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Factors Affecting Trust in Government's Digital Services in South Africa

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Abstract

Governments have recognized the importance of transforming public services into digital services to deliver integrated, standardized, and high-quality services to the public, hence the heavy investment in Information and Communication Technology (ICT) projects to deliver innovative digital services and to open new channels for citizen engagement. As access to government's digital services has become a human right in the digital age, government must ensure that quality and equitable digital services are accessible to all citizens. Despite the perceived benefits and opportunities offered by the digital services, uptake in South Africa remains relatively low, posing a challenge for the government. Trust is the precondition for the intention to use government's digital services. This study, therefore, aimed to investigate and analyze factors that affect trust in government's digital services in South Africa. This study adopted a qualitative research approach to conduct a systematic literature review. Fifteen articles, from credible online databases, were included in this study. The selected articles were published between 2019 and 2023 and were focused on South African Government. Findings show that government's digital services improve accountability, transparency, efficiency and responsive of government, thereby increasing trust in government. However, challenges such as lack of political and management support, lack of ICT Infrastructure, poor privacy and security, lack of user participation in government innovation, affect trust in government digital services in South Africa.This study intended to make a practical contribution by providing government with research-based findings that may be used as an input into the strategies and policies developed to increase trust in government's digital services, which may increase utilisation of digital services to build a digital society and to close the digital divide. This study also aimed to make a theoretical contribution towards the ongoing discourse on digital transformation of the public services to improve government efficiency and effectiveness.

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1   Introduction

The current public administration reform involves transformation of public services into digital services. The digital services are defined as ICT supported public services that are delivered over the internet and accessed through websites, portals and mobile applications (Mergel, 2019). Hence, Governments are increasingly investing in Information and Communication (ICT) Infrastructure projects to deploy quality and equitable digital services to the public (Nurdin, 2021). Beneficiaries of digital services are citizens, businesses, government employees and other government entities. The perceived benefits of digital services include improved effectiveness, efficiency, accountability, transparency and responsiveness (Alkraiji & Ameen, 2022). The critical success factors for the digital services include development of digital policies and strategies that regulate usage of technology in government, creation of safe and secure communication systems and data storage facilities, skilling and upskilling of government employees on ICT's (Palma et al., 2023).

Despite the potential benefits of digital services, uptake in South Africa remains low and incoherent due to material and structural conditions. Such conditions include inadequate ICT infrastructure, lack of technical skills, security concerns, illiteracy, shrinking government budget, cultural issues, and lack of an integration of digital services across government departments (Mayedwa, 2023). The decline of trust in government contributes to the low uptake of government's digital services (Kim, 2016; Pérez-Morote et al., 2020). Trust is one of the preconditions for adoption and utilization of digital services (Barbosa & Mota, 2022). When citizens have a positive experience with government's digital services, their trust in government services increase (Kumar et al., 2021).

Studies have been conducted on e-Government, digital government, smart government, online government, however, these studies have mainly examined challenges with adoption of government's digital services and focused on developed and other developing countries.

This study therefore aimed to synthesis the relevant literature and critically review it to provide insights into factors that affect trust in government's digital services in South Africa. The study aims to answer the question: What are the factors that affect trust in government's digital services in South Africa?

2   Background of the study

2.1   Conceptualization of trust

Trust is confidence that one's vulnerabilities will not be exploited under any condition, instead, the expected results will be delivered (Alkraiji & Ameen, 2022). The concept of trust has been evolving with the evolution of the society, from social trust in the agricultural economy, institutional trust in the industrial economy and to technology trust in the digital economy (Guo, 2022). Despite the evolution of trust, scholars have not formulated a universally-accepted definition of trust due to its complexity and ambiguity (Mansoor, 2021). Hence, literature provides different definitions of trust presented in Table 1.

