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Digital Strategies for SDG Localisation at the Local Government Level: Mapping Opportunities and Challenges in Zimbabwe: A Scoping Review

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Abstract:

Within the broader context of digital transformation in local governance, digital strategies are increasingly recognised as critical enablers of the localisation of the Sustainable Development Goals (SDGs). These strategies encompass a wide range of technology-driven interventions, including e-governance platforms, digital data systems, mobile applications, digital service-delivery tools and big data initiatives. Despite this promising outlook, the specific pathways through which digital strategies shape SDG localisation processes in African contexts, particularly in Zimbabwe, remain fragmented and underexplored in the existing literature. This study addresses this gap by mapping and synthesising the fragmented, multidisciplinary literature on digital strategies adopted by local governments to support SDG localisation, while also identifying the opportunities and challenges associated with their implementation in Zimbabwe. To achieve this objective, a scoping review is employed as the most appropriate methodological approach for examining the emergent, multidisciplinary and heterogeneous body of knowledge in this field. The findings of the review indicate that the digital strategies adopted by local governments offer significant opportunities to advance SDG localisation through improved transparency, accountability, service delivery efficiency and citizen engagement. However, the review also identifies several persistent constraints, including deficits in digital infrastructure, limited digital skills and technical capacity, financial constraints and institutional, policy and political barriers. Theoretically, the study contributes to ongoing debates at the intersection of SDG localisation, digital governance and sustainable development scholarship. Practically, it provides an evidence base to inform future empirical research, policy design and context-responsive digital interventions aimed at strengthening local-level SDG implementation.

Keywords:

Sustainable Development, Digital Transformation, SDG Localisation, Local Government, Zimbabwe

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Introduction

Building on the Millennium Development Goals (MDGs), the 193 Member States of the United Nations adopted the 2030 Agenda for Sustainable Development in 2015. The agenda is anchored by 17 interconnected Sustainable Development Goals (SDGs) that address global social, economic and environmental challenges. A decade into implementation, notable though uneven progress has been recorded. For instance, social protection coverage has expanded by approximately ten percentage points, reaching more than half of the world's population (UN DESA, 2025). Over the same period, declines in child marriage and child mortality have contributed to improved educational participation among both girls and boys, while internet connectivity has risen substantially by nearly 70 per cent (UN DESA, 2025).

Despite these gains, overall implementation remains off track: only 35 per cent of the SDGs are on course to be achieved, around 50 per cent are progressing too slowly and 18 per cent are experiencing regression (UN DESA, 2025). With less than half a decade remaining to the 2030 deadline, attention has increasingly shifted from global commitment-setting to questions of implementation effectiveness. The persistent challenge has been translating the global SDG commitments into context-sensitive, actionable local interventions (Suri et al., 2022). In this light, the emerging SDG localisation literature argues that achieving the SDGs depends not only on national-level adoption but also on their meaningful localisation within subnational and local governance systems, where planning, resource allocation and service delivery occur (Immler & Sakkers, 2022; Suri et al., 2022).

Against this backdrop, scholarship on SDG localisation has expanded considerably, highlighting the central role of local governments in aligning national and regional development frameworks with SDG targets. Bilsky et al. (2021) contend that localisation is pivotal because local authorities constitute the sphere of governance closest to citizens and are therefore best positioned to translate global goals into context-responsive actions. A growing body of literature similarly demonstrates the increasingly substantive role of local governments in operationalising and monitoring SDG implementation (Granados & Noferini, 2019; Graute, 2016; Suri et al., 2022). However, evidence on the ground indicates that localisation processes remain uneven, frequently under-resourced and weakly institutionalised, particularly within local governance systems in the Global South (Annan-Aggrey et al., 2021). These constraints have prompted renewed scholarly interest in identifying enabling mechanisms that can strengthen local implementation capacity. In this regard, experiences from the Global North, together with emerging empirical insights, suggest that digital tools and data-driven governance innovations are increasingly viewed as critical accelerators of SDG localisation (ElMassah & Mohieldin, 2020; Mladenović, 2023; Reuter, 2023).

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Within the broader context of digital transformation in local governance, digital strategies are increasingly advanced as critical enablers of the localisation of the SDGs. These strategies encompass a wide range of technology-driven interventions, including e-governance platforms, digital data systems, mobile applications, digital service-delivery tools and big data initiatives. According to ElMassah and Mohieldin (2020, p.8), digital strategies "facilitate the effective implementation of sustainable development through the localisation of SDGs." Therefore, digital strategies are instrumental in operationalising the Agenda 2030 commitment to 'Leaving No One Behind' as they represent "an important step towards making local service delivery more citizen-centred and user-oriented" (Kuhlmann & Bogumil, 2021, p.101). Despite this promising outlook, the specific pathways through which digital strategies shape SDG localisation processes in African contexts, particularly in Zimbabwe, remain conceptually underdeveloped and empirically under-examined.

