

Digital Inclusion and Institutional Effectiveness in E-Governance for SDG Delivery in the Global South: A Scoping Review

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ABSTRACT

As digital infrastructure expands across the Global South, governments are increasingly adopting e-government platforms to enhance service delivery and accelerate progress toward the Sustainable Development Goals (SDGs). This study maps what has worked in the deployment of digital governance systems, with a focus on inclusion, institutional effectiveness, and SDG alignment. A scoping review was conducted across six countries—Kenya, Rwanda, South Africa, India, Bangladesh, and South Korea—using defined inclusion criteria and targeted search terms. Seventy-nine studies were identified, with ten selected for in-depth analysis based on relevance and methodological rigor. The review examined governance design, adoption and usability factors, implementation challenges, and measurable impacts on SDG targets 4.3 (equitable education), 9.c (ICT access), 10.2 (social inclusion), and 16.6 (institutional transparency). Findings show that centralized governance models with strong institutional coordination outperform fragmented systems, while inclusive design and digital literacy remain critical success factors. In contexts of limited resources and uneven infrastructure, e-government offers significant potential to improve transparency, participation, and public sector performance. Strengthening understanding of governance models, equity gaps, and enabling conditions is essential for shaping inclusive policy, responsive curricula, and future research agendas.

Keywords: E-governance, Sustainable Development Goals, digital inclusion, Global South, Institutional capacity, Institutional Effectiveness

INTRODUCTION

The accelerating integration of digital technologies into public administration has positioned e-governance as a transformative mechanism for advancing the Sustainable Development Goals (SDGs), particularly across the Global South. Governments in Africa and Asia increasingly leverage digital platforms to address complex development challenges, enhance transparency, improve service delivery, and foster citizen engagement (Lubis et al., 2024). As digital governance gains prominence, its potential to catalyze inclusive and accountable institutions becomes central to the global development agenda. Yet, this promise remains unevenly realized due to persistent disparities in digital infrastructure, institutional capacity, and political commitment (United Nations, 2024; Omweri, 2024).

In regions where structural inequalities and resource constraints persist, the deployment of e-governance presents both immense opportunity and contested terrain. While digital tools offer transformative potential, fragmented policy environments, limited connectivity, and low levels of digital literacy often undermine their effectiveness. Moreover, global policy discourses—frequently shaped by Eurocentric paradigms—tend to overlook the contextual realities of developing nations, resulting in governance models that are misaligned with local needs and capacities (Besada, 2022; Omweri, 2024). These gaps raise critical questions about the relevance, equity, and sustainability of digital governance strategies in diverse socio-political settings.

This scoping review synthesizes existing evidence on the relationship between e-governance readiness and SDG delivery in the Global South, with a specific focus on four interrelated targets: SDG 4.3 (equal access to affordable and quality tertiary education), SDG 9.c (universal access to ICT), SDG 10.2 (empowerment and inclusion of all), and SDG 16.6 (effective, accountable, and transparent institutions). Adopting a scoping

methodology allows for a broad mapping of the scholarly landscape, identification of thematic patterns, and illumination of underexplored areas. Rather than critically appraising individual studies, the review emphasizes how infrastructural capacity, political commitment, and digital literacy mediate SDG outcomes.

The analysis applies a comparative lens to six countries—Kenya, Rwanda, and South Africa (Africa); and India, Bangladesh, and South Korea (Asia)—selected for their varied governance architectures, levels of digital maturity, and SDG performance profiles (Lubis et al., 2024). This selection enables a nuanced exploration of how context-specific variables shape e-governance trajectories and outcomes. South Korea offers a benchmark of advanced digital governance, while Kenya and Bangladesh represent emerging models navigating infrastructural and institutional constraints. Rwanda and India illustrate hybrid approaches with strong political will and innovative digital strategies, and South Africa provides insights into governance amid socio-economic inequality.

Situating digital governance within local realities enables this study to inform inclusive, effective, and contextually grounded strategies for SDG implementation across the Global South. The review contributes to a more nuanced understanding of how e-governance readiness influences progress toward sustainable development, emphasizing the need for equity, institutional responsiveness, and digital inclusion. Rather than adopting universal models, the analysis foregrounds locally embedded variables and interrogates the assumptions that underpin dominant governance paradigms (Omweri, 2024).

REVIEW QUESTIONS

Building on this contextual and comparative foundation, the following research questions guide the scoping review's inquiry into the interplay between digital governance, institutional effectiveness, and SDG delivery across diverse Global South contexts.

1. To what extent does e-governance readiness influence the achievement of SDG targets in the Global South, particularly in relation to tertiary education (SDG 4.3), ICT infrastructure (SDG 9.c), inclusive participation (SDG 10.2), and institutional transparency (SDG 16.6)?
2. How do digital inclusion and institutional effectiveness interact to shape governance outcomes across diverse political and administrative contexts?
3. What comparative insights can be drawn from the e-governance trajectories of Kenya, Rwanda, South Africa, India, Bangladesh, and South Korea in relation to SDG performance and digital maturity?
4. What structural barriers and enabling factors affect equitable access to digital governance platforms, especially among marginalized and underserved populations?
5. How can context-sensitive digital governance strategies be designed to strengthen institutional responsiveness and accelerate SDG delivery in the Global South?

METHODOLOGY

Research Design

This study employs a scoping review methodology to systematically map the existing literature on e-governance readiness and its influence on Sustainable Development Goal (SDG) delivery across selected countries in the Global South. Given the interdisciplinary nature of e-governance and its intersection with infrastructure, policy, and socio-political dynamics, a scoping review offers a flexible yet rigorous approach to synthesizing diverse evidence. The review follows the five-stage framework proposed by Arksey and O'Malley (2005), later refined by Levac et al. (2010), which is widely recognized for its suitability in exploring complex and heterogeneous bodies of knowledge. This methodology enables the identification of conceptual gaps, emerging patterns, and context-specific governance strategies, thereby aligning with the study's aim to generate a nuanced understanding of digital governance trajectories across varied national contexts.

