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Digital Transformation Practices and Government Service Delivery in Developing Countries

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Digital Transformation Practices and Government Service Delivery in Developing Countries

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Abstract

Purpose: The purpose of this study is to examine the effect of digital transformation practices on government service delivery in developing countries. Specifically, the study seeks to analyse how technological infrastructure, digital competencies, and process automation influence key service delivery outcomes, including accessibility, timeliness, and user satisfaction, within the context of public sector institutions.

Methodology: The study adopted a critical desktop review research design. Data were drawn from peer-reviewed journal articles, policy reports, and empirical studies published between 2018 and 2024. Sources were retrieved from Scopus, Web of Science, Google Scholar, and selected institutional repositories using keywords related to digital transformation, government service delivery, technological infrastructure, digital competencies, automation, and developing countries. Study selection was guided by relevance, methodological rigor, and alignment with the study variables. A thematic analysis approach was employed to compare findings across global, developing-country, and African contexts and to identify empirical, conceptual, and contextual gaps.

Findings: The findings indicate that technological infrastructure is a foundational enabler of effective government service delivery, as system reliability, interoperability, and connectivity directly influence service accessibility and processing speed. Digital competencies among public servants were found to be a critical operational driver, shaping system utilization, institutional responsiveness, and service quality. Process automation emerged as a key efficiency mechanism that enhances service timeliness, accuracy, and transparency, although its adoption remains limited in many developing countries. The study further reveals strong interdependencies among the three dimensions, suggesting that isolated digital interventions are insufficient to achieve sustainable service delivery improvements.

Unique Contribution to Theory, Practice and Policy: The study is informed by the Diffusion of Innovations theory and the Technology–Organization–Environment framework, which jointly explain technology adoption and institutional readiness in public sector contexts. The findings validate the applicability of these frameworks in developing-country settings. For practice, the study recommends integrated digital transformation strategies that simultaneously strengthen infrastructure, build digital skills, and expand automation. From a policy perspective, the study underscores the need for coherent legislative frameworks that promote interoperability, data protection, accountability, and sustained investment in digital public services.

Keywords: *Digital Transformation, Government Service Delivery, Technological Infrastructure, Digital Competencies, Process Automation*

JEL Codes: *H11, H83, O33, O38, L86*

INTRODUCTION

Digital transformation has become a central element of public sector reform, particularly in developing countries where governments face persistent challenges related to service inefficiency, limited accessibility, and declining public trust. As citizens increasingly interact with digital technologies in everyday life, expectations for responsive, transparent, and user-oriented government services have intensified. In response, many developing-country governments have adopted digital transformation initiatives aimed at modernising administrative processes and improving service delivery outcomes. However, despite growing investment in digital systems, evidence suggests that improvements in service delivery remain uneven and context-dependent.

Much of the existing discourse on digital government draws heavily on experiences from high-income countries such as Estonia, Singapore, and South Korea, where digital transformation has been supported by strong state capacity, mature governance institutions, high levels of digital literacy, and sustained public investment. While these cases provide useful conceptual insights, their institutional, economic, and administrative conditions differ substantially from those prevailing in most developing countries. Direct policy transfer from such contexts risks overlooking structural constraints common in developing settings, including weaker institutional capacity, fragmented governance arrangements, limited fiscal space, and uneven digital infrastructure. Acknowledging these contextual differences is therefore essential to avoid normative assumptions that digital transformation trajectories are universally replicable.

In the African context, digital transformation initiatives have gained prominence as governments seek to improve service delivery while managing resource constraints and institutional limitations. Although several countries have introduced digital platforms to streamline public services, progress has often been constrained by infrastructural gaps, limited digital competencies within the public sector, weak policy enforcement, and inconsistent implementation across agencies. These challenges underscore the need for context-sensitive analyses that move beyond technological optimism and examine how specific digital transformation practices operate within developing-country public administrations.

Kenya exemplifies this tension between ambition and constraint. The establishment of Huduma Centres represented a significant effort to modernise service delivery through integrated, citizen-focused platforms. While these centres have improved coordination and access to services, persistent challenges, such as system downtimes, reliance on manual back-office processes, and uneven staff digital capabilities, continue to affect service timeliness, reliability, and user satisfaction. Moreover, although national initiatives such as the Kenya Digital Masterplan (2022–2032) signal policy commitment, systematic evidence on how digital transformation practices translate into improved service delivery remains limited.

