THE UPTAKE OF E-GOVERNMENT IN THE ZIMBABWEAN PUBLIC SECTOR: A CASE OF THE MULTI AID SUPPORT ORGANISATION (MASO)

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Abstract
The advent of e-government within the Zimbabwean public sector represents a transformative effort to enhance service delivery and foster citizen empowerment by increasing access to information. This paradigm shift underscores the potential for governmental institutions to become more transparent, responsive, and technologically aligned. This study investigated the primary determinants influencing the adoption of e-government initiatives. Adopting a mixed methods approach to study the uptake of e-government at the multi aid support organisation, the research revealed that although a basic level of computer literacy exists among both personnel and stakeholders, critical impediments remain. These include the rapid pace of technological evolution, insufficient implementation of strategic frameworks, and limited information communication technology proficiency. The findings highlight the necessity of reinforcing public–private partnerships, improving competencies, expanding awareness of e-government platforms, and ensuring accessible infrastructure to optimise the uptake and operationalisation of digital governance.

Keywords: *e-government, digital inclusion, digital transformation, adoption*

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Introduction

The fourth industrial revolution is a driver for digital transformation of public service delivery through e-government. The use of Information Communication Technology (ICT) has become a critical priority for governments worldwide. The Zimbabwean government has actively pursued e-government initiatives through policy frameworks like the Smart Zimbabwe 2030 Master Plan, National Development Strategy 1 and 2, which address government priorities and support for ICT and e-government initiatives, and the National ICT Policy 2022-2027 to enhance service delivery, improve governance, and increase administrative efficiency. The Minister of Information Communication Technology, Postal and Courier Services of Zimbabwe officiated at a Postal and Telecommunications Regulatory Authority of Zimbabwe Strategic Formulation Workshop where a new digital roadmap 2026-2030 was drafted. These efforts align with global trends where ICTs are leveraged to create more transparent, accessible, and citizen-centric public services (World Bank Group, 2025). Unfortunately, the uptake of e-government services in Zimbabwe's public sector has faced significant challenges.

Zimbabwe's e-government landscape presents a paradox. While the country has established policy foundations for digital government transformation, practical implementation is weak due to multifaceted barriers. Existing research identifies critical challenges including inadequate technological infrastructure, low digital literacy among civil servants and citizens, bureaucratic resistance to change, and inconsistent funding allocations (Mudenda & Chigona, 2021**)**. These barriers are pronounced in public sector institutions, where legacy systems and organisational cultures often resist digital innovation (Ruhode et al., 2008). The gap between policy intent and practical implementation raises important questions about the factors that facilitate or hinder e-government adoption in Zimbabwe.

This study examined e-government adoption at MASO whose experiences with e-government adoption reflect broader challenges facing Zimbabwe's public sector. MASO's mandate to maintain its relevance in the rapidly changing environment makes digital transformation particularly urgent, as efficient service delivery directly impacts vulnerable populations. The research focuses on three interconnected dimensions of e-government adoption: technological readiness, organisational capacity, and policy implementation. Technological readiness examines the availability and adequacy of ICT infrastructure, including hardware, software, and network connectivity. Organisational capacity assesses human resource competencies, leadership commitment, and change management processes that influence adoption. Policy implementation evaluates how national e-government strategies translate into operational realities at institutional level. By analysing these dimensions, the study provides a holistic understanding of e-

government adoption challenges. This investigation is particularly timely as Zimbabwe seeks to accelerate its digital transformation agenda in line with regional and global trends. The African Union's Digital Transformation Strategy (2020-2030) and the United Nations (UN) Sustainable Development Goals both emphasise the importance of digital government for inclusive development (UN, 2016; African Union, 2020). Understanding the barriers to e-government adoption in institutions like MASO can inform more effective policy formulation and implementation strategies across Zimbabwe's public sector.

The objectives of the study are:

1. to assess the level of technological readiness for e-government adoption at MASO;
2. to examine organisational capacity factors including human resource competencies and leadership commitment that affect e-government adoption;
3. to evaluate the extent to which national e-government strategies are implemented operationally within MASO.

Literature review

Governments worldwide are increasingly leveraging digital platforms to improve interactions. E-government is the application of ICTs to enhance government efficiency, transparency, and service delivery to become a global imperative. It aims to transform governments so that they become more accessible, effective and accountable as its focus is on transformative possibilities for governance and emphasis on service delivery because it overcomes the physical bounds of traditional paper and physical based systems (Centre for Democracy and Technology, 2002; Hafkin, 2009; Solinthone & Rumyantseva, 2016). This shift promises numerous benefits, including reduced operational costs, increased accessibility to public services, and greater accountability. However, the successful uptake and implementation of e-government initiatives are complex processes, influenced by a myriad of technological, organisational, environmental, and socio-cultural factors. In developing countries, the challenges associated with e-government adoption are often more pronounced due to limitations in infrastructure, digital literacy and institutional capacities. Zimbabwe, like many nations in sub-Saharan Africa, has embarked on the e-government journey to modernise its public sector and improve service delivery. While progress has been made, the pace and effectiveness of e-government uptake vary across different governmental entities.