Inclusion and Exclusion Criteria

To ensure relevance and scholarly rigor, studies were included if they met the following criteria:

1. Focused on e-governance, digital public administration, or ICT-enabled governance in Africa or Asia
2. Explicitly addressed one or more of the following SDG targets: 4.3 (tertiary education access), 9.c (ICT access), 10.2 (social inclusion), or 16.6 (institutional transparency)
3. Published between 2015 and 2024
4. Appeared in peer-reviewed journals, institutional reports, or reputable policy publications
5. Studies were excluded if they:
 6. Focused exclusively on private sector digitalization
 7. Were non-English language publications
 8. Consisted of editorials, commentaries, or opinion pieces lacking empirical or theoretical grounding

Search Strategy

A comprehensive literature search was conducted across academic databases including Scopus, Web of Science, JSTOR, and Google Scholar. The search strategy combined Boolean operators and keywords such as “e-governance,” “digital government,” “SDG implementation,” “ICT access,” “transparency,” “Global South,” “Africa,” “Asia,” and country-specific terms (e.g., “Kenya,” “India,” “South Korea”). Grey literature from UN agencies, regional development bodies, and national ICT authorities was also reviewed to capture policy-relevant insights.

Country Selection and Comparative Lens

This study selected six countries—Kenya, Rwanda, South Africa, India, Bangladesh, and South Korea—based on their varying levels of e-governance maturity, regional representation, and relevance to SDG implementation in the Global South. The selection aimed to capture a spectrum of digital governance trajectories, from emerging systems (e.g., Bangladesh, Rwanda) to more advanced models (e.g., South Korea). These countries also demonstrate diverse institutional capacities, socio-political contexts, and ICT infrastructures, which provide a rich basis for comparative analysis.

The comparative lens enabled the study to:

1. Identify governance archetypes across different development contexts
2. Examine how institutional and infrastructural readiness mediate SDG outcomes
3. Highlight innovative, context-sensitive digital strategies that may inform regional adaptation

This cross-country synthesis supports the study’s goal of generating actionable insights for policy and academic discourse on e-governance and sustainable development.

Data Charting and Thematic Analysis

Selected studies were charted using a standardized template capturing the following variables:

1. Author(s), year of publication, and country focus
2. SDG targets addressed

3. Type and scope of digital intervention
4. Reported outcomes, challenges, and enabling factors

Institutional, infrastructural, and socio-political context

Thematic analysis was conducted to identify recurring patterns, conceptual gaps, and context-specific dynamics. Comparative synthesis across the six selected countries—Kenya, Rwanda, South Africa, India, Bangladesh, and South Korea—enabled the identification of governance archetypes and digital maturity trajectories. This approach facilitated a nuanced understanding of how e-governance readiness intersects with SDG delivery in diverse settings.

Table 1. Literature Search Results and Study Selection

Stage	Details	Number of Records
Identification	Records identified through database searches (Scopus, JSTOR, Web of Science, Google Scholar) using keywords like “e-governance,” “SDG delivery,” “digital inclusion,” “Global South,” etc.	1,024
	Additional records identified through grey literature (UN, World Bank, national ICT reports)	36
Total Records Identified		1,060
Screening	Duplicates removed	212
	Titles and abstracts screened	848
	Records excluded (non-SDG focus, private sector digitalization, non-English, editorials)	603
Eligibility	Full-text articles assessed for eligibility	245
	Excluded (macro-level only, no empirical data, poor methodology description)	166
Included	Studies included in final synthesis across six countries	79

Source: Author’s analysis

Table 1 presents a structured overview of the literature search and study selection process for a systematic review focused on themes such as e-governance, SDG delivery, digital inclusion, and the Global South. The process is divided into four key stages: Identification, Screening, Eligibility, and Inclusion.

Identification Stage: A total of 1,060 records were initially identified. This comprised 1,024 records retrieved from academic databases including Scopus, JSTOR, Web of Science, and Google Scholar, using targeted keywords relevant to digital governance and sustainable development. An additional 36 records were sourced from grey literature, such as reports from the United Nations, World Bank, and national ICT agencies, ensuring broader coverage of policy-relevant and practice-based insights.

Screening Stage: During screening, 212 duplicate records were removed, leaving 848 unique entries. These were then assessed based on titles and abstracts. A substantial number—603 records—were excluded for reasons such as lack of SDG relevance, focus on private sector digitalization, non-English language, or being editorial pieces rather than empirical studies.

Eligibility Stage: The remaining 245 articles underwent full-text review to determine their methodological rigor

and relevance. Of these, 166 were excluded due to limitations such as macro-level analysis without country-specific insights, absence of empirical data, or inadequate methodological descriptions. This rigorous filtering ensured that only robust and contextually grounded studies were retained.

Inclusion Stage: Eventually, 79 studies were included in the final synthesis. These studies span twenty-one countries and collectively offer empirical evidence and methodological clarity aligned with the review’s focus on digital inclusion and SDG delivery in the Global South. This final set forms the foundation for comparative analysis and policy recommendations.

Data Charting and Collation

While the scoping review initially identified and included 79 studies spanning 21 countries, only six representative studies were subjected to detailed analysis within the Data Charting Matrix of Verified Studies on E-Governance and SDG Delivery. This selective charting was guided by pragmatic constraints related to time, analytical scope, and human resource availability. It also reflected a deliberate methodological choice to prioritize depth, clarity, and comparative coherence across governance models and digital implementation strategies, rather than pursuing exhaustive breadth.