Additionally, in the Zimbabwean context, existing literature on local governance has largely examined digital transformation initiatives and SDG implementation as separate analytical domains. There is limited integrative analysis of how digitalisation concretely supports SDG localisation. As a result, there is a lack of a comprehensive synthesis that systematically maps the extent, nature and characteristics of digital strategies used to enable SDG localisation. This study addresses this gap by answering the following research question: What digital strategies have been adopted to enable SDG localisation at the local government level and what opportunities and challenges do they present? In addressing this question, a scoping review is employed as the most suitable methodological approach for exploring the emergent, multidisciplinary and heterogeneous body of knowledge in this field. The central objective of the review is to provide a structured synthesis that maps the nature, scope, opportunities and constraints associated with digital strategies for SDG localisation in Zimbabwe. Theoretically, the study contributes to ongoing debates at the intersection of SDG localisation, digital governance and sustainable development scholarship. Practically, it provides an evidence base to inform future empirical research, policy design and context-responsive digital interventions aimed at strengthening local-level SDG implementation.

Methods and Data

A scoping review approach was adopted to systematically explore and synthesise the fragmented, multidisciplinary literature on the challenges and opportunities of digital strategies supporting SDG localisation at the local government level. Pollock et al. (2020) note that the use of scoping reviews as a methodological approach to evidence synthesis has increased significantly in recent years, given their capacity to map the range of available evidence, identify knowledge gaps and clarify key concepts and contextual factors. In this line, this review follows the five-stage methodological framework proposed by Arksey and O'Malley (2005), which includes: (1) identifying the research question, (2) identifying relevant

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studies, (3) selecting eligible studies, (4) charting the data and (5) collating, summarising and reporting the results (Arksey & O'Malley, 2005). In addition, the review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR), with the review process illustrated in Figure 1.

Eligibility Criteria

The eligibility criteria for the literature search were guided by the Population, Concept, Context (PCC) framework, which informed the identification of studies examining digital strategies for SDG localisation at the local government level in Zimbabwe, as illustrated in Table 1. First, within the population element, the search focused on studies addressing local government authorities, including councils and municipalities. Studies focusing solely on digital strategies advanced by national governments, private sector actors, or civil society organisations were excluded. Second, for the concept element, which represents the central phenomenon under investigation, the review included studies that examined digital strategies employed to support local governance processes and public service delivery aimed at implementing and localising the SDGs. These strategies include e-government systems, digital participation mechanisms and smart governance tools that facilitate the localisation of the SDGs and contribute to broader sustainable development objectives. Studies focusing solely on the technical design or infrastructure of digital systems without explicit linkage to SDG implementation or localisation were excluded. Similarly, studies addressing SDG implementation without a digital strategy dimension were not included. Third, regarding the context element, the search primarily focused on Zimbabwean studies. However, given the limited body of literature on digital strategies for SDG localisation in Zimbabwe, the scope was expanded to include studies from across the African continent to identify comparable insights relevant to local governance contexts. In this light, the review adopts a contextual interpretation approach, in which findings from comparable African contexts are analysed for their applicability to Zimbabwe's regulatory, institutional and economic environment. Studies conducted outside the African region were excluded.

Criterion	**Inclusion**	**Exclusion**
Focus	Digital strategies for SDG localisation or implementation, SDG-related governance	Digital strategies without SDG or sustainable development relevance
Governance level	Local government authorities, rural and urban councils	National governments
Geographic scope	Zimbabwe, Africa	Non-African countries

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Type of evidence	Qualitative and Quantitative Studies, conceptual papers, working papers, project reports, government policy documents	News articles, dissertations not publicly accessible
Type of publications	Peer-reviewed articles, books, grey literature, dissertations	Only abstracts
Language	English	Non-English
Timeframe	2015-2025	Pre-2015

Table 1: Eligibility criteria

Information Sources

The primary databases for the scoping review included Scopus and the Web of Science. The selection of these databases was based on their extensive coverage of high-quality, peer-reviewed scholarship across multiple disciplines, particularly in the areas of digital transformation, sustainable development and governance. To complement the database search and minimise the risk of omitting relevant studies, the Google Scholar search engine was employed to capture additional peer-reviewed literature, reports and policy documents. The first 100 records identified through Google Scholar were subjected to the same screening and eligibility procedures applied to the Scopus and Web of Science results before being included in the final synthesis.

Search Strategy

This scoping review employed a set of keywords to identify relevant literature. These included “digital strategies,” “digital governance,” “e-governance,” “Sustainable Development Goals,” “SDG localisation,” “local government,” “municipalities” and “councils.” To ensure temporal relevance to the post-2015 global development agenda, the search was limited to publications produced between 2015 and 2025. This time range corresponds with the adoption and implementation period of the SDGs. Table 2 presents the search strings used for each database, where the keywords were systematically combined using the Boolean operators “OR” and “AND” to capture the Population, Concept and Context (PCC) elements outlined earlier.