Empirical review

The global landscape of e-government development has witnessed significant evolution over the past two decades, with varying degrees of success across different countries and contexts. The UN E-Government Survey 2024 tracks this progress through the E-Government Development Index (EGDI), which measures countries' e-government readiness and capacity. According to the UN (2016) and UN E-Government Survey (2024), the global average EGDI value has shown steady improvement, with countries like Denmark, Estonia, and Singapore leading the way in digital government transformation. They have established comprehensive digital ecosystems that integrate various government services, enabling seamless citizen interactions and efficient public service delivery. Wilson and Mergel (2022) conducted an exploratory analysis of digital champions in the United States (US) government, revealing how individuals within government institutions navigate barriers to digital transformation. They identified key strategies employed by these champions, including storytelling, community building, external validation, and citizen centric approaches. They highlighted the interconnected nature of barriers and the non-linear quality of strategies required to overcome them, emphasising the importance of cultural strategies and external peer networks in driving e-government success.

Hazineh et al. (2022) provided a comprehensive framework for understanding e-government limitations and challenges across both developed and developing countries. Their analysis categorised challenges into macro and micro factors, as well as internal and external dimensions. They identified key barriers including lack of funding, rigid organisational structures, poor ICT infrastructure, and insufficient digital literacy. The study emphasised that e-government implementation requires a holistic approach considering technological, organisational, and environmental factors.

Lam (2005), and Ishengoma & Deo (2025) addressed the technical challenges of e-government integration, focusing on the difficulties governments face in achieving interoperability between disparate systems. The authors highlighted the lack of infrastructure, digital divide and problem of "islands of IT" within government organisations and emphasised the importance of architectural integration for effective e-government implementation. Lam's work provided valuable insights into the technical barriers that prevent seamless service delivery, including data standardisation issues, legacy system constraints, and the complexity of integrating multiple government agencies. Nevertheless, the study's focus on technical aspects overlooked important organisational and socio-cultural factors that influence integration success. Similarly, Glyptis et al. (2020) examined e-government implementation challenges specifically in small countries, providing insights from project managers' perspectives. Their research

identified unique challenges faced by small nations, including limited resources, small administrative capacities, and the need for agile project management approaches. The study revealed that small countries often struggle with economies of scale in e-government projects and face difficulties in attracting and retaining skilled ICT personnel.

The African continent presents a unique landscape for e-government development, characterised by significant disparities in technological infrastructure, economic development and institutional capacity across different countries. The regional progress in e-government has been relatively slow and uneven, with substantial variations between North African countries and Sub-Saharan Africa. According to the UN EGDI rankings, African countries have consistently lagged behind in global averages, though some nations have made notable strides in recent years. For example, Nkohkwo & Islam (2013) and Rarhoui (2024) examined the challenges to successful e-government implementation across 49 Sub-Saharan African countries. Their analysis revealed a complex web of interconnected barriers including limited ICT infrastructure, inadequate electricity supply, low internet penetration rates, insufficient funding, lack of political will, high telecommunication costs and low levels of digital literacy among government officials and citizens. The study emphasised that these challenges are often compounded by weak institutional frameworks, corruption and political instability.

Verkijika and De Wet (2018) provided empirical insights into e-government adoption in Sub-Saharan Africa through their study in South Africa, where they tested the Unified Model of E-Government Adoption. Their research identified key determinants of citizen adoption including perceived usefulness, ease of use, social influence and facilitating conditions. The study revealed that trust in government and perceived risk were significant factors influencing citizens' willingness to use e-government services. Their findings contributed valuable empirical evidence to understanding user behaviour in the African context. Nevertheless, the study's focus on South Africa, which has relatively advanced ICT infrastructure compared to other Sub-Saharan African countries, may limit the generalisability of findings to less developed nations in the region.

Agbozo et al. (2018) focused specifically on personal data and privacy barriers to e-government adoption in Sub-Saharan Africa. Their research revealed that a significant portion of the African population is reluctant to share personal information with governments due to concerns about data security, privacy violations and misuse of information. The study highlighted the importance of trust-building measures and robust data protection frameworks for successful e-government implementation. Their findings emphasised that technical solutions alone are insufficient without addressing underlying trust and privacy concerns.