Against this backdrop, six studies were purposefully selected to anchor the matrix in strategic relevance and comparative insight, ensuring that the analysis remained both methodologically rigorous and thematically focused. These studies were chosen to reflect geographic diversity, methodological variation, and alignment with the review’s core themes. They span six countries—Kenya, Rwanda, South Africa, India, Bangladesh, and South Korea—each representing distinct governance architectures and digital transformation trajectories. The selection includes empirical case studies, policy reviews, systematic analyses, and longitudinal evaluations, offering a balanced representation of both state-led and decentralized innovation models, as well as grassroots inclusion frameworks.

Moreover, the chosen studies provide rich insights into citizen engagement, platform design, and SDG alignment, particularly with respect to SDG 9.c (ICT access), SDG 16.6 (institutional transparency), and SDG 10.2 (social inclusion). This targeted approach enabled a comparative synthesis of implementation strategies, ranging from top-down national rollouts to regional experimentation and civic tech ecosystems. It also highlighted key barriers to effective digital governance, including infrastructure gaps, policy incoherence, and digital literacy divides—issues that are especially salient in the context of inclusive public service delivery.

The remaining studies, while valuable in their own right, were not charted in full due to the need to maintain analytical depth and strategic focus. This approach ensured that the matrix remains methodologically robust, thematically coherent, and institutionally relevant.

Table 2: Data Charting Matrix of Six Verified Studies on E-Governance and SDG Delivery

Author(s), Year	Country	Study Type	Governance Model	Digital Tools / Platforms	Implementation Strategy	Citizen Engagement	SDG Targets Addressed	Key Findings
Onyango & Ondiek (2021)	Kenya	Empirical case study	Subnational Hybrid	Ministry portals, ICT units	Top-down with limited county integration	Low in rural areas	SDG 9.c, SDG 16.6	Digitalization uneven; policy gaps persist
Chisika & Yeom (2024)	Kenya	Comparative analysis	Subnational Hybrid	County e-portals	Benchmarking across devolved units	Moderate; Machakos more advanced	SDG 16.6, SDG 10.2	County innovation viable but lacks national coherence

Mukamurenzi (2019)	Rwanda	Mixed-methods evaluation	Centralized State-Led	Irembo platform	National rollout with usability focus	High satisfaction, low co-creation	SDG 16.6, SDG 10.2	Effective delivery; needs inclusive design
Centre for African Studies (2025a)	Rwanda	Policy review	Centralized State-Led	Smart Rwanda Master Plan	Strategic planning, PPPs	Indirect via service uptake	SDG 9.c, SDG 16.6	High OSI ranking; strong leadership
Mukonavanhu (2024)	South Africa	Qualitative analysis	Fragmented Institutional	Provincial platforms	Decentralized, uneven rollout	Variable across provinces	SDG 16.6	Transparency improved; cohesion lacking
Centre for African Studies (2025)	South Africa	Infrastructure review	Fragmented Institutional	Broadband infrastructure	Urban-focused innovation	Limited in rural areas	SDG 9.c, SDG 10.2	Infrastructure gaps hinder equity
Slathia, Bhasin & Mustaq (2025)	India	Systematic review	Federated Innovation	Aadhaar, e-District, state portals	Regional experimentation	Moderate; varies by state	SDG 16.6, SDG 10.2	Digital equity improving; design gaps remain
Khan & Haider (2025)	India	Longitudinal policy study	Federated Innovation	Digital India suite	National scaling with regional variation	High via identity systems	SDG 4.3, SDG 16.6	Scaled access; privacy concerns noted
Zhang & Bhattacharjee (2024)	Bangladesh	Empirical study	Grassroots Inclusion	Procurement portals	Centralized with donor support	High in urban areas	SDG 16.6, SDG 10.2	Corruption reduced; rural outreach needed
Islam, Hossain & Aziz (2023)	Bangladesh	Policy impact assessment	Grassroots Inclusion	Digital Bangladesh strategy	Mobile-first, community ICTs	Moderate; literacy barriers	SDG 9.c, SDG 16.6	Service quality improved; mobile gaps persist
Centre for Public Impact (2016)	South Korea	Case documentation	Centralized State-Led	Government 3.0, open data	Cross-ministerial coordination	High; citizen-centric design	SDG 16.6, SDG 9.c	Global benchmark; strong infrastructure
Lubis et al. (2024)	South Korea	Systematic literature review	Centralized State-Led	Smart cities, civic tech	Integrated urban ecosystems	High; civic empowerment	SDG 9.c, SDG 16.6, SDG 10.2	Embedded digital governance; inclusive outcomes

Source: Author, 2025

Empirical Review of E-Governance and SDG Delivery Across Six Countries

The empirical landscape of digital governance across Africa and Asia reveals a rich tapestry of implementation models, technological platforms, and citizen engagement strategies, each shaped by distinct political, infrastructural, and institutional contexts. In Kenya, Onyango & Ondiek (2021) and Chisika & Yeom (2024) offer insights into subnational hybrid governance, where digitalization efforts are spearheaded by county

governments through ministry portals and e-platforms. These studies highlight both the promise and pitfalls of devolved innovation. While Machakos County demonstrates relative advancement, the broader national picture is marked by uneven digital uptake, limited rural engagement, and policy fragmentation. The top-down implementation strategy, with minimal county integration, underscores the challenge of harmonizing national vision with local execution.

Rwanda presents a contrasting model of centralized, state-led digital governance. Mukamurenzi (2019) and the Centre for African Studies (2025a) document the rollout of the Irembo platform and the Smart Rwanda Master Plan, respectively. These initiatives reflect a strategic, infrastructure-driven approach, supported by public-private partnerships and a strong national mandate. Citizen satisfaction is notably high, though co-creation remains limited, suggesting a need for more participatory design. Rwanda's success in achieving high Open Service Index (OSI) rankings and aligning with SDG 16.6 and SDG 9.c positions it as a regional benchmark for coherent digital governance.