Database	**Search String**
Scopus	TITLE-ABS-KEY(digital* OR “digital governance” OR “digital transformation” OR “digital strategy*” OR “e-government” OR egovernment OR ICT OR “information and communication technolog*” OR digitisation OR digitalisation

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	OR “development informatics” OR “online service*” OR “electronic service*” OR “digital public service*”) AND TITLE-ABS-KEY(“Sustainable Development Goal*” OR SDG* OR “Agenda 2030” OR “sustainable development” OR “SDG localisation” OR “SDG localisation” OR “localising SDGs”) AND TITLE-ABS-KEY(“local government” OR municipali* OR “local authorit*” OR council* OR “sub-national government” OR decentralis* OR decentraliz* OR “service delivery”) AND TITLE-ABS-KEY(Africa OR “Sub-Saharan Africa” OR “Southern Africa” OR Zimbabwe)
Web of Science	TS=(digital* OR “digital governance” OR “digital transformation” OR “digital strateg*” OR “e-government” OR e-government OR ICT OR “information and communication technolog*” OR digitisation OR digitalisation OR “development informatics” OR “online service*” OR “electronic service*” OR “digital public service*”) AND TS=(“Sustainable Development Goal*” OR SDG* OR “Agenda 2030” OR “sustainable development” OR “SDG localisation” OR “SDG localisation” OR “localising SDGs”) AND TS=(“local government” OR municipali* OR “local authorit*” OR council* OR “sub-national government” OR decentralis* OR decentraliz* OR “service delivery”) AND TS=(Zimbabwe OR “Southern Africa” OR “Sub-Saharan Africa” OR “Africa”)
Google Scholar	“digital governance” OR “digital transformation” OR “e-government” OR ICT AND “Sustainable Development Goals” OR SDG* OR “Agenda 2030” AND “local government” OR council OR municipality OR “sub-national government” AND Zimbabwe

Table 2: Search Strategy for the Scoping Review

The outcomes of the search and study selection process are presented in the PRISMA flow diagram shown in Figure 1. Three sources: Scopus, Web of Science and Google Scholar, were used to identify potentially relevant records. Following the initial search, duplicate records were removed. The remaining records were then screened based on titles and abstracts to determine their relevance to the study. Subsequently, the full-text articles were assessed against the inclusion and exclusion criteria outlined in Table 1, resulting in the final set of studies included in the review.

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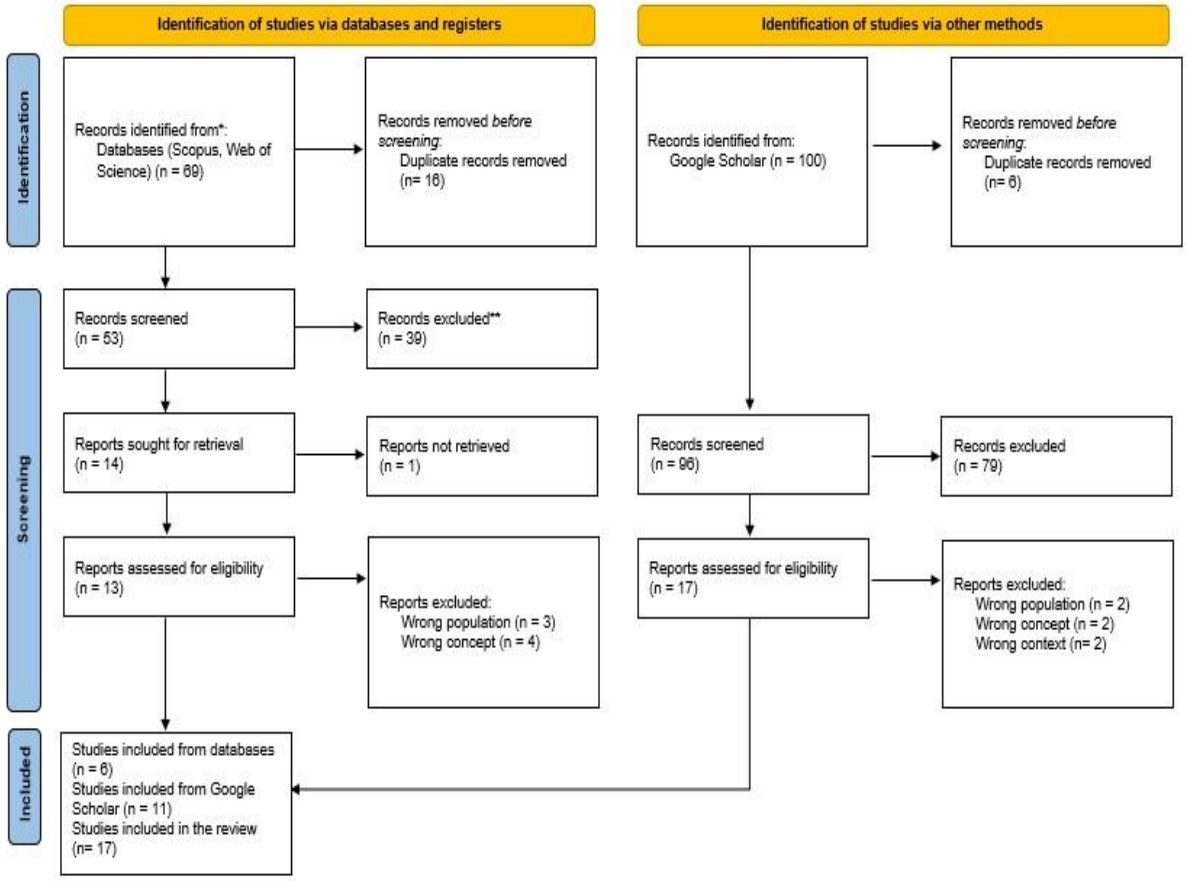