Mutula and Mostert (2010) examined the challenges and opportunities for e-government development in Africa, providing a continent-wide perspective on the factors influencing digital government initiatives. Their study identified key enablers including mobile technology adoption, increasing internet penetration and growing political commitment to ICT development. They also highlighted persistent challenges such as inadequate infrastructure, limited financial resources, skills shortages and weak regulatory frameworks. The research emphasised the potential of mobile government (m-government) as a leapfrogging opportunity for African countries to bypass traditional e-government infrastructure limitations.

Zimbabwe has embarked on its e-government journey with varying degrees of success and numerous challenges, reflecting the broader trends observed in developing countries. The implementation of ICTs and e-government initiatives in Zimbabwe dates back to the early 1970s with the establishment of the Central Computing Services (CCS), (Moyo, 2024). Subsequent policy frameworks, such as the Integrated Results Based Management System in 2005, recognised e-government as a crucial component of national development. Despite these efforts, the progress has been slow and fraught with obstacles.

Moyo (2024) provided a comprehensive appraisal of e-government and development in Zimbabwe, tracing its history and highlighting key national and international documents that have influenced its ICT and e-government strategies. The study assesses Zimbabwe's e-readiness based on a 2005 survey, which scored 1.4 out of 4, indicating significant room for improvement. Moyo (2024) pointed out the lack of citizen-to-government online communication, the absence of distinct and harmonised institutional apparatuses for ICT, and a combined government policy framework for e-government expansion as major shortcomings. A critical gap identified was the retrograde ICT infrastructure, particularly in the telecommunications sector and the lack of electricity in many rural areas, hindering ICT-based service implementation. While valuable for its historical overview and policy context, this study is primarily descriptive and does not present new empirical data or in-depth case studies of specific e-government implementation projects. Its reliance on a 2005 e-readiness assessment also means it may not accurately reflect the current state of e-government infrastructure and digital literacy in Zimbabwe.

Zinyama and Nhema (2016) further appraised e-government and development in Zimbabwe by comparing its progress with other African countries using the regional EGDI. Their report indicated that in 2014, Zimbabwe was ranked 126th globally with an EGDI of 0.3585, showing only a slight improvement from its 2012 ranking. The study highlights general e-government trends in Africa such as mobile government initiatives,

and emphasises the need for policy adjustments to incorporate technology into national development strategies. However, similar to Moyo (2024), this study is an appraisal and lacks primary empirical research. The data used for EGDI rankings is from 2014, which may not reflect the most current situation and it does not offer detailed insights into the specific factors influencing e-government uptake at a granular level within the Zimbabwean public sector organisations, nor does it focus on specialised entities like MASO.

Rajah (2015) offered an overview of the progress made in e-government in Zimbabwe and discusses the challenges that lie ahead. The research identifies common barriers such as lack of funding, rigid organisational structures and poor ICT infrastructure as significant impediments to e-government initiatives in the country. Rajah's work provides a general understanding of the obstacles faced by e-government initiatives. However, this is a brief overview that does not provide in-depth analysis or empirical data. It broadly lists challenges without offering specific examples, detailed solutions and specific public sector organisations or the impact of e-government on service delivery at a localised level, which is crucial for understanding the context of MASO.

Masimba and Zishiri (2021) examined the factors influencing the adoption of e-government services by citizens in Zimbabwe. Their study contributes to the understanding of user acceptance and usage of e-government services in the Zimbabwean context, aiming to highlight key factors that affect e-government adoption and acceptance. While focusing on citizen adoption, this study may not adequately address the supply-side challenges or the internal organisational factors influencing e-government implementation within the public sector. It also lacks a specific focus on specialised public sector organisations like MASO and its findings might be generalised to the broader citizen population rather than specific user groups within organisations. The methodology and specific empirical data are not fully detailed in the abstract, limiting a deeper assessment of its limitations.

Mukonza et al. (2016) critically examined the socioeconomic and demographic factors that determine e-government adoption among residents in two local authorities in Zimbabwe. Their study provides empirical insights into how factors like age, education, income, and access to technology influence citizens' willingness and ability to use e-government services. This research contributes to understanding the demand-side factors of e-government uptake in specific Zimbabwean contexts.

However, while providing empirical data, the study's focus is limited to residents in two local authorities, which may not be representative of the entire Zimbabwean population or the specific user base of specialised public sector organisations like MASO. It

primarily focuses on citizen adoption and may not adequately address the institutional, political, or infrastructural challenges from the government's perspective. The study also does not delve into the internal e-government systems or the unique operational contexts of specialised public sector entities.

Gaps in knowledge

While the empirical review provides a general understanding of e-government uptake in Zimbabwe, several knowledge gaps remain, particularly concerning the specific context of MASO and similar non-governmental or quasi-governmental entities within the Zimbabwean public sector. The existing literature largely focuses on broader governmental institutions and ministries. There is a lack of in-depth studies on e-government uptake within specific public sector organisations like MASO, which may have unique operational structures, funding mechanisms and service delivery models that influence their adoption of e-government initiatives. The challenges and success factors identified in general public sector studies may not fully apply or may manifest differently in such specialised organisations.

