sources were selected through purposive sampling according to their relevance to the research focus (Patton, 2002; Palinkas et al., 2015). Inclusion criteria were: (1) official authorship by DisKominfo or a government body; (2) public accessibility; (3) relevance to at least one analytical domain; and (4) publication within the study period. Unofficial reports and content without a verifiable source were excluded. Source quality was appraised using the criteria of authenticity, credibility, representativeness, and meaning (Scott, 1990), which also address the question of source competence in a document-based study.

Data Collection

The researchers identified eligible materials through systematic review of the agency website and official social media accounts, followed by a search for relevant government documents. Each item was recorded in a data extraction matrix containing the source type, title or description, publication date, access date, and link. Relevant passages, features, and descriptions were then extracted and assigned to analytical domains. The extraction matrix and a document checklist were the only instruments used, and no direct contact with agency personnel occurred.

Data Analysis

The extracted evidence was analyzed using theory-driven thematic analysis (Braun & Clarke, 2006), following a deductive-inductive hybrid logic (Fereday & Muir-Cochrane, 2006). A codebook was first developed from the five domains of Rogers (2016), namely customers, competition, data, innovation, and value, and each domain was given an operational definition adapted to the public sector, for example customers as citizens and service users, and value as public value. Evidence was coded against this

codebook, while inductive codes captured practices the framework did not anticipate. Coded evidence was then compared across source types to identify convergent and divergent patterns and interpreted against the digital leadership literature (Avolio et al., 2014; Cortellazzo et al., 2019). Where documentary evidence was insufficient to support a domain, the gap was reported as a limitation rather than inferred.

Trustworthiness and Ethics

Trustworthiness was assessed through credibility, transferability, dependability, and confirmability (Lincoln & Guba, 1985; Nowell et al., 2017). Credibility was strengthened by triangulating evidence across the agency's digital platforms and government documents (Carter et al., 2014). Dependability was supported by an audit trail consisting of the dated extraction matrix and the codebook. Confirmability was supported by reflexive attention to two risks: agency platforms are self-presented communication and may overstate achievements, and leadership was inferred from observable practices rather than from leaders' own accounts. Thick contextual description supports transferability to comparable local government agencies.

The study used only publicly available institutional materials and involved no human participants, interviews, or personal data collection, so informed consent was not required. Individuals appearing in social media content were not identified, and no personal data were reproduced. All sources were cited, and platform terms of use were respected (Franzke et al., 2020).

RESULTS AND DISCUSSION

This section presents the findings of a qualitative descriptive analysis of digital leadership practices at the Office of Communication and Informatics (DisKominfo) of Tulungagung Regency, examined through the four dimensions of David L. Rogers' digital leadership framework: understanding technology, adapting technology, utilizing technology, and envisioning emerging technological opportunities. The analysis draws on secondary data sources including the agency's official website, social media channels, and publicly available documentation of digital programs implemented by DisKominfo Tulungagung.

1. Understanding Technology

The first dimension of Rogers' digital leadership framework concerns the extent to which organizational leaders demonstrate a genuine understanding of digital technology — not merely in technical terms, but as a strategic enabler for service delivery and institutional transformation. Evidence from DisKominfo Tulungagung indicates that the agency has cultivated this understanding in a tangible and publicly visible way: the development and management of its official institutional website.

Established in January 2017 following the formation of DisKominfo under Regional Regulation No. 11 of 2016, the agency's website was designed with accessibility at its core. The interface is structured to accommodate first-time users, presenting information through intuitive menus that reduce navigational barriers for citizens with limited digital experience. This design philosophy reflects a leadership orientation that understands technology not as an end in itself, but as a bridge between government and the public it serves (Mergel et al., 2019).

The decision to prioritize user-centered design in the early stages of institutional development signals a degree of strategic digital literacy among agency leadership. Rather than deploying a generic template, DisKominfo invested in a platform that communicates institutional credibility while remaining accessible. This aligns with Gil-Garcia et al.'s (2018) argument that effective public sector digital leaders must understand how technology shapes citizen expectations and tailor their digital presence accordingly. In this regard, DisKominfo's approach to its web presence reflects a foundational but meaningful level of technological understanding — one that prioritizes public value over mere institutional formality.

2. Adapting Technology

The second dimension of Rogers' framework focuses on the capacity of leaders to adapt available technology to meet the specific operational and service delivery needs of their organization. Adaptation, in this context, goes beyond simple adoption — it implies a deliberate process of tailoring digital tools to organizational context, user needs, and evolving public demands (Cortellazzo et al., 2019).