Against this backdrop, this paper adopts a critical literature review approach to examine how three dimensions of digital transformation, technological infrastructure, digital competencies, and process automation, shape government service delivery in developing countries. Rather than presenting new empirical data, the study conceptually integrates and analyses existing empirical and theoretical literature to identify patterns, contextual constraints, and research gaps. By doing so, the paper seeks to provide a grounded understanding of digital transformation that is sensitive to institutional realities in developing-country contexts and to inform both scholarly debate and policy practice.

Digital Transformation in Developing Countries

In developing countries, digital transformation is commonly pursued as a response to persistent service delivery challenges such as bureaucratic inefficiency, long waiting times, corruption, and limited access to essential public services. However, the literature consistently demonstrates that outcomes are uneven due to variations in structural capacity, fiscal space, and institutional quality. Studies across Asia, Latin America, and parts of the Middle East identify inadequate technological infrastructure as a major constraint, particularly where governments rely on legacy systems that lack interoperability and scalability (Setyawan, 2024; Zaoui & Souissi, 2020). Frequent system downtimes, poor connectivity, and weak cybersecurity frameworks undermine platform reliability, resulting in inconsistent service delivery despite growing digital investments (Li & Xu, 2024; Filgueiras et al., 2019).

Analytical contrasts within the developing world further illuminate why similar digital reforms yield divergent outcomes. India's large-scale initiatives, such as Aadhaar and integrated e-government platforms, have achieved broader adoption and institutionalization compared to many African counterparts, largely due to stronger bureaucratic capacity, centralized administrative authority, and sustained political commitment (Khera, 2019; Margetts et al., 2013). In contrast, many African states operate within fragmented governance systems, constrained fiscal environments, and weaker enforcement capacity, limiting the scalability of digital reforms (Khanna et al., 2019; Mukhopadhyay et al., 2019). These differences caution against implicit assumptions of policy transferability across developing-country contexts.

Digital competencies represent another critical factor shaping uneven digital transformation outcomes. Many developing countries face persistent shortages of skilled ICT personnel at both strategic and operational levels, leading to underutilization of digital platforms and inefficient hybrid workflows that combine manual and digital processes (Idrus et al., 2024; Mensah et al., 2021). From a political economy perspective, institutional resistance further constrains adoption, as digital systems can threaten entrenched rent-seeking practices, discretionary authority, and informal bureaucratic arrangements (Peixoto & Fox, 2016; Fukuyama, 2013). As a result, digital reforms may be selectively implemented or deliberately constrained, weakening their transformative potential.

Process automation remains particularly underdeveloped across much of the developing world. While pilot automation initiatives exist, many governments continue to rely heavily on manual or semi-automated back-office processes, limiting efficiency gains and service scalability (Tangi et al., 2021; Van Welie et al., 2020). Fragmented regulatory environments and outdated policy frameworks further inhibit automation by constraining standardization, data interoperability, and accountability mechanisms (Alvarenga et al., 2020; OECD, 2024). Nonetheless, cases such as India, Brazil, and Indonesia demonstrate that sustained investment in automation and data governance, when supported by political will, can improve service delivery outcomes (Siderska, 2020; World Bank, 2022).

Across Africa, digital transformation trajectories differ markedly between low-income, middle-income, and digitally advanced states. Low-income countries face severe infrastructural deficits and fiscal constraints that restrict even basic digital service provision, while middle-income countries such as Kenya and Ghana have achieved progress in front-end digitization but struggle with back-end integration and automation (Mensah et al., 2021; Nyamai & Njagi, 2023). Digitally advanced African states, notably Rwanda and South Africa, have demonstrated more coherent outcomes due to stronger state coordination, policy

coherence, and investment in human capital, although challenges of inclusivity and sustainability remain (Mukhopadhyay et al., 2019; Van Welie et al., 2020).

Overall, the literature reveals persistent empirical, conceptual, and contextual gaps. Empirical studies on digital transformation remain disproportionately focused on developed-country contexts, with limited attention to African public-sector institutions and their unique political economy dynamics (Kraus et al., 2021; Alvarenga et al., 2020). Few studies integrate technological infrastructure, digital competencies, and process automation within a unified analytical framework, and rapid post–COVID-19 digitalization has outpaced scholarly analysis, leaving limited evidence on the long-term service delivery impacts of emerging technologies (Haug et al., 2024; OECD, 2024). These gaps underscore the need for context-sensitive and institutionally grounded research on digital transformation in developing countries.