Furthermore, while some studies touch upon citizen-centric aspects of e-government, there is limited research on the specific needs, perceptions, and challenges faced by the direct beneficiaries or internal users of e-government systems within organisations like MASO. Understanding the user experience in such contexts is crucial for effective implementation and sustained uptake. The general literature acknowledges socio-cultural factors as influencing e-government adoption.

However, there is a need for more nuanced research on how these factors specifically interact with the technological and organisational aspects of e-government uptake within a particular organisation like MASO, which operates within a specific community and deals with sensitive health-related information. Many studies focus on the initial adoption and implementation phases of e-government. There is a gap in understanding the long-term sustainability of e-government initiatives within organisations like MASO, including challenges related to maintenance, upgrades, and evolving user needs over time.

Finally, a lack of comparative studies between MASO and other similar non-governmental or public sector health organisations in Zimbabwe or the region hinders the identification of best practices and common pitfalls specific to this type of entity. These gaps highlight the need for more targeted research that delves into the intricacies of e-government uptake within specific, specialised public sector organisations in developing countries, moving beyond broad national or regional analyses.

Theoretical framework

Layne and Lee (2001) proposed a four-stage 'stages of growth' model for fully functional e-government, based on observations of e-government initiatives in the United States. They posit that e-government is an evolutionary phenomenon, and initiatives should be derived and implemented accordingly. The four stages are: Cataloguing, where governments establish an online presence primarily for providing information to citizens, acting as an online brochure with static information about government services, departments and contact details. Transaction, where governments begin to offer online services allowing for two-way interactions, such as downloading forms, submitting applications, or making payments, shifting focus from information provision to electronic transaction completion. Vertical Integration, which involves the integration of services within a specific government function or across different levels of government for a particular service, aims to streamline processes and provide a more seamless experience for citizens by connecting related services. And finally, Horizontal Integration, the most advanced stage, involving comprehensive integration of services across different government functions and departments. This aims to create a 'one-stop shop' for citizens, where they can access a wide range of services from various agencies through a single portal, often requiring significant organisational and technological changes (Layne & Lee, 2001; Scholl, 2005; Yimbo, 2011; Lemke et al, 2020).

Layne and Lee (2001) emphasised that each stage presents unique technological and organisational challenges. The model highlights the need for a multi-perspective transformation within government structures and functions as they transition through these stages, ultimately aiming for a citizen-centric approach to service delivery. While this model provides a foundational understanding of e-government development stages, its primary focus on the US context and a general government perspective limit its applicability to the specific nuances of e-government uptake in developing countries and specialised organisations like MASO. The model, being largely technology-centric, may not adequately capture the socio-cultural, political, and organisational complexities prevalent in such environments.

A more suitable theoretical model for analysing e-government uptake in the Zimbabwean public sector, particularly within an organisation like MASO, which incorporates a broader range of influencing factors beyond technological maturity, is the Technology Organisation Environment (TOE) framework developed by Tornatzky et al. (1990). This framework combines elements of the Unified Theory of Acceptance and Use of Technology (UTAUT) proposed by Venkatesh et al. (2003), thus offering a more comprehensive lens. The TOE framework examines the adoption of technological

innovations within an organisation by considering three key contexts: the technological context; organisational context and environmental context. The technological context refers to the internal and external technologies relevant to the organisation. In the context of MASO, this would include the availability of appropriate e-government infrastructure, internet connectivity, software and the technical expertise to manage and utilise these technologies. On the other hand, the organisational context describes the characteristics and resources of the organisation, such as its size, structure, managerial support, internal processes and the skills of its employees. For MASO, this would involve assessing its organisational readiness, leadership commitment to e-government, internal policies and the digital literacy of its staff and target beneficiaries. The environmental context refers to the external environment in which the organisation operates, including industry characteristics, market structure and government policy.

MASO would encompass the broader Zimbabwean e-government policy landscape, regulatory frameworks, socio-economic conditions, cultural norms, and the influence of external stakeholders (e.g. implementing partners and the community). While the TOE framework may be overally broad and generally making it difficult to apply in specific contexts, its strengths include its efficiency as well as clarification of both internal and external factors in a single paradigm (Prakash, 2025). The study's framework examines three interconnected dimensions of e-government adoption at MASO-firstly, technological readiness: availability and adequacy of ICT infrastructure, including hardware, software and network connectivity. Second, organisational capacity involving human resource competencies, leadership commitment and change management processes. The third is policy implementation on how national e-government strategies translate into operational realities at the institutional level.