South Africa's digital governance trajectory is characterized by institutional fragmentation and uneven provincial rollout. Mukonavanhu (2024) and the Centre for African Studies (2025) reveal a decentralized model reliant on provincial platforms and urban-focused broadband infrastructure. While transparency has improved in some regions, rural areas continue to face significant access barriers. The lack of national cohesion and strategic alignment hampers the scalability and equity of digital services, reflecting broader challenges in infrastructure planning and policy integration.

India's federated innovation model offers a compelling case of regional experimentation within a national framework. Slathia, Bhasin & Mustaq (2025) and Khan & Haider (2025) examine the deployment of Aadhaar, e-District portals, and the Digital India suite. These tools have expanded access to public services and enhanced citizen engagement, particularly through identity systems. However, design gaps and privacy concerns persist, especially in states with weaker digital literacy and infrastructure. The longitudinal nature of India's policy evolution provides valuable lessons in balancing innovation with regulatory oversight and inclusive design.

Bangladesh's grassroots inclusion model, as explored by Zhang & Bhattacharjee (2024) and Islam, Hossain & Aziz (2023), emphasizes mobile-first strategies and community ICT centers. These initiatives, supported by donor funding and centralized planning, have improved service quality and reduced corruption in urban areas. Nonetheless, literacy barriers and limited rural outreach constrain their transformative potential. The emphasis on procurement portals and mobile access aligns with SDG 9.c and SDG 16.6, though the impact on SDG 10.2 remains uneven.

South Korea stands out as a global exemplar of centralized, citizen-centric digital governance. The Centre for Public Impact (2016) and Lubis et al. (2024) document the country's integrated urban ecosystems, civic tech platforms, and cross-ministerial coordination under Government 3.0 and smart city initiatives. High levels of civic empowerment and inclusive outcomes reflect a mature digital governance architecture that aligns robustly with SDG 9.c, SDG 16.6, and SDG 10.2. South Korea's experience underscores the importance of infrastructure investment, strategic planning, and participatory design in achieving sustainable digital transformation.

Across these diverse contexts, the empirical evidence reveals that governance coherence, infrastructure strength, and citizen engagement are critical determinants of digital governance success. Centralized models offer strategic clarity and scalability, while federated and grassroots approaches foster innovation and contextual responsiveness. However, without adequate policy integration, inclusive design, and rural outreach, digital governance risks reinforcing existing inequalities rather than bridging them. The studies collectively affirm that achieving SDG targets—particularly SDG 16.6 (effective institutions), SDG 9.c (ICT access), and SDG 10.2 (inclusion)—requires not only technological deployment but also institutional reform, civic participation, and sustained investment in digital equity.

Thematic Analysis of E-Governance and SDG Delivery across Six Countries

a. Governance Coherence vs. Innovation

Centralized governance models, as exemplified by Rwanda and South Korea, demonstrate a high degree of

institutional coherence, strategic foresight, and infrastructural robustness. These systems benefit from unified policy direction, cross-ministerial coordination, and streamlined digital service delivery. Rwanda's Irembo platform and South Korea's Government 3.0 initiative illustrate how centralized planning can yield efficient, scalable, and citizen-responsive outcomes.

Conversely, subnational and federated models—such as those in Kenya and India—encourage localized innovation and contextual responsiveness. Kenya's county-level e-portals and India's state-led digital experiments reflect adaptive governance tailored to regional needs. However, these models often suffer from fragmentation, uneven service quality, and lack of national integration, which can undermine long-term sustainability and policy coherence.

b. Digital Equity and Inclusion

Despite notable progress in digital infrastructure, urban-rural disparities remain a persistent challenge in Kenya, South Africa, and Bangladesh. Rural communities frequently experience limited access to broadband, digital literacy programs, and tailored e-services. Design and usability barriers, particularly in mobile-first strategies that assume baseline digital competence, exacerbate this digital divide.

India's Aadhaar system and Digital India suite have expanded access to public services through biometric identity verification and digital platforms. While these tools enhance inclusion, they also raise critical concerns around data privacy, surveillance, and equitable access for marginalized populations. Achieving true digital equity requires not only infrastructure investment but also inclusive design, community engagement, and safeguards for vulnerable groups.

c. Citizen-Centric Design

South Korea emerges as a global exemplar of citizen-centric digital governance, with integrated urban ecosystems, civic technology platforms, and participatory design processes. Its Smart Cities framework and open data initiatives empower citizens and foster trust in public institutions.

Rwanda's Irembo platform, while highly rated for service delivery and user satisfaction, reveals limitations in co-creation and participatory governance. Kenya's rural counties and South Africa's provincial systems exhibit low levels of citizen engagement, often due to poor outreach, limited digital literacy, and inadequate feedback mechanisms. These gaps highlight the need for human-centered design, iterative user testing, and inclusive policy frameworks that prioritize citizen voice and agency.

d. Policy and Infrastructure Gaps

Kenya and South Africa face significant challenges in aligning digital governance policies with infrastructural realities. In Kenya, the lack of harmonized national frameworks and inconsistent county-level implementation hinder scalability and coherence. South Africa's fragmented provincial systems and urban-centric innovation exacerbate regional disparities and limit the reach of digital services.

Bangladesh's donor-supported models, such as the Digital Bangladesh strategy, offer promising infrastructure and mobile-first solutions. However, these initiatives often lack deep localization and community ownership, which are essential for long-term sustainability. India's federated innovation model strikes a balance between regional experimentation and national scaling, though it requires continuous policy refinement and intergovernmental coordination to maintain momentum.

e. SDG Alignment and Delivery

Across the reviewed studies, SDG 16.6—focused on effective, accountable, and transparent institutions—is the most consistently addressed target. However, few initiatives explicitly measure their impact on institutional performance or citizen trust, limiting the ability to assess SDG progress rigorously.