DisKominfo Tulungagung demonstrates this adaptive capacity through the ongoing development of its website's service menu structure. The platform features a diverse array of service categories, reflecting an iterative process of refinement in response to stakeholder needs. The breadth and organization of these menu options suggest that the website has not remained static since its inception; instead, it has been reconfigured over time to better serve the informational and service-access needs of Tulungagung's residents.

This iterative refinement is consistent with what Torfing et al. (2019) describe as citizen-centered public service design — a process in which leaders treat digital platforms not as fixed bureaucratic outputs, but as evolving instruments responsive to user feedback. The ability to sustain this kind of continuous adaptation requires not only technical capacity, but also leadership commitment to improvement as an ongoing organizational value. The evidence from DisKominfo suggests this commitment is present, even if resource constraints at the local government level present ongoing challenges to the pace and scope of adaptation (Hinings et al., 2018).

3. Utilizing Technology

The third dimension of Rogers' framework concerns the active utilization of technology to enhance service delivery, broaden institutional reach, and deepen public engagement. Where understanding and adaptation focus on building and refining digital capacity, utilization is about deploying that capacity in ways that generate real public value (Vial, 2019).

DisKominfo Tulungagung's use of social media platforms, particularly Instagram and YouTube represent a clear example of this dimension in practice. By maintaining active presence on these platforms, the agency extends its communication reach well beyond what a static website can achieve. Social media enables DisKominfo to disseminate public information rapidly, respond to emerging community needs, and engage with citizens in formats they already use in their daily lives.

This multi-platform communication strategy reflects a leadership understanding that effective public information services in the digital age require meeting citizens where they are, rather than expecting them to seek out government-controlled channels (Meijer & Bolívar, 2016). Instagram, with its visual format, is particularly well-suited for communicating local government activities and public service announcements to a broad, demographically diverse audience. YouTube, meanwhile, allows for longer-form informational content and documentation of public events and programs. Together, these platforms position DisKominfo

as a more visible, accessible, and communicative institution, a meaningful shift from the traditional, inward-facing posture of many local government agencies in Indonesia (Larjovuori et al., 2018).

From a digital leadership perspective, the decision to actively invest in and maintain these social media channels reflect a utilization strategy grounded in public value rather than mere institutional visibility. It signals an understanding that technology, when properly leveraged, can fundamentally alter the relationship between government and citizen transforming it from a transactional exchange into an ongoing, participatory dialogue (Schwertner, 2017).

4. Envisioning Emerging Technological Opportunities

The fourth and most forward-looking dimension of Rogers' framework concerns the capacity of digital leaders to identify and act on emerging technological opportunities — to look beyond current operational needs and envision how new digital tools might reshape the services their organizations can offer (Avolio et al., 2014). This dimension is particularly significant in the public sector context, where the gap between technological possibility and institutional adoption is often wide and slow to close.

DisKominfo Tulungagung demonstrates this capacity through its involvement in the launch of the SI-TRUST application (Sistem Informasi Treking Untuk Transportasi Spesimen Information System for Tracking Tuberculosis Specimen Transportation). Developed in collaboration with the Indonesian Cancer Foundation (Yayasan Kanker Indonesia/YKI), SI-TRUST is a digital tracking system designed to support the logistics of tuberculosis specimen delivery to laboratory testing facilities. The application enables real-time monitoring of specimen transportation, reducing the risk of delays or errors that can compromise the reliability of diagnostic results.

DisKominfo's role in promoting and supporting the launch of SI-TRUST is significant for several reasons. First, it reflects an institutional willingness to engage with emerging digital applications that address critical public health challenges a domain that extends well beyond the conventional remit of a communications and informatics office. Second, it demonstrates a capacity for cross-sector collaboration, linking the informatics agency with a civil society health organization to co-deliver a digitally enabled public service. Third, the adoption of a specialized application of this kind suggests that DisKominfo's leadership is actively scanning the technological landscape for solutions that can be adapted to local needs, rather than waiting for top-down directives from national government agencies (Mergel et al., 2019)

Taken together, DisKominfo Tulungagung's engagement with SI-TRUST illustrates the kind of forward-looking leadership orientation that Rogers' framework identifies as essential for institutional resilience in the face of rapid technological change. While the application addresses a specific and relatively narrow operational challenge, its adoption signals a broader organizational disposition toward technological experimentation and innovation — a disposition that, if sustained and expanded, positions DisKominfo as a meaningful driver of digital public service development in the Tulungagung region.