Figure 1: PRISMA flow diagram of the study selection process for this scoping review

Data Analysis and Synthesis

Thematic analysis was employed to examine data from the selected studies. The themes were identified through iterative coding and categorisation of extracted findings to address the central research question: what digital strategies have been adopted to enable SDG localisation at the local government level and what opportunities and challenges do they present? The analytical framework for the review is organised around a three-dimensional approach comprising digital strategies, local government functions and dimensions of SDG localisation. Within this framework, local government authorities employ digital strategies to strengthen governance processes, including public service delivery, planning, citizen engagement and monitoring. The interaction between these digital strategies and core governance functions provides a pathway for local governments to advance localisation of the SDGs. Against this backdrop, the extracted data were synthesised and categorised into three principal analytical domains: digital strategies, opportunities and challenges.

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Results and Discussion

This section presents the findings and discussion derived from the 17 identified studies, with the aim of systematically mapping and synthesising the fragmented and multidisciplinary literature on the challenges and opportunities associated with digital strategies supporting SDG localisation at the local government level. This synthesis is important as it addresses the limited integrative analysis identified in existing studies. Table 3 presents a descriptive summary of the studies included in this review.

Article Reference	**Local Governments discussed**	**Digital Strategies discussed**	**Opportunities for SDG Localisation**	**Challenges**
Chirisa et al. (2023)	Cape Town (SA), Cairo (Egypt), Lagos (Nigeria), Harare (Zimbabwe)	E-administration, GIS, smart CCTV, online bill payments and smart street lighting.	Improved revenue collection, enhanced transparency and solar-powered climate resilience.	Vulnerabilities in integration, privacy risks and limited financial/political capacity.
Chigwenya & Wadzanai (2020)	City of Masvingo (Zimbabwe)	AutoCAD, GPS, GIS, e-planning services and EcoCash for rates.	Real-time virtual planning, youth inclusion and tourism business growth.	Obsolete hardware, lack of skills among staff and exclusion of groups without ICT access.
Hamunakwadi et al. (2025)	African cities	Blockchain technology	Enhancing transparency and reducing corruption, citizen participation	Limited technological infrastructure, regulatory and policy gaps
Hutete et al. (2025)	OR Tambo District Municipality (SA)	IoT sensors, telemetry systems for reservoir monitoring, e-recruitment and data analytics.	Strengthened water governance, resource efficiency and data-driven decision-making.	Skills gaps, high investment costs, and a lack of strategic guidance frameworks.

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Madamombe et al. (2025)	Zimbabwean Local Governments	LLM-based artificial intelligence tools	Efficiency in monitoring and evaluation	Limited ICT infrastructure, data governance and privacy concerns, lack of policy and regulatory frameworks for AI use in public administration
Mangwanya (2025)	Zimbabwean Local Governments	E-governance portals, digital service delivery platforms and HRMS systems.	Accountability, streamlined bureaucratic functions and reduced corruption.	Outdated legislation (Urban Councils Act), electricity/power outages and digital illiteracy.
Maphosa & Maphosa (2023)	SADC Cities (Harare, Johannesburg, Gaborone, Windhoek, Maseru, Dar es Salaam	Websites, Online platforms	Citizen participation, transparency and accountability	ICT infrastructure deficit, resource challenges and weak integration of information systems.
Mudyanadzo & Nzwatu (2019)	Chitungwiza, Mutare, Masvingo (Zimbabwe)	E-payment for taxes, online license applications and municipal websites.	Governance efficiency, sustainable service delivery and improved community relations.	Personnel with limited understanding of systems, reliance on paperwork and poor communication.
Musakwa & Moyo (2020).	Planning Support Systems (PSS) and electronic planning (e-	Southern Africa municipalities	Improved spatial analysis and decision-making, support for	Institutional resistance and organisational culture, low