Statement of the Problem

Despite global advancements in digital governance, government service delivery in many developing countries continues to be characterised by persistent inefficiencies, including long waiting times, limited accessibility, bureaucratic delays, and low levels of user satisfaction. Although digital transformation practices have been widely adopted to address these challenges, evidence suggests that their effectiveness remains uneven and frequently constrained by infrastructural weaknesses and institutional capacity limitations (Setyawan, 2024; Idrus et al., 2024). In Kenya, the establishment of Huduma Centres was intended to streamline public service delivery through centralised access points; however, persistent challenges such as frequent system failures, inadequate technological infrastructure, staff digital skills gaps, and slow service turnaround times continue to undermine service quality and reliability (Koech & Bett, 2023; Nyamai & Njagi, 2023). Similar patterns are reported across other developing-country contexts, where fragmented technological systems, low digital literacy, and infrastructural deficiencies limit service delivery improvements despite sustained investments in digital transformation initiatives (Kasmiah et al., 2024; Filgueiras et al., 2019).

A central gap in the existing literature lies in its disproportionate focus on digital transformation experiences in developed countries, resulting in limited contextual understanding of how digital transformation practices function within the institutional, fiscal, and governance constraints prevalent in developing-country public sectors (Filgueiras et al., 2019; Setyawan, 2024). This limits the applicability of prevailing digital government models to contexts characterised by weaker state capacity, uneven infrastructure, and fragmented administrative systems. Furthermore, empirical studies tend to examine isolated elements of digital transformation, such as technological infrastructure or digital competencies, without analysing how these dimensions interact to influence core service delivery outcomes, including accessibility, timeliness, and user satisfaction (Idrus et al., 2024; Kasmiah et al., 2024).

Another critical yet underexplored gap concerns the role of enabling legislation and policy frameworks in shaping digital transformation outcomes. While legislation is fundamental in guiding technology adoption, promoting interoperability, and enforcing accountability, it is rarely integrated into empirical analyses of digital service delivery in developing countries (Nyamai & Njagi, 2023; Koech & Bett, 2023). Additionally, the rapid acceleration of digital transformation during and after the COVID-19 pandemic has outpaced scholarly inquiry, creating a temporal gap in understanding how newly adopted digital technologies and

regulatory responses are reshaping public service delivery dynamics (Arifianti & Sakapurnama, 2024).

Consequently, there remains a critical need for integrated and context-sensitive analyses that synthesise evidence across technological, institutional, and legislative dimensions. This study addresses these empirical, contextual, conceptual, and temporal gaps by critically reviewing global and African literature on digital transformation practices and their effects on government service delivery in developing countries, with particular attention to the enabling role of legislation.

LITERATURE REVIEW

The literature on digital transformation and government service delivery has expanded substantially as governments across different regions adopt digital technologies to respond to rising citizen expectations, improve administrative efficiency, and enhance coordination across public institutions. Existing studies generally agree that digital transformation has the potential to improve accessibility, timeliness, and transparency in service delivery; however, outcomes vary significantly across contexts and are shaped by institutional capacity, governance quality, and political economy dynamics (Kraus et al., 2021; Filgueiras et al., 2019). Beyond intended efficiency gains, recent scholarship increasingly highlights unintended consequences and systemic risks associated with digital transformation, including excessive system centralization, cybersecurity vulnerabilities, digital exclusion, and accountability gaps, particularly in developing-country contexts where regulatory and oversight mechanisms remain weak (Zaoui & Souissi, 2020; OECD, 2024).

Technological Infrastructure and Service Delivery

Technological infrastructure is widely recognised as a foundational determinant of effective digital service delivery. Empirical studies from Europe and Asia demonstrate that reliable, interoperable, and scalable infrastructure enhances system accessibility, reduces service downtime, and supports timely and accurate service provision (Li & Xu, 2024; Kraus et al., 2021). High-income countries such as Estonia, Singapore, and South Korea have invested heavily in secure digital identity systems, interoperable databases, and high-speed connectivity, enabling seamless integration of public services and improved user experience. However, these successes are underpinned by strong state capacity, mature governance institutions, and sustained fiscal investment, conditions that differ markedly from those in many developing countries (Margetts et al., 2013; Haug et al., 2024).