Type of Trust	Definition	Source
Social Trust	Social trust is a cognitive behavior that is shaped by the local cultures, values, and traditions wherein members of a particular community exhibit similar trust attributes.	Wan et al. (2022)
Institutional Trust	Institutional trust is the perception that interactions, through physical and digital platforms, will be conducted in the best interest of the trusting party, even in the face of uncertainty and risk.	Laifa et al. (2015)

Technological Trust	Technological trust is the perception that technology will deliver the required service securely, easily, and reliably, with minimal effort from the user.	Laifa et al. (2015)

Table 1: Types of Trust

2.2   Trust in Government

The subject of trust in government has been a continuous concern for the public administration scholars for decades, evidenced by the plethora of literature on the subject (Kim, 2016). This is due to the decline of public trust in government, attributed to high levels of corruption, poor service delivery, lack of accountability, transparency and poor handling of private information (Kim, 2016; Lee & Schachter, 2019; Pérez-Morote et al., 2020). Trust in government is the expectation that government officials and politicians will act responsibly and ethically as they allocate and manage public resources to meet citizens' needs (Beshi & Kaur, 2020). The World Bank defines trust as citizens' confidence that government will implement laws and policies to protect, serve and empower citizens, and to honor government's duty toward citizens (Kumar et al., 2021).Individual's experience with government, be it physical or digital, shapes the perception of trust in government (Kumar et al., 2021).

Researchers are divided on the consequences of lack of trust in government. Some researchers argue that lack of trust in government is a necessary condition for democracy as it is an indication of active and engaged citizenry (Festenstein, 2020). Others argue that lack of trust in government leads to citizens' disengagement and non-participation in public affairs. According to (Huang et al., 2020) lack of trust in government indicates a failed democracy and renders such government illegitimate and unworthy of public support.

Trust in government can be measured by the level of confidence citizens have in government to serve their interest and to meet their needs (Jameel et al., 2019). Ordinary citizens are mainly concerned with basic public services such as the social protection systems hence government must ensure quality and quantity of these services to strengthen trust in government (Kumar et al., 2021).

When trust fails, citizens become disengaged and uninterested in government affairs, leading to a disjuncture between citizens' needs and government services (Kumar et al., 2021). Lawlessness, protests, wars then become the order of the day (Kumar et al., 2021). Trust in government cannot exist where good governance principles are not upheld. Good governance principles include accountability, transparency, inclusivity, equitability, responsiveness, rule of law, human rights and participatory (Jameel et al., 2019; Seyedsayamdost & Vanderwal, 2020). Poor implementation of good governance principles erodes government capacity to deliver quality public services (Kamal & Batool, 2021). Trust in government is essential in building a functional democratic state and is critical in creating a stable, harmonious and civilised communities (Oksanen et al., 2020)

3   Conceptualization of Government's digital services

Various definitions of government's digital services have been formulated by scholars in the different domains, however, it is the application of internet services that distinguishes between traditional and digital public services, rendering digital services more transparent, effective and efficient (Mayedwa, 2023). Although the concept of government's digital services has been studied extensively, it still suffers from conceptual inconsistency as none of the formulated definitions has been universally accepted(Alzahrani et al., 2017; Kvasnicova et al., 2016). Table 2 shows definitions of government's digital services used by various scholars.

Source	Definition
Kvasnicova et al. (2016)	Public e-services are web-based services that re delivered by the government to the stakeholder (citizens, employees, businesses, and other government entities) over the internet.
(Othman et al., 2020)	E-Government is the ICT-enabled mechanism to transform conventional government services into online government services, which are delivered through websites, web-portal and mobile devices.
(Aftab & Myeong, 2022)	Digital government is the modernization of public services to improve long-term utilization of government's online services by its stakeholders
(Hartanti et al., 2021)	Smart government services are public services rendered by government to citizens through digital technologies

Table 2: Definitions of Government's Digital Services

In this study, government's digital services are defined as ICT enabled public services that are delivered by government to citizens, employees, businesses and other government entities to improve service delivery efficiency and effectiveness, and to open new channels of engagement between government and citizens (Alkraiji & Ameen, 2022). The definition recognises the interplay between people, processes and technology as processes are optimised and modernised using technology to improve public services (Mayedwa, 2023). When government's digital services are designed and implemented properly, they have the potential to transform the whole public administration into a single integrated access point for all government services (Mayedwa, 2023).

4   Trust in government's digital services

Trust in government's digital services serves as the foundation for the digital society, thus, the provision of digital services has become a strategic objective for governments as the developmental and functional states are evaluate by the quality and quantity of government services available online (Guo, 2022; Mesa, 2023). The digital services are considered as effective mechanism to enable government to respond swiftly to dynamic and complex demands of the digital society, thereby increasing trust in government (Barbosa & Mota, 2022). As digital services are impersonal in nature, it is crucial for government to ensure that digital services are reliable and trustworthy (Belanche et al., 2014). Trust in government and trust in technology are antecedents of adoption and continuous usage of digital services (Abu-Shanab, 2014; Alzahrani et al., 2017).