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	planning), GIS, online platforms		sustainable urban development	prioritisation by leadership.
Zondi et al. (2024)	SA municipalities	Social media, intelligent integrated operations centres.	Smart water/ transport, e-voting opportunities and integrated development planning.	Digital gap (6As), cybersecurity threats and power supply (
Netshirando et al. (2024)	Ehlanzeni, Capricorn, Vhembe Districts (SA)	Intelligent chatbots, self-serving kiosks and cloud-based solutions.	service accessibility and resource optimisation.	Exorbitant internet costs, perceived risk/privacy concerns and lack of skills.
Poshai & Shava (2025)	Mutare, Bulawayo City Councils (Zimbabwe)	LADS (Local Authorities Digital System), e-procurement and PFMS (Finance Management).	Reduced public sector corruption, fiscal transparency and remote working capabilities.	Shortage of gadgets (shared laptops), power cuts and resistance to change.
Roos et al. (2022)	Potchefstroom, Promosa, Ikageng, Lokaleng, Sharpeville (SA)	Yabelana ecosystem (Mobile App, Website and USSD code).	age-inclusive access to basic services and healthcare information.	Digital lag among older populations and rural infrastructure limitations.
Shumba et al. (2022)	City of Gweru (Zimbabwe)	IoT sensors for water pumps and sewer leakage detection.	Improved clean water delivery and accountability in sanitation management.	Lack of data backup policies, poor goal dissemination and political interference.
Siebritz et al. (2021)	Drakenstein, Cape Town,	SDI (Spatial Data	Sustainable planning, providing	Vague legal frameworks, lack of

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	Joburg, Amathole (SA)	Infrastructure), Enterprise GIS and Open Data Portals.	authoritative geospatial info.	national strategy and resource scarcity in local municipalities.
Vyas-Doorgapersad (2024)	South African Municipalities	E-government platforms (Zoom, Teams) and satellite internet services.	Smart services (water, transport, energy) and global competitiveness.	lack of institutional readiness, skills shortage and financial mismanagement.
Van der Hoogen et al. (2024)	Municipalities in Eastern Cape (SA): Chris Hani, Dr AB Xuma, Enoch Mgijima, Intsika Yethu	IoT sensors, Big Data analytics, smart metering and AI-driven cameras.	Energy use efficiency, waste management monitoring and resource optimisation.	Lack of standardised digital principles and social inequities caused by the digital divide.

Table 3. Descriptive summary of the studies included in this scoping review.

Opportunities: Digital Strategies Supporting SDG Localisation at the Local Government Level

E-Government Service Delivery Platforms

Selected studies indicate that most local government authorities have embraced e-government service delivery platforms to support the digitalisation of administrative processes and service delivery associated with SDG localisation. For example, the study by Chirisa et al. (2023) shows that local authorities in Harare (Zimbabwe), Cape Town (South Africa), Cairo (Egypt), and Lagos (Nigeria) have adopted e-administration systems to address challenges linked to rapid urbanisation in African cities. These e-government platforms include e-payment systems, complaint management registers, online licence applications and municipal websites (Mudyanadzo & Nzwatu, 2019). Such platforms enhance administrative efficiency while reducing bureaucratic delays (Chirisa et al., 2023; Vyas-Doorgapersad, 2024).

Notably, the study by Poshai and Shava (2025) indicates that Zimbabwean local government institutions are implementing a comprehensive e-government service delivery platform, the Local Authorities Digital System (LADS). The system comprises two key components: an Enterprise Resource Planning (ERP) system and an Integrated Financial Management Information System (IFMIS), which digitally connects sub-national governments to improve procurement, project management, risk management,

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compliance, financial performance monitoring, expenditure control, budgeting and financial reporting (CLG, 2021; Poshai & Shava, 2025). In this context, the adoption of e-government service delivery platforms contributes to the localisation of the SDGs, particularly SDG 16, which emphasises the development of effective, accountable and transparent institutions. These digital strategies have therefore played an important role in strengthening transparency, accountability, accessibility and responsiveness in local government service delivery (Hamunakwadi et al., 2025; Poshai & Shava, 2025).

Smart City and Internet of Things (IoT) Systems

Studies included in this review also indicate that several local governments in Zimbabwe and comparable cities in southern Africa are adopting smart technologies to manage urban infrastructure and public service delivery. For instance, the Harare City Council is implementing smart street lighting in line with a smart city concept in partnership with ZESA and the Rwanda Energy Group (UCAZ, 2022). This initiative enables a centralised digital system to monitor, control, and maintain smart streetlights across major roads (UCAZ, 2022). In the same vein, Poshai and Shava (2025) indicate that although the concept of smart cities is still emerging in Zimbabwe, several initiatives are being implemented in line with the Smart Zimbabwe 2030 Master Plan.

In comparable cities in southern Africa, Louw and Netswera's (2024) study shows that the City of Johannesburg has implemented Rea Vaya's integrated public transportation system as part of its smart city initiatives. Similarly, Van der Hoogen et al. (2024) illustrate how local governments have adopted smart city and IoT systems, including the Joburg Broadband Network Project in the City of Johannesburg, the Connected Cape initiative in Cape Town as part of its broadband rollout programme, and eThekwini's broadband fibre-optic network (Van der Hoogen et al., 2024). These initiatives demonstrate how smart city and IoT systems can support inclusive, safe, resilient and sustainable urban development, consistent with the objectives of SDG 11. Furthermore, studies by Van der Hoogen et al. (2024) and Shumba et al. (2022) suggest that such digital strategies are important for addressing urban challenges, including rising energy consumption, environmental pollution, pressure on waste management systems and social inequality.