In developing countries, infrastructural weaknesses, including reliance on legacy systems, poor connectivity, limited cybersecurity capacity, and lack of interoperability, frequently undermine digital service delivery outcomes (Nurfadilah & Haliah, 2024; Setyawan, 2024). Moreover, the literature highlights unintended consequences of infrastructure centralization, where highly centralized digital platforms can create single points of failure, heighten systemic cyber risks, and increase vulnerability to service disruption or data breaches (Zaoui & Souissi, 2020; OECD, 2024). These risks are particularly pronounced in contexts where cybersecurity governance, redundancy planning, and institutional accountability mechanisms are underdeveloped.

Digital Competencies and Service Delivery

Digital competencies among public servants are consistently identified as a critical factor influencing the effectiveness of digital transformation initiatives. Studies show that high levels

of digital literacy enable public employees to utilise systems efficiently, resolve technical challenges, and engage citizens more responsively, thereby improving service quality and satisfaction (OECD, 2024; Mensah et al., 2021). In contrast, low digital competencies contribute to underutilisation of digital platforms, inefficient hybrid workflows, and persistent reliance on manual processes, even when digital systems are available (Idrus et al., 2024; Kasmiah et al., 2024).

Beyond skills deficits, the literature highlights deeper institutional and political economy concerns. Digital transformation may encounter resistance from bureaucratic actors who perceive digital systems as threats to discretionary authority, informal practices, or rent-seeking opportunities (Fukuyama, 2013; Peixoto & Fox, 2016). Additionally, limited competencies in data governance and algorithmic oversight raise concerns about accountability gaps, particularly where automated or data-driven decision systems are introduced without adequate institutional safeguards. These gaps increase the risk of opaque decision-making, weakened redress mechanisms, and diminished public trust in digital service systems (OECD, 2024; Filgueiras et al., 2019).

Process Automation and Service Delivery

Process automation is widely associated with efficiency gains in government service delivery, including faster processing times, reduced human error, and greater procedural consistency (Siderska, 2020; Waszkowski, 2019). In digitally advanced contexts, automation has been applied to high-volume functions such as tax administration, licensing, civil registration, and social protection, yielding improvements in timeliness and transparency. However, the literature increasingly cautions that automation also introduces significant risks when implemented without adequate oversight.

In developing countries, limited automation adoption often results in continued dependence on manual or semi-automated processes, constraining scalability and efficiency (Tangi et al., 2021; Van Welie et al., 2020). Where automation is implemented, concerns arise regarding algorithmic bias, exclusion of digitally marginalised populations, and reduced human discretion in cases requiring contextual judgment (Eubanks, 2018; OECD, 2024). These risks are amplified in environments with weak regulatory frameworks, limited data quality controls, and insufficient mechanisms for accountability and appeal. Consequently, while automation holds promise for improving service delivery, the literature underscores the need for cautious, inclusive, and well-governed implementation strategies.

Identified Gaps

Collectively, the literature reveals that digital transformation practices influence government service delivery through complex and interdependent mechanisms shaped by technological, institutional, and political economy factors. While global experiences offer valuable insights, their applicability to developing-country contexts remains constrained by differences in state capacity, governance maturity, and socio-economic conditions (Margetts et al., 2013; Khanna et al., 2019). Moreover, existing studies often focus on intended efficiency gains while insufficiently addressing unintended consequences such as cyber risks, exclusion, algorithmic bias, and accountability deficits. The limited integration of technological infrastructure, digital competencies, and process automation within a unified analytical framework, particularly in African public-sector contexts, constitutes a significant gap that this study seeks to address.

Theoretical Framework

This study is grounded in two complementary theoretical perspectives that together explain both the behavioural dynamics of technology adoption and the institutional conditions under which digital transformation occurs in public service delivery: the Diffusion of Innovations (DOI) theory and the Technology–Organization–Environment (TOE) framework. While DOI focuses on how and why individuals and organizations adopt new technologies, TOE explains the broader structural, organizational, and environmental conditions that enable or constrain such adoption within public institutions.