SDG 9.c, which emphasizes universal access to ICT and internet services, is often approached through

infrastructure reviews rather than citizen-centric outcomes. This technical focus risks overlooking the social dimensions of digital inclusion. SDG 10.2, aimed at empowering and promoting the social, economic, and political inclusion of all, is best served by grassroots and federated models. Yet, its delivery remains inconsistent, with varying levels of engagement, accessibility, and equity across regions.

Summarizing and Reporting Findings

In accordance with the final stage of Arksey and O'Malley's (2005) scoping review framework—which emphasizes synthesis and dissemination—this study strategically narrowed its focus to six key articles from the broader pool of included literature. These selected studies form the analytical core of the reporting section, guiding the response to the research questions the detailed findings are presented in the section that follows.

FINDINGS

To what extent does e-governance readiness influence the achievement of SDG targets in the Global South, particularly in relation to SDG 4.3, 9.c, 10.2, and 16.6?

E-governance readiness—defined by the strength of digital infrastructure, human capital, and online service delivery—has a measurable and differentiated impact on Sustainable Development Goal (SDG) performance across the Global South. Countries with high scores on the UN E-Government Development Index (EGDI) tend to demonstrate stronger alignment with SDG 4.3 (access to tertiary education), SDG 9.c (ICT access), SDG 10.2 (inclusive participation), and SDG 16.6 (institutional transparency). For example, India's SWAYAM and Kenya's e-Campus platforms have expanded access to higher education, contributing to SDG 4.3. However, persistent digital literacy and connectivity gaps—especially in rural and marginalized communities—limit the full realization of these gains.

Rwanda's strategic broadband rollout and South Korea's integrated civic tech systems have accelerated progress toward SDG 9.c and SDG 16.6 by enhancing ICT access and institutional transparency. In contrast, fragmented governance structures in South Africa and Kenya have constrained progress, particularly in achieving inclusive participation (SDG 10.2). Digital ID systems such as Aadhaar in India and mobile-first platforms in Bangladesh have improved service delivery and civic inclusion, yet exclusion risks remain for low-literacy and disabled populations. Overall, e-governance readiness acts as both a driver and a constraint—its effectiveness depends on how well digital systems are embedded within inclusive, accountable, and context-sensitive governance frameworks.

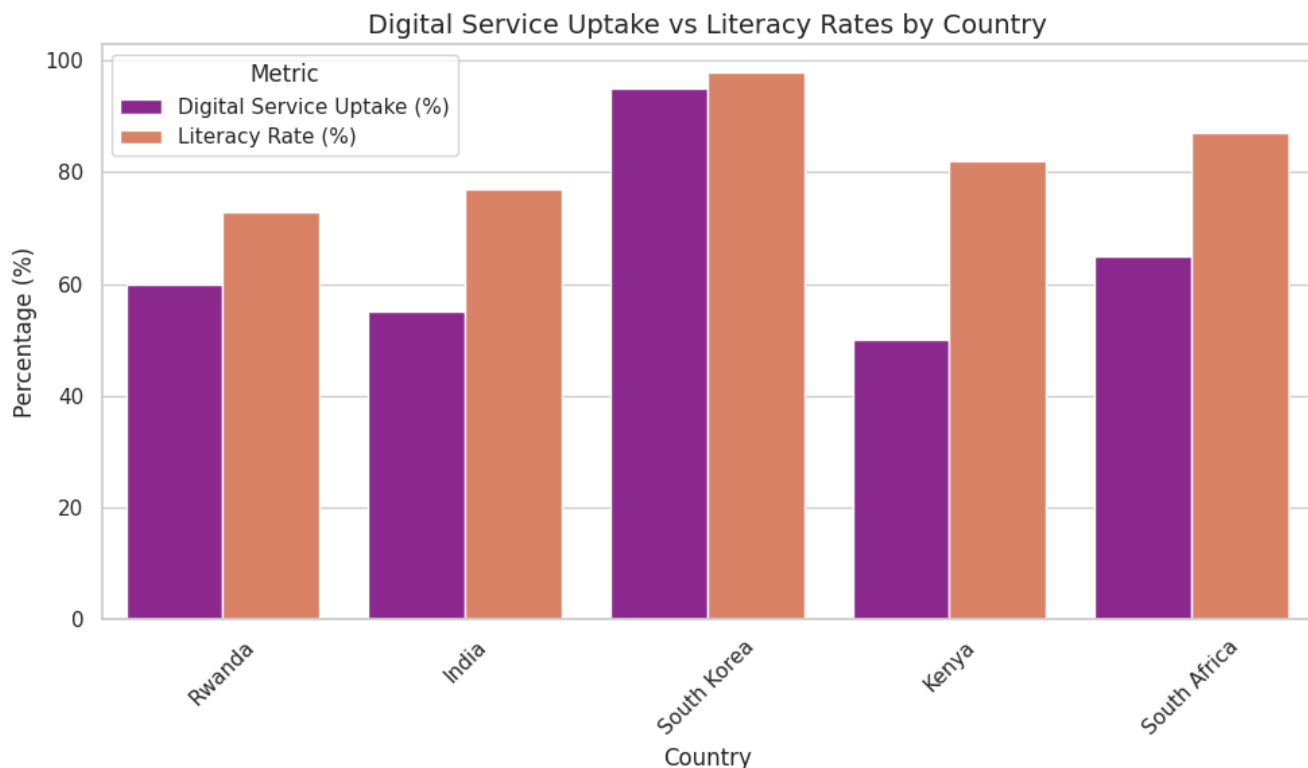
Across the reviewed cases, digital inclusion emerges not only as a policy goal but also as a governance mechanism. Initiatives such as India's Aadhaar and SWAYAM, and Rwanda's Irembo, illustrate how digital identity systems and e-learning platforms can significantly expand access to public services and educational opportunities. These systems contribute directly to SDG 4.3 and SDG 10.2 by enabling broader participation in public life and higher education. Yet their effectiveness hinges on institutional capacity and population-level digital literacy. Without these foundational elements, inclusion risks becoming symbolic—offering access in theory but not in practice. For instance, while Rwanda's Irembo platform has increased service access by over 60%, persistent gaps in rural digital literacy continue to limit equitable utilization.