To further enhance the TOE framework, integrating elements of UTAUT provides a more granular understanding of individual user acceptance and use of e-government systems within MASO. UTAUT identifies four key constructs that influence behavioural intention to use technology and subsequent usage behaviour. Performance expectancy is the degree to which an individual believes that using the system will help in attaining gains in job performance (e.g. MASO staff believing e-government systems will improve service delivery or efficiency). Effort expectancy is the degree of ease associated with using the system (e.g. how easy it is for MASO staff and beneficiaries to learn and use the e-government platforms). Social influence is the extent to which an individual perceives that others believe he or she should use the new system (e.g. peer influence, management support, or community acceptance of e-services). Facilitating conditions are the degree to which an individual believes that an organisational and technical infrastructure exists to support the use of the system (e.g. availability of training, technical support and necessary resources within MASO).

This combined model offers a holistic perspective, moving beyond a purely technological progression to consider the intricate interplay of technological, organisational, environmental and individual factors, which is crucial for developing countries where non-technological factors often play a more significant role in e-government success or failure (Gupta et al., 2008; Mustaf et al., 2020). Its contextual relevance allows for a tailored analysis of MASO's unique situation, with UTAUT further refining this by focusing on the end-user perspective, vital for understanding actual uptake and sustained use. By examining these multiple layers, the combined model can more effectively identify specific barriers e.g. lack of infrastructure, resistance to change, inadequate policies and enablers e.g. strong leadership, user training, supportive regulations to e-government uptake within MASO.

Ultimately, the comprehensive nature of this model can lead to more actionable recommendations for policy-makers and practitioners, guiding interventions that address not just technological gaps but also organisational and human factors (Altameem et al., 2006; Okong'o & Kyobe, 2018). Whilst Layne and Lee (2001) offer a starting point for understanding e-government evolution, a more robust and contextually relevant analysis of e-government uptake in the Zimbabwean public sector, particularly for an organisation like MASO, would benefit significantly from a combined TOE and UTAUT framework. This integrated model provides a richer understanding of the complex factors influencing adoption and can lead to more effective strategies for successful e-government implementation.

Research methodology

Research design

The mixed methods approach aimed to examine e-government adoption within MASO. The methodology draws on Yin's foundational work on case study research, which emphasises investigating contemporary phenomena within real-life contexts where boundaries between phenomenon and context are not clearly evident (Yin, 2018). The design was particularly appropriate for this investigation as it allowed for an in-depth exploration of the complex interplay between technology, organisational structures, and human factors that characterise e-government implementation in developing country settings. It also allowed for an integration of qualitative and quantitative data which would yield an additional insight beyond information provided by either research design on its own (Creswell & Creswell, 2018). Following recent applications of case study methodology in digital governance research, this study incorporated both retrospective analysis of existing adoption processes and real-time observation of current implementation efforts (Scholl et al., 2022).

The research adopted an interpretive paradigm that acknowledges the socially constructed nature of technology adoption in organisational contexts. This perspective aligned with contemporary information systems research that emphasises the importance of understanding how technology interacts with institutional and cultural factors in public sector settings (Walsham, 2017). The study's longitudinal dimension examines e-government adoption processes from 2019 to 2023, coinciding with Zimbabwe's National E-Government Strategy implementation period, allowing for analysis of both immediate challenges and longer term adaptation patterns.

Data collection approach

Data collection was conducted over three months and employed a multi-method strategy combining questionnaires, in-depth interviews and document analysis. Questionnaires were conducted on service beneficiaries whilst semi-structured interviews were conducted with key stakeholders including MASO management, frontline staff, following established protocols for qualitative research in technology adoption studies (Myers & Newman, 2007: Bryda & Costa, 2023). The interview guide was structured around four thematic areas: technological infrastructure assessment, skills and training needs, policy implementation challenges and service delivery impacts. Each interview session was conducted in participants' workplaces to enhance ecological validity.

Document analysis incorporated institutional records and policy documents using systematic qualitative content analysis methods. Key documents included MASO's strategic plan, its ICT implementation plans, service delivery reports and training manuals from 2019 to 2023, as well as Zimbabwe's National E-Government Strategy documents. This document review followed established frameworks for analysing organisational policy implementation. Structured observations were conducted at MASO service delivery points using a standardised protocol to document technology use patterns, workarounds and user interactions during actual service delivery situations.