Diffusion of Innovations (DOI) Theory

Rogers' Diffusion of Innovations (DOI) theory (2003) explains adoption behaviour by examining how innovations are perceived and taken up over time within social systems. The theory posits that adoption is influenced by five core attributes: relative advantage, compatibility, complexity, trialability, and observability (Agafonova et al., 2021). In the context of government digital transformation, DOI is particularly useful for understanding how public servants and institutions respond to new digital tools and service delivery models.

Within this study, technological infrastructure is linked to DOI through the attributes of relative advantage and complexity. Reliable and interoperable infrastructure enhances the perceived usefulness of digital systems while reducing technical complexity, thereby increasing the likelihood of adoption. Digital competencies map onto DOI through compatibility and trialability, as staff with adequate digital skills are better able to experiment with new systems, integrate them into existing workflows, and adapt to technological change. Process automation aligns most strongly with observability, as automated workflows make efficiency gains, speed, and error reduction visible to users and managers, reinforcing positive perceptions and encouraging wider adoption. However, DOI has been critiqued for its limited ability to account for institutional constraints common in developing-country public sectors, such as rigid bureaucratic structures, resource scarcity, and political resistance to change (Margetts et al., 2013; Khanna et al., 2019).

Technology-Organization-Environment (TOE) Framework

The Technology–Organization–Environment (TOE) framework (Tornatzky & Fleischer, 1990) complements DOI by explaining the institutional conditions that shape technology adoption beyond individual or organisational perceptions. TOE conceptualises adoption as being influenced by three interacting contexts: technological, organisational, and environmental. The technological context refers to the availability, quality, and compatibility of digital infrastructure and tools; the organisational context encompasses internal capabilities such as skills, resources, leadership, and structural arrangements; and the environmental context includes external forces such as legislation, regulatory frameworks, political pressures, and stakeholder expectations.

In this study, technological infrastructure is situated within the technological context of TOE, as system readiness, interoperability, and reliability determine whether digital transformation initiatives can be implemented at scale. Digital competencies correspond to the organisational context, as workforce skills and institutional capacity directly influence the effectiveness and sustainability of digital transformation. Process automation spans both the technological and organisational contexts, as it depends on appropriate technologies while simultaneously reshaping organisational workflows and decision-making processes. The environmental

context is particularly relevant in developing countries, where legislation, policy coherence, and regulatory enforcement significantly enable or constrain digital transformation efforts. Although TOE provides a robust framework for analysing institutional readiness, it has been criticised for insufficiently addressing rapid technological evolution and sociopolitical complexity (Rusdi et al., 2023).
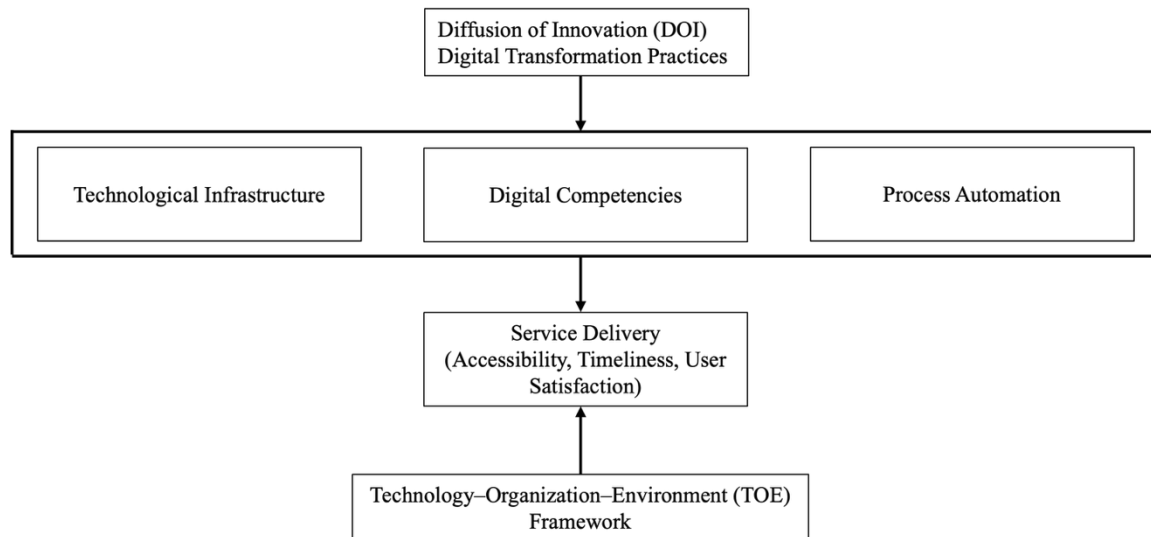