Digital Citizen Engagement Platforms

Studies included in the review reveal that local governments have deployed several digital tools to promote citizen participation in governance processes. Key platforms include AI-powered chatbots, interactive websites, mobile applications and social media. Maphosa and Maphosa (2023), who assess the e-government maturity of cities in the Southern African Development Community (SADC), show that Zimbabwean local councils and their regional counterparts have adopted municipal websites and related digital services as platforms for promoting citizen engagement through information provision and online

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interaction. Similarly, Netshirando et al. (2024) find that local authorities are adopting emerging digital technologies, such as intelligent chatbots and self-service kiosks, to enhance service delivery and citizen engagement.

Roos et al. (2022) also indicate that local municipalities in South Africa have adopted the Yabelana ecosystem digital platform, which targets older citizens and promotes their participation in local governance processes. The platform utilises technology compatible with older generation 'push-button' mobile phones, thereby improving accessibility for elderly users. These digital platforms, therefore, provide avenues for engaging citizens in local development planning and governance processes. Poshai and Shava (2025) further suggest that such digital citizen engagement platforms contribute to the localisation of SDG 16, as improved transparency and public participation can help reduce opportunities for public sector corruption. As a result, the adoption of these digital technologies supports more inclusive and participatory decision-making, which constitutes an important pillar of SDG localisation at the local government level.

Geographic Information Systems (GIS) for Planning

The reviewed studies indicate that local councils and municipalities are increasingly adopting GIS technologies for spatial planning and urban management. For example, the study by Chirisa et al. (2023) shows that cities such as Harare (Zimbabwe), Cape Town (South Africa), Cairo (Egypt), and Lagos (Nigeria) are utilising GIS-based technologies to address challenges associated with rapid urbanisation. Similarly, Musakwa and Moyo (2020) demonstrate how cities such as Harare and Bulawayo in Zimbabwe, as well as Johannesburg and Ekurhuleni in South Africa, are adopting Planning Support Systems (PSS) and e-planning applications to strengthen urban planning and management processes. According to Siebritz et al. (2021), the availability of up-to-date geospatial data generated through GIS systems provides local authorities with significant opportunities to support the achievement of the SDGs, particularly in areas related to urban resilience and environmental management.

Digital Public Financial Management Systems

Local governments have increasingly adopted digital public financial management systems to improve financial accountability, revenue collection and fiscal management. In Zimbabwe, the IFMIS component of the LADS system provides a digital platform for integrated financial management (Poshai & Shava, 2025). Complementing this system, local governments have also introduced a range of electronic billing and online payment systems. For example, Chirisa et al. (2023) indicate that local councils in Zimbabwe have adopted mobile money platforms such as EcoCash and Telecash to facilitate the payment of municipal rates and utilities. These digital platforms have also enabled the adoption of e-billing systems, reducing reliance on hardcopy documentation and, in turn, supporting environmental sustainability objectives associated with the SDGs in the context of climate change (Chirisa et al., 2023). The digital

public financial management systems identified in the selected studies strengthen local fiscal sustainability, an important driver of the effective implementation of the SDGs at the local government level.

Contextual Transferability of Digital Strategies to Zimbabwe

Although critical insights from comparable African countries such as South Africa, Nigeria and Egypt provide significant lessons, their applicability to Zimbabwe requires careful contextual filtering. For example, capital-intensive smart city interventions, such as IoT-enabled transport systems in Johannesburg, demonstrate strong alignment with SDG 11 but remain constrained in Zimbabwe due to economic challenges, an unstable electricity supply and fragmented institutional coordination. This is also the case with IoT sensors and telemetry systems for reservoir monitoring in the OR Tambo District Municipality, which remain constrained in Zimbabwe. However, lower-cost digital interventions such as mobile-based payment platforms, websites and online platforms exhibit higher contextual compatibility, given Zimbabwe's relatively high mobile penetration and existing digital ecosystems. Against this backdrop, the transferability of digital strategies is uneven and depends on regulatory alignment, financial feasibility and institutional capacity within Zimbabwe's local governance framework.

Mapping Digital Strategies to SDG Targets

The mapping from the discussion summarised in Table 4 below shows that most digital strategies are heavily concentrated around SDG 16, which emphasises the development of effective, accountable and transparent institutions and SDG 11, which focuses on safe, resilient and sustainable urban development. This shows a governance-centric digitalisation trajectory which needs to be integrated into pro-poor service delivery frameworks to address broader socio-economic transformation envisioned by the SDGs.