Summary of Findings

Across all four dimensions of Rogers' digital leadership framework, DisKominfo Tulungagung demonstrates evidence of meaningful, if still developing, digital leadership capacity. The agency has built an accessible and user-centered web presence, sustained an adaptive approach to service menu development, deployed social media platforms as active channels of public communication, and engaged with emerging digital applications that extend its service impact into new domains. These findings are summarized in Table 1.

Table 1. Digital Leadership Implementation at DisKominfo Tulungagung

Dimension	Observable Evidence	Key Implication
Understanding Technology	Development of an accessible, user-friendly institutional website since January 2017; intuitive menu design accommodating first-time users	Leadership recognizes technology as a bridge to citizens, not merely an administrative tool
Adapting Technology	Iterative refinement of website service menu structure; diverse service categories tailored to evolving stakeholder needs	Organizational commitment to continuous improvement and citizen-centered service design
Utilizing Technology	Active multi-platform social media presence via Instagram and YouTube for public information dissemination	Strategic use of technology to extend institutional reach and foster participatory government-citizen communication
Envisioning New Technology	Support and promotion of the SI-TRUST application for real-time tuberculosis specimen tracking in collaboration with YKI	Cross-sector digital innovation beyond conventional remit; forward-looking leadership scanning for emerging solutions

What is equally notable, however, is what the evidence also reveals about the limits of digital leadership at this level of government. The innovations identified a well-designed website, active social media use, and the adoption of one specialized application are meaningful but modest in scale. They reflect the structural realities of local government agencies in developing country contexts: limited budgets, constrained institutional capacity, and a dependency on national policy frameworks that often move more slowly than the technological environment they seek to govern (Gil-Garcia et al., 2018; Schwertner, 2017). DisKominfo Tulungagung has navigated these constraints with ingenuity, but the broader challenge of sustainable, system-wide digital transformation remains.

CONCLUSION

This study set out to examine how digital leadership is implemented at the Tulungagung Regency Office of Communication and Informatics (DisKominfo) in the context of the Fourth Industrial Revolution, using David L. Rogers' four-dimensional framework as its analytical lens. The findings indicate that DisKominfo Tulungagung has, across all four dimensions understanding, adapting, utilizing, and envisioning new technology demonstrated tangible evidence of digital leadership in practice. The agency has developed an accessible and user-centered institutional website since 2017, refined its service menu structure through iterative adaptation, actively leveraged social media platforms such as Instagram and YouTube to broaden its public communication reach, and engaged with an emerging digital health application (SI-TRUST) that extends its institutional impact into cross-sector public service delivery. These accomplishments reflect a leadership orientation that treats digital technology not merely as an administrative tool, but as a strategic instrument for improving the quality, accessibility, and responsiveness of local government services. At the same time, the scope of these innovations must be understood within the structural realities of local governance in a developing country setting, where resource constraints, uneven digital infrastructure, and institutional capacity gaps continue to condition the pace and ambition of digital transformation. DisKominfo Tulungagung's experience thus offers a constructive example of how subnational government agencies can exercise meaningful digital leadership even under such conditions, while also underscoring the need for sustained institutional support, capacity investment, and enabling policy frameworks at higher levels of government to allow that leadership to scale. Future research should extend this analysis through primary data collection including in-depth interviews with DisKominfo leadership and staff to capture the organizational dynamics, decision-making processes, and implementation challenges that secondary data sources cannot fully illuminate.

REFERENCES

Avolio, B. J., Sosik, J. J., Kahai, S. S., & Baker, B. (2014). E-leadership: Re-examining transformations in leadership source and transmission. The Leadership Quarterly, 25(1), 105–131. https://doi.org/10.1016/j.leaqua.2013.11.003

Carter, N., Bryant-Lukosius, D., DiCenso, A., Blythe, J., & Neville, A. J. (2014). The use of triangulation in qualitative research. *Oncology Nursing Forum*, *41*(5), 545–547. https://doi.org/10.1188/14.ONF.545-547

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Bowen, G. A. (2009). Document analysis as a qualitative research method. *Qualitative Research Journal*, *9*(2), 27–40. https://doi.org/10.3316/QRJ0902027

Cortellazzo, L., Bruni, E., & Zampieri, R. (2019). The role of leadership in a digitalized world: A review. Frontiers in Psychology, 10, 1938. https://doi.org/10.3389/fpsyg.2019.01938

Franzke, A. S., Bechmann, A., Zimmer, M., Ess, C., & the Association of Internet Researchers. (2020). *Internet research: Ethical guidelines 3.0*. Association of Internet Researchers.