Figure 1: Theoretical Framework Integrating Diffusion of Innovations and the TOE Framework

Source: Okeyo et al. (2026)

Conceptual Framework

The study presents a model that explains the relationship between digital transformation practices and government service delivery in developing countries. Digital transformation practices, represented by technological infrastructure, digital competencies, and process automation, are treated as the independent variables influencing service delivery outcomes, which are assessed through accessibility, timeliness, and user satisfaction. Technological infrastructure provides the foundational systems necessary for digital service provision, digital competencies shape the effective use of these systems by public servants, and process automation enhances efficiency, consistency, and transparency in service processes. Collectively, these dimensions are expected to influence the overall effectiveness of government service delivery.
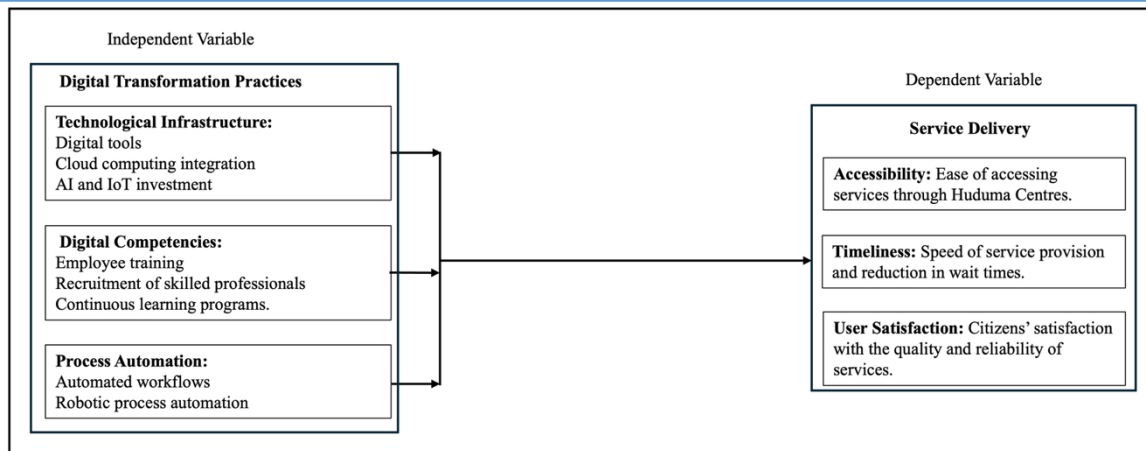
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Figure 2: Conceptual Framework Illustrating the Relationship between Digital Transformation Practices and Government Service Delivery Outcomes

Source: Okeyo et al. (2026)

Empirical Review

Empirical studies on digital transformation and government service delivery demonstrate a growing consensus on the positive relationship between the adoption of digital technologies and improvements in public sector performance. Kraus et al. (2021) conducted a systematic review of digital transformation initiatives across public institutions in developed economies and found that investments in technological infrastructure significantly enhanced service efficiency, accessibility, and administrative coordination. Their findings emphasized that interoperable systems and reliable digital platforms reduce service turnaround times and improve citizen satisfaction. Similarly, Li and Xu (2024) examined digital government initiatives in selected Asian countries and established that robust ICT infrastructure positively influenced service delivery outcomes, particularly in terms of timeliness and reliability, while weak infrastructure contributed to frequent system failures and service delays.

Other empirical studies have focused on the role of digital competencies in public service delivery. Mensah et al. (2021), in a study of Sub-Saharan African public institutions, found that digital skills among public servants were strongly associated with effective system utilization and improved service responsiveness. Their results indicated that organizations with higher levels of digital literacy experienced fewer operational disruptions and better citizen engagement. OECD (2024) further reported that continuous digital skills development enhances institutional adaptability and supports sustainable digital transformation in public administration. In contrast, Idrus et al. (2024) observed that limited digital competencies in developing-country governments led to underutilization of digital platforms, persistent reliance on manual processes, and inconsistent service quality.