Participant selection and sampling

The study employed simple random and purposive sampling to identify participants who could provide rich, information-laden insights about e-government adoption at MASO. The sampling strategies were designed to capture perspectives from three key stakeholder groups: strategic decision-makers responsible for technology adoption, operational staff who use the systems daily and service beneficiaries who interact with the implemented technologies. This stratified approach ensured representation across all organsational levels affected by e-government implementation. Participant selection followed Palinkas et al. (2025) framework for organisational case studies, identifying three key strata: strategic decision-makers (n=6) providing institutional perspectives, operational staff

(n=12) offering implementation insights, and service beneficiaries (n=6) representing user experiences, with sample sizes determined by the information power principle (Malterud et al, 2021) until thematic saturation was achieved, ensuring comprehensive representation across all organisational levels while enabling cross-strata comparison of e-government adoption challenges through role-specific protocols and deliberate inclusion of negative cases to strengthen analytical rigor.

Sample size determination followed the principle of information power, with recruitment continuing until theoretical saturation was achieved (Malterud et al., 2021). The final sample included 24 participants: 6 management staff, 12 operational staff and 6 service beneficiaries. This distribution allowed for comparison of perspectives across different organisational roles while maintaining depth of understanding within each stakeholder group. The sampling approaches were designed to capture both typical experiences and exceptional cases that might reveal important boundary conditions in the adoption process.

Data analysis framework

While the quantitative data was analysed using descriptive statistics, thematic analysis was conducted to analyse qualitative data following Braun and Clarke's reflexive approach to identifying, analysing, and reporting patterns within qualitative data (Braun & Clarke, 2023). Analysis proceeded through six phases: familiarisation with the data through repeated reading of transcripts and field notes; systematic coding of the entire dataset; theme development through collation of related codes; theme refinement through iterative review; defining and naming of final themes and production of the analytical narrative. Coding employed both inductive and deductive approaches using NVivo qualitative analysis software. The codebook development was informed by prior theoretical frameworks of technology adoption while the remaining were open to emergent themes from the data. Analytical rigor was enhanced through several verification strategies including peer debriefing sessions with independent researchers, member checking with selected participants and systematic negative case analysis to account for disconfirming evidence (Nowell et al., 2017). The final analytical framework integrated multiple levels of analysis from individual user experiences to organisational processes and broader policy implementation contexts.

Ethical considerations

The study adhered to rigorous ethical standards throughout the research process. Formal ethical approval was obtained from the relevant institutional review board prior to data collection. Informed consent procedures were carefully designed to ensure comprehension among participants with varying education levels, including the use of

simplified explanation sheets and verbal confirmation of understanding (Mazanderami et al., 2024). All participants were provided with clear information about their rights, including voluntary participation, confidentiality protections and the ability to withdraw at any time. Data security measures followed best practices for qualitative research, including pseudonymisation of transcripts, secure password-protected storage of digital files, and controlled access to sensitive documents. Research quality was assessed using established criteria for qualitative excellence including credibility, transferability, dependability and confirmability. Particular attention was paid to researcher positionality and reflexivity, with the researchers maintaining detailed journals to document potential biases and their influence on the research process.

Results and discussion

Technological context: Infrastructure, ICT readiness and technological evolution

The technological context in the uptake of e-government systems at MASO reveals a complex interplay between infrastructural availability and usability, staff and community digital literacy and the rapid evolution of technological platforms. The data collected from respondents across different operational roles-management, operational staff and service beneficiaries, point to a significant divergence between the level of public ICT usage and the organisation's internal readiness to provide effective e-government services. Community-level technology adoption appears high, with 96% of respondents owning mobile phones and frequently utilising platforms such as WhatsApp, Facebook and Ecocash, which suggests that the user-end readiness for mobile-driven e-government is well established. These findings mirror those in broader sub-Saharan Africa, where mobile technology has been a powerful enabler for e-services due to its low barrier to entry (Mutula & Mostert, 2010).

However, within MASO's organisational context, the internal technological infrastructure lags behind. The institutional website, a fundamental access point for digital engagement, was found to be non-existent. Similarly, platforms like employee emails and the local area network (LAN) infrastructure received low effectiveness ratings. These platforms, critical to internal communication and service coordination, were underperforming or entirely unavailable, undermining the potential integration of systems that support transactional or vertically integrated e-government processes as proposed in the Layne and Lee (2001) model. This discrepancy highlights a critical technological barrier, while the external environment (citizen users) shows readiness and demand for digital interaction; the service provider's backend systems lack reliability and sustainability.

Further complicating the technological landscape is the challenge of swiftly changing technology. For example, 70% percent of participants regarded this as a "highly

problematic" issue. The pace of technological innovation, though generally positive, appears to overwhelm MASO's capacity to maintain, adapt, or upgrade its systems in a timely manner. This aligns with the findings of Sulieman et al. (2022) who identified technological obsolescence and poor adaptation strategies as leading causes of failure in e-government projects, particularly in resource-constrained environments. The MASO case clearly illustrates that while the technological context is crucial, it is not merely the availability of tools but also the ability to adapt, maintain and evolve with those tools that determine success. The lack of consistent funding streams and skilled personnel within MASO exacerbates this issue, making the development of a sustainable IT refresh cycle or upgrade pathway nearly impossible. This suggests that technological readiness must be evaluated not only in terms of existing infrastructure but also through the lens of operational reliability, institutional flexibility and forward-planning capacity.