Fereday, J., & Muir-Cochrane, E. (2006). Demonstrating rigor using thematic analysis: A hybrid approach of inductive and deductive coding and theme development. *International Journal of Qualitative Methods*, *5*(1), 80–92. https://doi.org/10.1177/160940690600500107

Gil-Garcia, J. R., Dawes, S. S., & Pardo, T. A. (2018). Digital government and public management research: Finding the crossroads. Public Management Review, 20(5), 633–646. https://doi.org/10.1080/14719037.2017.1327181

Hinings, B., Gegenhuber, T., & Greenwood, R. (2018). Digital innovation and transformation: An institutional perspective. Information and Organization, 28(1), 52–61. https://doi.org/10.1016/j.infoandorg.2018.02.004

Layne, K., & Lee, J. (2001). Developing fully functional e-government: A four stage model. Government Information Quarterly, 18(2), 122–136. https://doi.org/10.1016/S0740-624X(01)00066-1

Larjovuori, R. L., Bordi, L., & Heikkilä-Tammi, K. (2018). Leadership in the digital business transformation. Proceedings of the 22nd International Academic Mindtrek Conference, 212–221. https://doi.org/10.1145/3275116.3275122

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. SAGE.

Meijer, A., & Bolívar, M. P. R. (2016). Governing the smart city: A review of the literature on smart urban governance. International Review of Administrative Sciences, 82(2), 392–408. https://doi.org/10.1177/0020852314564308

Mergel, I., Edelmann, N., & Haug, N. (2019). Defining digital transformation: Results from expert interviews. Government Information Quarterly, 36(4), 101–385. https://doi.org/10.1016/j.giq.2019.06.002

Moon, M. J. (2002). The evolution of e-government among municipalities: Rhetoric or reality? Public Administration Review, 62(4), 424–433. https://doi.org/10.1111/0033-3352.00196

Patton, M. Q. (2002). *Qualitative research and evaluation methods* (3rd ed.). SAGE.

Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2015). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Administration and Policy in Mental Health and Mental Health Services Research*, *42*(5), 533–544. https://doi.org/10.1007/s10488-013-0528-y

Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic analysis: Striving to meet the trustworthiness criteria. *International Journal of Qualitative Methods*, *16*(1), 1–13. https://doi.org/10.1177/1609406917733847

Rogers, D. L. (2016). The digital transformation playbook: Rethink your business for the digital age. Columbia University Press.

Sandelowski, M. (2000). Whatever happened to qualitative description? *Research in Nursing & Health*, *23*(4), 334–340.

Sarjito, A. (n.d.). Model kepemimpinan digital di era revolusi industri 4.0. Universitas Pertahanan Indonesia.

Schwab, K. (2016). The fourth industrial revolution. World Economic Forum.

Schwertner, K. (2017). Digital transformation of business. Trakia Journal of Sciences, 15(1), 388–393. https://doi.org/10.15547/tjs.2017.s.01.065

Scott, J. (1990). *A matter of record: Documentary sources in social research*. Polity Press.

Torfing, J., Sørensen, E., & Røiseland, A. (2019). Transforming the public sector into an arena for co-creation: Barriers, drivers, benefits, and ways forward. Administration & Society, 51(5), 795–825. https://doi.org/10.1177/0095399716680057

Tulungen, E. E., Maramis, J. B., & Saerang, D. P. (2022). Digital transformation: Role of digital leadership. Jurnal EMBA, 10(2), 1116–1123.

Vial, G. (2019). Understanding digital transformation: A review and a research agenda. Journal of Strategic Information Systems, 28(2), 118–144. https://doi.org/10.1016/j.jsis.2019.01.003

West, D. M. (2004). E-government and the transformation of service delivery and citizen attitudes. Public Administration Review, 64(1), 15–27. https://doi.org/10.1111/j.1540-6210.2004.00343.x

Yin, R. K. (2018). *Case study research and applications: Design and methods* (6th ed.). SAGE