Process automation has also been empirically linked to improved government service delivery. Siderska (2020) analyzed the adoption of robotic process automation in public administration and found that automation reduced processing time, minimized human error, and increased transparency in service provision. Tangi et al. (2021) similarly reported that automation initiatives in government agencies enhanced efficiency and accountability; however, their study noted that adoption levels remain low in many developing countries, limiting the overall impact of digital transformation on service delivery.

Research Gaps

Despite the growing body of empirical literature, several gaps remain evident. First, most existing studies are concentrated in developed-country contexts, limiting the applicability of findings to developing countries where institutional capacities, resource constraints, and regulatory environments differ significantly. Second, many studies examine technological infrastructure, digital competencies, or process automation in isolation, with limited integration of these dimensions within a unified analytical framework. Third, there is a notable lack of empirical evidence focusing on African public sector institutions, particularly concerning how contextual factors such as policy enforcement, digital divides, and institutional resistance shape digital transformation outcomes. Finally, few studies adopt a holistic perspective that links digital transformation practices directly to multiple service delivery outcomes, including accessibility, timeliness, and user satisfaction. These gaps underscore the need for comprehensive reviews that integrate fragmented evidence and provide context-specific insights into digital transformation and government service delivery in developing countries.

METHODOLOGY

This study utilised a critical desktop review methodology, which aggregates peer-reviewed articles, policy reports, and empirical studies published between 2018 and 2024. Searches were executed in databases such as Scopus, Web of Science, Google Scholar, and institutional repositories, employing keywords pertinent to digital transformation, service delivery, automation, digital competencies, and developing countries (Maulana & Dečman, 2023). The selection process was governed by criteria related to relevance, methodological rigor, and alignment with the study variables. A thematic analysis approach was implemented to facilitate a comparison of findings across varied contexts, aiming to identify patterns and elucidate empirical, conceptual, and contextual gaps that influence digital transformation and government service delivery in developing-country environments (Maulana & Dečman, 2023; Kraus et al., 2021; Shibambu, 2024). The employed methodology aligns with the growing recognition of collaboration in digital transformation within public governance, as established by recent literature exploring collaborative governance frameworks. Additionally, the reliance on systematic reviews as a methodological framework reflects a broader trend in public administration research, emphasising the importance of empirical evidence in formulating strategies for digital initiatives.

RESULTS

The comprehensive review of the literature indicates that digital transformation practices, particularly in terms of technological infrastructure, digital competencies, and process automation, significantly shape government service delivery outcomes in developing countries. Notably, while digital transformation is recognized for its potential to improve accessibility, timeliness, and user satisfaction, its effectiveness is inextricably linked to the readiness and capacity of public institutions to implement and sustain digital systems effectively (Shibambu, 2024; Maulana & Dečman, 2023; Kraus et al., 2021).

Technological infrastructure emerges as a crucial determinant for effective digital service delivery. Studies reveal that robust and stable infrastructure enables seamless functioning of government digital platforms, thereby ensuring minimal service interruptions and fostering public trust (Wang et al., 2023). Countries boasting advanced digital ecosystems, such as Estonia and Singapore, exemplify the efficacy of strong infrastructures in enhancing service delivery speed and improving user experiences (Shibambu, 2024; Kraus et al., 2021).

Conversely, developing nations frequently contend with infrastructural inadequacies, such as outdated hardware and inconsistent power supplies, which hinder the successful implementation of digital transformation initiatives (Wang et al., 2023; Fang et al., 2024; Hanifah & Wicaksana, 2024). Observations from Kenya and other African nations illustrate that significant challenges, including long queues at service points due to system downtimes, underscore the crucial role of maintenance and upgrades in the infrastructure to meet public service demands effectively (Fang et al., 2024; Hanifah & Wicaksana, 2024; Hong et al., 2017).

Moreover, the findings underscore the importance of digital competencies among public servants in facilitating successful digital transformation initiatives. Competent public servants, equipped with technical skills, problem-solving abilities, and digital literacy, demonstrate a greater capacity for effective system utilization, thereby improving institutional responsiveness and service transaction accuracy (Hanifah & Wicaksana, 2024; Pribadi, 2023). Conversely, environments characterised by low digital skills face prolonged system adoption and increased reliance on manual processes, ultimately leading to inefficiencies in service delivery (Shibambu & Ngoepe, 2024; Kraus et al., 2021; Hong et al., 2017). The literature points to substantial gaps in training and professional development that exacerbate these challenges, underscoring the necessity for continuous skill enhancement initiatives (Fabinska, 2023; Pribadi, 2023).