Digital Strategy	SDG	Mechanism of contribution
E-government service delivery platforms	SDG 16	strengthening transparency, accountability, accessibility and responsiveness in local government service delivery
Digital public financial management systems	SDG 1, SDG 11	Enhances access to services and financial inclusion
GIS systems	SDG 11, SDG 13	Supports urban planning and climate resilience
Smart city and Internet of Things (IoT) systems	SDG 11, SDG 6	Addresses urban challenges, including rising energy consumption, environmental pollution,

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		pressure on waste management systems and social inequality.
Digital engagement platforms	SDG 16	Enhances participatory governance

Table 4: Mapping digital strategies to SDG targets

Obstacles to the Adoption of Digital Strategies for SDG Localisation: Challenges and Constraints at the Local Government Level

Infrastructure and Resource Deficit

One of the central challenges identified in the selected studies hindering the adoption of digital strategies by local governments for SDG localisation is inadequate digital infrastructure and limited technological resources. Mangwanya's (2025, p.16) study indicates that local governments across Zimbabwe lack the basic infrastructure required for digitalisation, such as "reliable electricity, broadband internet and secure data storage infrastructure." This challenge is particularly pronounced for rural district councils, which are often confronted with weak mobile network coverage and, in some cases, the absence of reliable internet services (Mangwanya, 2025). Similarly, Poshai and Shava (2025) note that digital public financial management systems depend on a stable electricity supply, which remains inconsistent in Zimbabwe due to persistent and erratic power generation.

This infrastructure challenge is also evident in comparable local government contexts across the region. For example, Muluh and Tebeck's (2024) study on ICTs and e-democracy in local government in Cameroon highlights significant inequalities in internet and mobile penetration between rural and urban areas, which affect local authorities' adoption of digital strategies. Beyond this digital divide, the country also faces challenges related to unreliable electricity supply and poor or, in some cases, absent network infrastructure (Muluh & Tebeck, 2024). In a similar vein, Vyas-Doorgapersad (2024) notes that infrastructure and resource deficits, particularly limited internet coverage and unreliable electricity supply, continue to constrain digital governance initiatives in South Africa.

In addition, many local governments in Zimbabwe operate with obsolete technologies, which further limit their capacity to adopt and utilise modern digital strategies to advance SDG localisation (Chigwenya & Wadzanai, 2020; Mangwanya, 2025; Madamombe et al., 2025). Given these infrastructure and technological constraints, local governments' ability to effectively implement digital strategies for SDG localisation is significantly hindered, thereby limiting improvements in service delivery and institutional efficiency.

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Limited Digital Skills and Technical Capacity

A significant challenge identified across the reviewed studies is the limited digital skills and technical capacity among local government staff. Poshai and Shava (2025) argue that the shortage of specialised technological personnel and widespread digital illiteracy have created a major barrier to the successful adoption of digital systems in Zimbabwe's local governments. Similarly, Shumba et al. (2022) found that only 44.4 per cent of staff used ICT tools to perform their duties in their assessment of the Gweru City Council's readiness to adopt IoT technologies in water and sanitation management. Mangwanya (2025) further notes that digital illiteracy among local government employees has contributed to resistance toward the adoption of digital systems, partly due to fears of job displacement and organisational restructuring.

On the other hand, Netshirando et al. (2024) observe that digital literacy challenges are not limited to local government personnel but also affect citizens who are expected to utilise these digital platforms. Their survey of 288 users of local government digital platforms across two provinces in South Africa indicates that many citizens face digital access and literacy constraints, which negatively affect the effectiveness of local government digital transformation initiatives aimed at improving service delivery. These digital capacity constraints among both local government staff and citizens weaken the broader digital transformation needed to advance SDG implementation at the local level.

Economic and Financial Constraints

Most of the reviewed studies indicate that the high cost of digital technologies and the limited financial capacity of local governments in Zimbabwe constitute fundamental obstacles to the adoption of digital transformation initiatives. Ndebele (2024) contends that financial constraints are a major factor contributing to low e-readiness and the limited adoption of e-government platforms at the local level. In the same vein, Mangwanya (2025, p.16) states that "Zimbabwean local governments face acute budgetary constraints that limit their ability to invest in ICT infrastructure, technical support, or personnel training." These financial limitations have led local councils to deprioritise digital investments, particularly amid pressing social service and infrastructure demands associated with rapid urbanisation.

In cases where digital platforms have been established, citizens are often confronted with high access and usage costs. Mangwanya (2025) indicates that many households in Zimbabwe, particularly in low-income and peri-urban areas, cannot afford the internet data tariffs, smartphones and electricity required to engage effectively with local government digital systems. In this light, Mvuyana et al. (2024) argue that these affordability constraints reinforce existing digital inequalities and widen the digital divide, thereby limiting the transformative potential of smart local governance. This reality ultimately undermines the principle of inclusive governance that underpins SDG localisation.