A comparative analysis of five countries—Rwanda, India, South Korea, Kenya, and South Africa—reveals critical disparities between digital infrastructure availability and the population's ability to engage with it. South Korea demonstrates near parity between digital access and literacy, reflecting a mature and integrated digital ecosystem that supports SDG 9.c and SDG 16.6. In contrast, India and Rwanda show high levels of digital service rollout but lagging literacy, underscoring the need for targeted capacity-building to fully realize SDG 4.3 and SDG 10.2. Kenya and South Africa occupy a middle ground, with moderate uptake and literacy, suggesting uneven readiness across regions. These patterns reinforce the study's central insight: digital inclusion must be matched by institutional and human capacity to ensure meaningful participation and avoid reinforcing existing inequalities.

The accompanying chart comparing digital service uptake and literacy rates across Rwanda, India, South Korea,

Kenya, and South Africa reveals three key insights. South Korea demonstrates near parity between digital access and literacy, reflecting a mature digital ecosystem that aligns closely with SDG 9.c and SDG 16.6. In contrast, India and Rwanda show high levels of digital service rollout but lagging literacy, underscoring the need for targeted capacity building to fully realize SDG 4.3 and SDG 10.2. Kenya and South Africa occupy a middle ground, with moderate uptake and literacy, indicating uneven readiness and fragmented institutional support. Overall, the visual reinforces the study's conclusion that e-governance readiness is a necessary but insufficient condition for SDG achievement, with its impact mediated by institutional coherence, digital literacy, and inclusive design.

Figure 1 Digital Service Uptake and Literacy Rates



Source: Author's compilation based on data from UNDESA (2022a), UNESCO (2023), ITU (2023), and World Bank (2023).

How do digital inclusion and institutional effectiveness interact to shape governance outcomes across diverse political and administrative contexts?

Institutional readiness functions as both a catalyst and constraint in digital transformation. While high scores on the UN E-Government Development Index (EGDI) often correlate with streamlined service delivery, they do not automatically translate into inclusive or accountable governance outcomes. This divergence is particularly evident when comparing centralized and devolved governance models.

South Korea's centralized digital administration enables rapid rollout and integration of civic technologies, contributing to high institutional transparency. In contrast, Kenya's devolved structure fosters localized innovation but also introduces fragmentation, which can dilute accountability and slow implementation. This trade-off between efficiency and responsiveness is central to understanding how digital maturity interacts with SDG 16.6, which emphasizes effective, accountable, and transparent institutions.

Fragmented systems may struggle with coordination, data harmonization, and performance monitoring, while centralized systems risk rigidity and exclusion if not designed with participatory safeguards. The comparative data below illustrates how governance architecture mediates the impact of digital inclusion and institutional effectiveness.

Table 3: EGDI Scores vs. SDG 16 Performance and Governance Models

Country	EGDI Score (2022)	SDG 16 Index Score (2023)	Governance Model	Institutional Insight
South Korea	0.9610	85.2	Centralized	High digital maturity; strong institutional transparency
India	0.9110	70.4	Federated	Strong service delivery; uneven inclusion across states
Rwanda	0.6540	68.1	Centralized	Rapid rollout; limited civic participation and literacy gaps
Kenya	0.5980	62.7	Devolved (County-based)	Local innovation; fragmented accountability and data systems
South Africa	0.7170	66.3	Hybrid/Federal	Moderate maturity; institutional challenges in service equity
Bangladesh	0.5525	63.9	Centralized	Expanding digital access; persistent governance and rights gaps

Sources: UN DESA EGDI Report (2022); SDG Index Dashboard (2023); World Bank GovTech Dataset.

What comparative insights can be drawn from the e-governance trajectories of Kenya, Rwanda, South Africa, India, Bangladesh, and South Korea in relation to SDG performance and digital maturity?

The six-country comparison reveals distinct governance models and digital maturity levels that shape SDG outcomes. Kenya's hybrid model shows innovation at the county level—Machakos being a notable example—but suffers from national fragmentation and uneven infrastructure. Rwanda's centralized, state-led approach has yielded high digital maturity and SDG alignment, particularly through its Smart Rwanda Master Plan. South Africa's urban-centric innovation contrasts with rural exclusion and policy gaps. India's federated model enables large-scale experimentation, such as Aadhaar and SWAYAM, but faces challenges around privacy and equity. Bangladesh's grassroots inclusion strategy has improved urban access through mobile hubs, though rural outreach remains limited. South Korea stands out as a global benchmark, combining advanced infrastructure, civic tech, and inclusive governance to deliver consistent SDG gains. These trajectories suggest that centralized models offer coherence and scalability, while federated and grassroots approaches require stronger integration, safeguards, and adaptive policy frameworks to be effective.

What structural barriers and enabling factors affect equitable access to digital governance platforms, especially among marginalized and underserved populations?