Process automation is another critical aspect that significantly enhances service delivery by improving speed, accuracy, and transparency in administrative procedures. Automated systems, which minimize human intervention in repetitive tasks, lead to faster processing times and increased citizen satisfaction (Mattsson & Andersson, 2019; Wang et al., 2023). Nonetheless, in many developing countries, automation efforts remain insufficient, relying heavily on manual workflows that prolong service turnaround times and contribute to administrative burdens (Hong et al., 2017; Mattsson & Andersson, 2019; Fang et al., 2024). The challenges posed by a lack of automated data integration across government agencies notably hinder the capacity to track service performance, thereby limiting effective decision-making (Pribadi, 2023).

The interdependency among technological infrastructure, digital competencies, and process automation is evident in the overall service delivery outcomes. Even with good infrastructure, low digital competencies can impede effective system utilization, while inadequate automation capabilities undermine potential efficiencies. These findings highlight the imperative for an integrated approach to digital transformation that simultaneously addresses technological, human, and procedural factors (Fang et al., 2024; Pribadi, 2023; Mattsson & Andersson, 2019). Furthermore, enabling legislative and policy frameworks significantly shape the outcomes of digital transformation initiatives. Effective legislation that establishes standards for data protection and interoperability has been shown to promote the successful adoption of digital technologies (Shibambu, 2024; Wang et al., 2023; Hong et al., 2017). In contrast, the absence of robust policies often leads to inconsistencies in implementation across varying government sectors, further exacerbating digital integration challenges (Mattsson & Andersson, 2019; Pribadi, 2023).

SUMMARY, CONCLUSION AND RECOMMENDATIONS

Summary

The study established that digital transformation practices significantly influence government service delivery in developing countries. The findings indicate that technological infrastructure

plays a critical role in enhancing service accessibility, system reliability, and timeliness across public service delivery points. The study further revealed that digital competencies among public servants greatly affect the effective utilization of digital systems, responsiveness to citizen needs, and overall service quality. In addition, process automation was found to improve efficiency, reduce processing delays, minimize human error, and enhance transparency in administrative procedures. The study also indicated that the effectiveness of digital transformation initiatives is strengthened by supportive legislative and policy frameworks that promote interoperability, accountability, and data protection. Overall, the findings demonstrate that an integrated approach aligning technological infrastructure, workforce digital skills, automation, and enabling policies is essential for improving government service delivery outcomes and enhancing citizen satisfaction in developing-country contexts.

Conclusion

In conclusion, this study affirms that digital transformation, grounded in technological infrastructure, digital competencies, and process automation, is pivotal in enhancing government service delivery in developing countries. Strong technological infrastructure undergirds reliable digital services, while skilled public servants facilitate effective system usage and citizen engagement (Shibambu, 2024; Ting et al., 2022; Mattsson & Andersson, 2019). Process automation serves as a catalyst, minimizing manual workloads and enhancing procedural transparency. Nevertheless, the study also identifies persistent challenges that curtail the effectiveness of digital transformation initiatives, highlighting the necessity for sustained strategic planning, capacity development, and investment (Maulana & Dečman, 2023; Pribadi, 2023).

Recommendations

To optimise digital transformation outcomes in public service delivery, governments in developing countries should prioritize strengthening technological infrastructure to ensure system reliability, continuity, and scalability across all service points, while simultaneously investing in continuous digital skills development for the public sector workforce. Expanding process automation initiatives is equally critical, as automation enhances efficiency, reduces service delays, and promotes consistency in service delivery. In addition, the establishment and enforcement of clear legislative and policy frameworks are essential to support successful digital transformation by facilitating data interoperability, safeguarding information integrity, and strengthening institutional accountability. Adopting a citizen-centered approach that emphasizes accessibility, simplicity, and inclusivity is also necessary to ensure that the benefits of digital transformation are equitably distributed and that public trust in government processes is reinforced. Although digital transformation offers substantial opportunities to enhance government service delivery, realizing its full potential requires an integrated approach that aligns technological investments, human resource capacity, and policy directives while addressing the persistent structural and institutional challenges prevalent in developing-country contexts.

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