Organisational context: Internal capacity, leadership, and institutional culture

The organisational context within MASO significantly influences the pace and depth of e-government adoption, as internal dynamics such as digital literacy, leadership commitment, change management processes and organisational culture present multifaceted challenges. One of the most prominent issues that emerged from the data was the evident lack of strategic ICT planning across all organisational levels. An overwhelming 89% of respondents stated they were unaware of any e-service strategic plan within the institution. Among the 11% who confirmed the existence of the plan, all were senior management personnel, suggesting a severe communication and implementation gap within the organisation. This top-heavy awareness structure reflects a deficiency in inclusive planning and cross-departmental engagement, thereby weakening any institutional momentum toward digital transformation.

The organisation's culture was also identified as a major barrier to effective ICT integration. A substantial portion of respondents indicated that MASO's internal environment does not support innovation or embrace technological change. Fifty-two percent described the culture as "a bit problematic" and 56% viewed resistance to change as "highly problematic." These findings resonate with earlier studies by Alshehri and Drew (2010), who found that organisational resistance, is one of the most persistent obstacles to e-government implementation, especially when institutions are rooted in rigid, paper-based administrative systems. This resistance is not merely attitudinal but stems from inadequate change management structures and a lack of consistent messaging from leadership regarding the value and necessity of e-government tools.

Another organisational constraint relates to ICT competencies within the workforce. More than 50% of the participants reported low confidence in using digital systems and many frontline workers lacked formal training in basic ICT tools. This aligns with the

"facilitating conditions" component of the UTAUT, which emphasises the role of institutional support structures such as training, technical assistance and performance incentives in shaping technology uptake. Without ongoing training and accessible technical support, even the best-designed e-government platforms are likely to fail. Moreover, the absence of a dedicated IT planning committee or department at MASO means that ICT issues are often relegated to general management, whose priorities may lie elsewhere. This lack of role clarity leads to fragmented implementation efforts and limited institutional accountability.

Importantly, MASO's flat structure and heavy dependence on donor funding also complicate long-term ICT planning. The ad hoc nature of project financing makes it difficult to invest in large-scale digital infrastructure, while donor funds are typically earmarked for service delivery rather than capacity building or technology upgrades. The findings echo Bwalya's (2009) analysis in Zambia, where public sector organisations lacked the financial and institutional capacity to manage e-government projects beyond initial pilot phases. To overcome these organisational limitations, MASO would need to embed ICT goals into its strategic plan, decentralise ICT-related decision-making, and foster a culture of innovation through regular training, participatory leadership and strong interdepartmental coordination.

Environmental context: Financial constraints, policy disconnects and external pressures

The broader environmental context in which MASO operates presents a host of external challenges that compound internal weaknesses. Chief among these is the issue of inadequate funding, a problem echoed by both management and staff. As a non-profit public sector organisation reliant on donor support, MASO has limited flexibility to allocate funds toward technological development. This financial fragility severely constrains its ability to procure modern ICT tools, maintain digital platforms and retain qualified personnel. The lack of financial autonomy makes long-term planning nearly impossible and limits the scalability of successful pilot projects. The financial structure of many Zimbabwean public sector organisations, especially those operating in the healthcare and NGO sectors, often inhibits investment in transformative technologies.

Another key environmental constraint is the disconnect between national e-government policies and local level implementation. Although Zimbabwe's National ICT Policy 2022-2027 outlines ambitious goals for digitising public service delivery, most of MASO's employees were unaware of this policy framework. This reflects a breakdown in policy dissemination and localisation. National frameworks often fail to cascade effectively to grassroots institutions, either due to poor communication, lack of enforcement mechanisms, or institutional overload at the local level. This finding aligns

with the TOE framework's emphasis on the importance of aligning external regulatory environments with internal organisational readiness for successful technology adoption (Tornatzky et al., 1990). The absence of such alignment leaves institutions like MASO stranded between top-down mandates and bottom-up realities, unable to implement directives that are disconnected from their operational contexts.

Compounding this issue is the influence of socio-political pressures and cultural attitudes. MASO operates in a context marked by political volatility, unstable internet infrastructure, and intermittent electricity supply, all of which undermine its ability to maintain digital systems. Furthermore, stakeholders expressed concerns about data privacy and cybersecurity, particularly when handling sensitive health information related to HIV/AIDS services. These concerns mirror the findings of Agbozo et al. (2018), who emphasised the importance of trust and data governance in e-government adoption, particularly in public health institutions. In Zimbabwe, where regulatory frameworks on data protection are still evolving, institutions are left to navigate these complex challenges largely on their own.