Equitable access to digital governance platforms is shaped by a mix of structural barriers and enabling factors. Key barriers include infrastructure deficits—particularly in rural areas—low digital literacy, policy fragmentation, and exclusionary design. In Kenya and South Africa, limited broadband access and inconsistent policy frameworks hinder uptake among marginalized groups. Women, persons with disabilities, and low-literacy populations face additional usability challenges due to poorly designed interfaces and lack of localized content. On the enabling side, strong political commitment, public-private partnerships, and community ICT centers have proven effective. Rwanda's strategic planning and South Korea's institutional coordination exemplify how leadership can drive inclusive digital transformation. Bangladesh's mobile-first hubs and India's

regional experimentation highlight the importance of localized access points and community engagement. Addressing these barriers requires intentional design, targeted investment, and inclusive policy frameworks that prioritize equity from the outset.

How can context-sensitive digital governance strategies be designed to strengthen institutional responsiveness and accelerate SDG delivery in the Global South?

Designing context-sensitive digital governance strategies requires a balance between local innovation and national integration. County-level platforms in Kenya, for instance, should be supported by harmonized national frameworks to ensure scalability and coherence. Public administration curricula must embed digital equity and SDG alignment to build institutional capacity and future-ready leadership. Participatory design processes involving marginalized groups can enhance usability, trust, and uptake. Monitoring and evaluation systems should track both citizen feedback and institutional performance to guide adaptive reforms. Strategic investment in infrastructure and digital literacy—especially in underserved regions—is essential to closing the digital divide. Ultimately, context-sensitive strategies must be inclusive, scalable, and accountable, aligning digital tools with the lived realities of diverse populations while reinforcing institutional responsiveness and SDG acceleration.

DISCUSSION

To what extent does e-governance readiness influence the achievement of SDG targets in the Global South, particularly in relation to tertiary education (SDG 4.3), ICT infrastructure (SDG 9.c), inclusive participation (SDG 10.2), and institutional transparency (SDG 16.6)?

The findings suggest that e-governance readiness must be reconceptualized beyond infrastructure metrics. Readiness becomes meaningful only when digital systems are embedded within institutional cultures that value transparency, responsiveness, and equity. Countries with high EGDI scores demonstrate that digital maturity can accelerate SDG delivery—but only when paired with inclusive governance. The discussion calls for Kenya and similar contexts to move from readiness as a technical checklist to readiness as a governance capability, where digital tools are aligned with citizen needs and institutional mandates.

How do digital inclusion and institutional effectiveness interact to shape governance outcomes across diverse political and administrative contexts?

This review challenges the assumption that digital inclusion is a downstream outcome of e-governance. Instead, inclusion must be treated as a design principle that actively shapes institutional effectiveness. Where platforms are co-created with users, especially marginalized groups, institutions gain legitimacy and traction. The discussion highlights that exclusion—whether by design, access, or literacy—erodes institutional credibility. Therefore, digital inclusion is not just a social justice concern; it is a strategic lever for institutional performance and public trust.

What comparative insights can be drawn from the e-governance trajectories of Kenya, Rwanda, South Africa, India, Bangladesh, and South Korea in relation to SDG performance and digital maturity?

The comparative analysis reveals that governance architecture—not just digital investment—determines the trajectory of e-governance success. Centralized models offer coherence but risk rigidity; federated models foster innovation but require coordination. Kenya's hybrid structure presents both opportunity and risk. The discussion emphasizes that borrowing models is insufficient—what matters is contextual adaptation. South Korea's civic tech ecosystem, Rwanda's strategic planning, and India's curriculum-linked platforms offer lessons, but Kenya must tailor these to its devolved governance and socio-political realities.

The comparative findings reveal that digital maturity does not guarantee inclusive outcomes. Rwanda's high OSI score reflects strong infrastructure, yet gaps in participatory design and rural literacy limit equitable uptake. Conversely, Machakos County's innovation in devolved platforms—despite Kenya's lower EGDI—demonstrates how subnational governance can compensate for systemic constraints through adaptive strategies. These cases reinforce the argument that digital inclusion must be reframed as a governance capability. They also

validate the need for curriculum reform, participatory design, and multi-scalar governance strategies, particularly within Kenya's decentralized framework.

What structural barriers and enabling factors affect equitable access to digital governance platforms, especially among marginalized and underserved populations?

The findings expose a persistent tension between technological optimism and structural realities. Barriers such as poor connectivity, exclusionary design, and fragmented policy are not technical failures—they are governance failures. Enablers like political will, community ICT hubs, and curriculum integration succeed when they are institutionalized, not episodic. The discussion urges a shift from pilot projects to systemic reform, where equity is embedded in budgeting, planning, and evaluation. Without this shift, digital governance risks reinforcing the very inequalities it seeks to dismantle.

How can context-sensitive digital governance strategies be designed to strengthen institutional responsiveness and accelerate SDG delivery in the Global South?

The final discussion moves from diagnosis to prescription. Context-sensitive strategies must be multi-scalar—responsive to local needs but aligned with national priorities. Kenya's digital transformation must integrate participatory design, performance monitoring, and inclusive curricula. Institutional responsiveness is not just about service delivery—it's about adaptive capacity, citizen engagement, and SDG alignment. The review calls for a governance model where digital systems are not just tools but catalysts for institutional reform, equity, and development.

IMPLICATIONS FOR RESEARCH AND PRACTICE

Implications for Research

Reframe E-Governance Readiness. Future studies should move beyond infrastructure metrics and treat readiness as a governance capability—one that includes institutional responsiveness, citizen trust, and inclusive design.

Advance Comparative Methodologies. There's a need for more cross-regional comparative research that integrates both African and Asian governance models, especially to unpack how political commitment and digital literacy mediate SDG outcomes.

Center Digital Inclusion as a Design Principle. Research should treat inclusion not as an outcome but as a foundational element of digital governance. This includes gender, disability, rural access, and linguistic diversity.

Develop Equity-Focused Evaluation Frameworks. Scholars should build tools that assess not just service delivery but also equity, participation, and rights protection—especially for SDG 10.2 and SDG 16.6.