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Institutional, Policy and Political Constraints

Another key challenge identified in the selected studies hindering the adoption of digital strategies by local governments concerns weak institutional governance structures, inconsistent policy frameworks and political interference from the central government. Regarding institutional governance, Mangwanya (2025), using the Technology Acceptance Model (TAM) and the Technology Organisation Environment (TOE) framework, concludes that digital transformation in Zimbabwean local governments is significantly constrained by weak institutional coordination. Similarly, Ndebele (2024) finds that the inadequacy of digital participation strategies within local government departments negatively impacts citizen engagement.

Beyond weak institutional coordination, local governments in Zimbabwe are also confronted with outdated policy and legislative frameworks that are not aligned with digital governance requirements (Mangwanya, 2025). Comparable challenges are observed in South Africa; for example, the South Africa Spatial Data Infrastructure (SASDI) legal framework, intended to support local governments in collecting and maintaining geospatial information, is described as “vague in many regards and does not provide enough information on the institutional and policy frameworks…” (Siebritz et al., 2021). Additionally, excessive political interference by Zimbabwe’s central government limits the autonomy of local authorities, hindering their ability to implement and manage digital transformation processes effectively (Chigwenya & Wadzanai, 2020; Mudyanadzo & Nzwatu, 2019; Shumba et al., 2022). Consequently, institutional, policy and political constraints reduce the effectiveness of digital governance in advancing integrated SDG implementation at the local government level.

Privacy and Security Concerns

Some of the selected studies in this review highlight legitimate concerns regarding privacy and security of sensitive data for both citizens and local government authorities. For instance, Poshai and Shava (2025, p. 388) report that the implementation of Zimbabwe’s LADS has been hindered by the “lack of robust cyber security systems for data privacy.” As a result, citizens have been reluctant to share personal information on LADS due to fears of cyber victimisation (Poshai & Shava, 2025). Similarly, Netshirando et al. (2024, p.8) find that citizens’ decisions to adopt digital platforms are strongly influenced by their perceptions of security and trust in e-government systems. Against this backdrop, addressing privacy and security concerns is critical for building public trust in local government digital initiatives, which in turn supports the effective localisation of the SDGs.

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Policy Implications: Recommendations for Local Governments' Adoption of Digital Strategies for SDG Localisation

Taking into account the opportunities and constraints discussed, several strategic actions can be adopted by Zimbabwean local governments to enhance the effectiveness of digital strategies in advancing SDG localisation. However, given the uneven levels of digital maturity across Zimbabwean local authorities, a one-size-fits-all approach to digital transformation is neither feasible nor desirable. There is a need for a phased and differentiated strategic approach. For instance, Rural District Councils should prioritise low-cost mobile-based service delivery platforms because they are often constrained by limited infrastructure and financial capacity. On the other hand, urban councils are better positioned to implement more advanced digital systems, including integrated smart infrastructure and data-driven governance platforms.

Four main strategies are recommended: first, local governments should prioritise investment in reliable and secure digital infrastructure. A coordinated investment approach through Urban Councils Association of Zimbabwe (UCAZ) and Association of Rural District Councils of Zimbabwe (ARDCZ), in collaboration with private partners, is essential to mitigate the substantial costs associated with comprehensive digital transformation initiatives aimed at advancing the SDGs. Second, there is an urgent need for local councils to develop digital competencies among their staff. To reduce costs, local authorities can collaborate with state universities to design tailor-made capacity-building programmes and provide technical assistance in developing digital systems. Strengthening the human capital base will better position local governments to implement and utilise digital technologies effectively. Third, local governments should establish robust policies and legal frameworks that strengthen data protection, privacy and cybersecurity. These frameworks serve as anchors for building public trust and encourage citizen participation in local governance processes. Finally, digital transformation initiatives must be inclusive, ensuring that vulnerable populations are not left behind. Implementing digital literacy programmes can help realise the SDG principle of "leaving no one behind", enabling all citizens to participate in and benefit from local government digital services.

Conclusion

This scoping review sought to map and synthesise the fragmented, multidisciplinary literature on digital strategies adopted by local governments to support SDG localisation, and to identify the opportunities and challenges associated with their implementation in Zimbabwe. The literature shows that digital strategies adopted by local governments offer significant opportunities to advance SDG localisation by improving transparency, accountability, service delivery efficiency and citizen engagement. The strategies identified include a wide range of technology-driven interventions, such as e-governance platforms, digital data systems, mobile applications, digital service-delivery tools and big data initiatives.

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These digital strategies are increasingly recognised in the emerging literature as critical enablers of the localisation of the SDGs. However, the review also found that local authorities face several challenges in adopting digital strategies. These include deficits in digital infrastructure, limited digital skills and technical capacity, financial constraints and institutional, policy and political barriers. Such constraints limit local governments' ability to fully harness digital technologies for effective SDG localisation. Theoretically, the study contributes to ongoing debates at the intersection of SDG localisation, digital governance and sustainable development scholarship. Practically, it provides an evidence base to inform policy design. Future research should focus on empirical evaluations of digital governance initiatives at the local government level in Zimbabwe, particularly examining how digital strategies can be designed and implemented in context-responsive ways to strengthen localisation of SDGs.

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