The cumulative effect of these environmental factors is a hostile ecosystem for e-government uptake. MASO's ability to innovate is hindered not only by internal organisational constraints but also by an unsupportive external environment. Addressing these issues will require multi-level interventions that include stable public financing mechanisms, clearer policy guidance and enhanced cooperation between government agencies, development partners and civil society. Only through such integrative efforts can institutions like MASO move from basic digital survival to active digital transformation.

Conclusion and recommendations

The investigation into the uptake of e-government services at MASO provides critical insights into the complex interplay of technological, organisational and environmental factors shaping digital transformation in Zimbabwe's public sector. Despite clear evidence of digital readiness at the user level especially through social media platforms such as Facebook, high rates of mobile phone usage and informal digital communication platforms like WhatsApp, the institutional ability to deliver formalised, reliable and strategic e-government services remains significantly underdeveloped. This contradiction underscores a fundamental issue; technological availability alone does not equate to technological adoption or effective utilisation within public service institutions.

The results reveal a technologically fragmented organisation with limited internal digital infrastructure. The unavailability of MASO's website, poor reliability of email communication systems and the absence of a functional LAN/WAN setup significantly

undermine the potential for meaningful integration of e-government services. Compounding these issues is a widespread organisational deficit in strategic ICT planning and communication. The fact that a vast majority of MASO staff are unaware of any digital transformation plans points to deep structural and cultural shortcomings. These include limited technical training, lack of formalised digital governance mechanisms and resistance to change problems that are symptomatic of broader organisational inertia. These internal constraints are further exacerbated by external pressures such as unstable funding, inconsistent policy alignment and infrastructural challenges that typify many developing country contexts.

Notably, the absence of a dedicated ICT leadership structure has left the organisation without clear accountability for digital change. This vacuum, combined with top-down decision-making that excludes operational staff and beneficiaries, has created a culture of disengagement. The study confirms that unless digital initiatives are fully embedded within institutional cultures, supported by ongoing training, accessible infrastructure, and inclusive governance, e-government remains little more than a policy aspiration. The national e-government strategy, while comprehensive at a macro level, lacks the tools and mechanisms for effective implementation within mid-sized, service-oriented institutions such as MASO. As a result, digital transformation is limited in both scope and sustainability.

To move forward, MASO and similar public sector organisations must reimagine digital governance as an institution-wide effort rather than a technical initiative. E-government adoption should be framed not simply as a technological challenge, but as a multidimensional transformation that requires new capabilities, new behaviours and new institutional relationships.

In light of these findings, several strategic recommendations are necessary to facilitate meaningful and sustainable e-government implementation at MASO. First, the organisation must establish a dedicated ICT steering committee tasked with guiding, monitoring and continuously evaluating digital transformation efforts. This body should comprise both technical personnel and representatives from various departments to ensure that technology planning is aligned with service delivery needs. It must also liaise directly with external partners, including the parent Ministry and donors, to ensure alignment with national policy frameworks and resource mobilisation.

Second, there is an urgent need to develop a comprehensive and participatory ICT strategy, grounded in the TOE framework. This strategy should include specific goals for infrastructure improvement, digital capacity building, user awareness campaigns and integration of e-services into core organisational functions. The planning process must be

consultative, ensuring that frontline staff, service beneficiaries and middle managers have ownership over the implementation process.

Third, investing in human capital development must be prioritised. Regular ICT training sessions should be institutionalised and tailored to different levels of staff proficiency. Further, embedding digital competencies into performance management systems can incentivise engagement and reinforce accountability. Training alone, however, is insufficient without the provision of reliable infrastructure. MASO must prioritise the reactivation and consistent maintenance of its website, internal networks, and online communication tools. Leveraging mobile technology, which already enjoys high usage among stakeholders, could serve as a bridge while heavier infrastructure investments are pursued.

Finally, the organisation should engage in trust building initiatives that enhance user confidence in e-government systems. This includes data protection policies, public dashboards for transparency, and feedback mechanisms that allow users to report problems or provide input into digital service improvements. Collaborations with academic institutions and private sector ICT firms could further strengthen the technical foundations of MASO's digital systems while ensuring that implementation is evidence based and innovative. In conclusion, e-government adoption at MASO is not beyond reach, but it demands more than adhoc interventions. It requires a deliberate, inclusive, and well-resourced strategy that recognises the multifaceted nature of digital transformation. By embracing a comprehensive and contextualised approach, MASO can serve as a beneficiary of the national e-government policy and as a model for digital innovation within Zimbabwe.

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