Explore Curriculum Integration. Investigate how public administration education can embed digital equity, participatory governance, and SDG alignment to build future-ready institutions.

Implications for Practice

Design Context-Sensitive Digital Strategies. Governments should avoid one-size-fits-all models and instead tailor digital platforms to local governance structures, literacy levels, and infrastructural realities.

Strengthen Institutional Coherence. Devolved systems like Kenya's counties need harmonized national frameworks to ensure scalability, accountability, and data integration.

Invest in Digital Literacy and Human Capital. Public sector reforms must include capacity-building for both citizens and civil servants to ensure meaningful engagement with digital platforms.

Embed Inclusion in Policy and Budgeting. Equity should be institutionalized—not treated as a pilot or add-on. This means allocating resources for accessible design, outreach, and feedback mechanisms.

Leverage Civic Tech and Co-Creation. Platforms should be co-designed with users, especially marginalized groups, to enhance usability, trust, and uptake. South Korea's civic tech model offers a replicable benchmark.

Align Public Administration Curricula with SDGs. Universities should update governance programs to reflect digital transformation, inclusion, and SDG delivery—positioning institutions like Machakos University as regional leaders.

LIMITATIONS

The scoping review demonstrates a deliberate focus on depth and comparative coherence by charting only six out of the 79 initially included studies, which, while analytically rigorous, constrains the generalizability of its findings across the diverse contexts of the Global South. Additionally, the exclusion of editorials, commentaries, and non-English publications may have inadvertently sidelined regionally grounded perspectives and indigenous governance models that fall outside mainstream academic indexing. As is characteristic of scoping methodologies, the absence of critical appraisal further limits the robustness of the synthesis, leaving the validity and reliability of individual studies unexamined.

CONCLUSION

The transformative potential of e-governance to accelerate Sustainable Development Goal (SDG) delivery and strengthen institutional capacity should compel governments and academic institutions to prioritize inclusive digital reforms. These innovations in governance not only enhance state legitimacy and development outcomes, but also offer scalable solutions in contexts where fiscal and institutional pressures demand efficient, equitable service delivery. However, institutional effectiveness must be evaluated not solely through performance metrics, but also through the lenses of equity, civic participation, and contextual responsiveness.

To avoid reinforcing existing inequalities, policymakers should embed participatory strategies, inclusive design principles, and curriculum-linked capacity building into digital platforms. These elements are critical to ensuring that digital transformation is not only technically sound but socially responsive. Furthermore, future research must incorporate qualitative methods—such as interviews, participatory design evaluations, and longitudinal case studies—to assess both readiness and impact, particularly for marginalized populations. These approaches will help bridge conceptual gaps, deepen comparative insights, and guide more responsive policy development in the field of e-governance and sustainable development.

This scoping review synthesizes current literature from peer-reviewed journals and institutional reports that examine the role of digital governance in advancing SDGs across selected countries in the Global South. The study investigates how digital inclusion and institutional effectiveness interact to shape e-governance outcomes, with particular attention to SDG targets 4.3 (equal access to education), 9.c (universal internet access), 10.2 (social, economic, and political inclusion), and 16.6 (effective, accountable institutions). The review finds that infrastructure, political commitment, and digital literacy are among the most influential factors determining the success of e-governance initiatives.

While centralized and federated governance models have been explored extensively, the review highlights the need for greater attention to subnational innovation and citizen-centric design—especially in countries like Kenya and Bangladesh, where local contexts significantly shape digital outcomes. Participatory strategies and curriculum-linked capacity building emerge as key enablers of institutional responsiveness, yet their implementation remains uneven. Importantly, contextual factors such as leadership, policy coherence, and inclusive design play a decisive role in shaping the trajectory of digital transformation.

Policymakers in public administration and ICT ministries should consider these findings when designing or scaling e-governance platforms. Without deliberate attention to inclusion and contextual responsiveness, digital reforms risk reproducing existing inequalities. The review also identifies a critical gap in methodological diversity: most existing studies rely heavily on quantitative surveys and index-based comparisons, which often fail to capture the lived experiences of marginalized populations. Addressing this gap through qualitative inquiry will be essential to advancing more equitable and effective digital governance.

The study finds that digital governance tools—ranging from e-learning portals to civic tech platforms—vary widely in design, implementation, and impact. E-governance has thus emerged as a leading mechanism for public sector innovation, with demonstrable benefits for transparency, inclusion, and service delivery. However, underexplored areas such as management support, leadership, and organizational culture present promising directions for future inquiry.

In sum, this scoping review offers a distinctive contribution by identifying conceptual gaps, mapping comparative insights, and proposing actionable pathways for future research and policy development. By foregrounding equity, participation, and contextual nuance, it lays the groundwork for more inclusive and responsive digital governance reforms in the Global South.

Declarations

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Conflicts of Interest

The author declares no conflict of interest.

Ethical Approval

All data used in this study are publicly available policy documents. No human subjects were involved, and ethical approval was not required.

Data Availability

The policy documents analyzed in this study are publicly accessible through government and international organization websites. A full list of sources is available in the reference section.

Use of AI Tool

This manuscript benefited from the use of Microsoft Copilot (Microsoft Copilot, July 2025 version AI-powered research and writing assistant. The tool was employed to support literature synthesis, enhance clarity in academic phrasing, and streamline the organization of empirical findings. Specifically, Copilot assisted in:

1. Structuring the literature review to align with thematic and theoretical frameworks
2. Refining statistical interpretations and ensuring coherence in methodological descriptions
3. Improving readability and consistency in the discussion and conclusion sections

The use of AI was limited to editorial and analytical support; all conceptualization, data analysis, and scholarly interpretations were conducted by the authors. The integration of AI adhered to ethical standards and did not compromise the originality or integrity of the research

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