Government digital services are not designed to maximize profits, but they are designed to empower citizens to participate actively in the digital economy and to close the digital divide (Barns, 2019). Despite the benefits of the government's digital services, there are criticism that the private platforms, on which government's digital services are built and operated, are fundamentally unaccountable and isolated from local cultures and values. They are accused of presenting themselves "too big to control, too new to regulate, and too innovative to stifle" (Graham, 2020). Digital services, such as social media, have also been criticized for facilitating the widespread of fake news, misinformation, cyber bullying and cyber-attacks, making some members of the public sceptical to trust the cyber world (Van Dijck, 2020). As a result, most people, especially in rural communities, still prefer the traditional ways of consuming government services (Aftab & Myeong, 2022).

However, since it clear that the future is digital, it is crucial for the members of the public to be empowered with digital skills to participate confidently in, and benefit from, the digital economy as digital illiteracy hinders the whole human civilization (Dufva & Dufva, 2019; Ejdys, 2018)

5   Gaps in literature

Although government's digital services have received a significant research attention in the past few years due to digital transformation, evidenced by the plethora of research on the subject, up to 80% of government's digital initiatives fail to meet the expected goal, particularly in developing countries (Kim, 2016; Pérez-Morote et al., 2020). The existing research mainly focusses on challenges related to implementation and adoption of digital services, without zooming into trust in government's digital services, which may be the main contributor to the low adoption and utilization of government's digital services in the developing countries. This study, therefore, aimed to systematical identify the relevant literature and critically analyze it to provide insights into the factors that affect trust in government's digital services in South Africa, over the past five years. Table 1 shows the previous studies conducted on government's digital services in various countries.

Title	Source	Case Country
The effects of information literacy on trust in government websites: Evidence from an online experiment.	(Janssen et al., 2021)	Korea
Factors Predicting the Adoption of E-Government Services in Tele centers in Rural Areas: The Mediating Role of Trust	(Kamarudin et al., 2021)	Malaysia
Towards a comprehensive understanding of digital government success: Integrating implementation and adoption factors	(Gil-Garcia & Flores-Zúñiga, 2020)	Mexico
The Benefits of Digital Transformation addressing the Hindrances and Challenges of e-Government Services in South Africa: A Scoping Review	(Maremi et al., 2022)	South Africa
Trustworthiness of digital government services: deriving a comprehensive theory through interpretive structural modelling	(Janssen et al., 2021)	Netherlands
Citizens' Trust Measurement in Smart Government Services	(Hartanti et al., 2021)	Indonesia

Table 3: Previous studies on government's digital services

6   Methodology

6.1   Research Philosophy

The philosophical stance provides the starting point for the research process (Muhaise et al., 2020). The research philosophy indicates the researcher's assumptions regarding the development of knowledge and nature of that knowledge (Bleiker et al., 2019). Research philosophy is made up of research ontology and epistemology (Muhaise et al., 2020). Ontology is concerned with the nature of reality and the essence of its existence; epistemology is concerned with the nature of knowledge and how that knowledge is acquired (Al-Ababneh, 2020). This study adopted a constructive ontology and interpretive epistemology to examine and analyse factors that affect trust in government's digital services in South Africa.

Constructive ontology was suitable for this study as it posits that there is no absolute reality, instead, reality is a social construct which is perceived by people differently (Kamal, 2019).Interpretive epistemology was chosen because it enabled multiple realities to be uncovered about factors that affect trust in government's digital services in South Africa (Al-Ababneh, 2020).

6.2 Systematic Literature Review (SLR) Protocol

To answer the research question, a SLR was conducted following the guidelines by (Okoli & Schabram, 2015) on conducting a qualitative SLR for Information Systems research. The relevant articles for the literature review were searched from three online databases: Google Scholar, IEEE Xplore, and Scopus. The three online databases were chosen based on their credibility for research of all disciplines and to minimize retrieval bias. To ensure that the review was grounded on the recent and relevant literature, only articles that were published from 2019 to 2023 we considered. The search strings used to select relevant articles were "Government digital services in South Africa", "e-government in South Africa", "online government services in South Africa", "public e-services in South Africa". Most of the articles extracted originated from the term "e-Government" as this is the popular term used in most government articles. The adapted PRISMA flowchart, in Figure 1, presents the process followed to screen articles for inclusion and exclusion in this study.
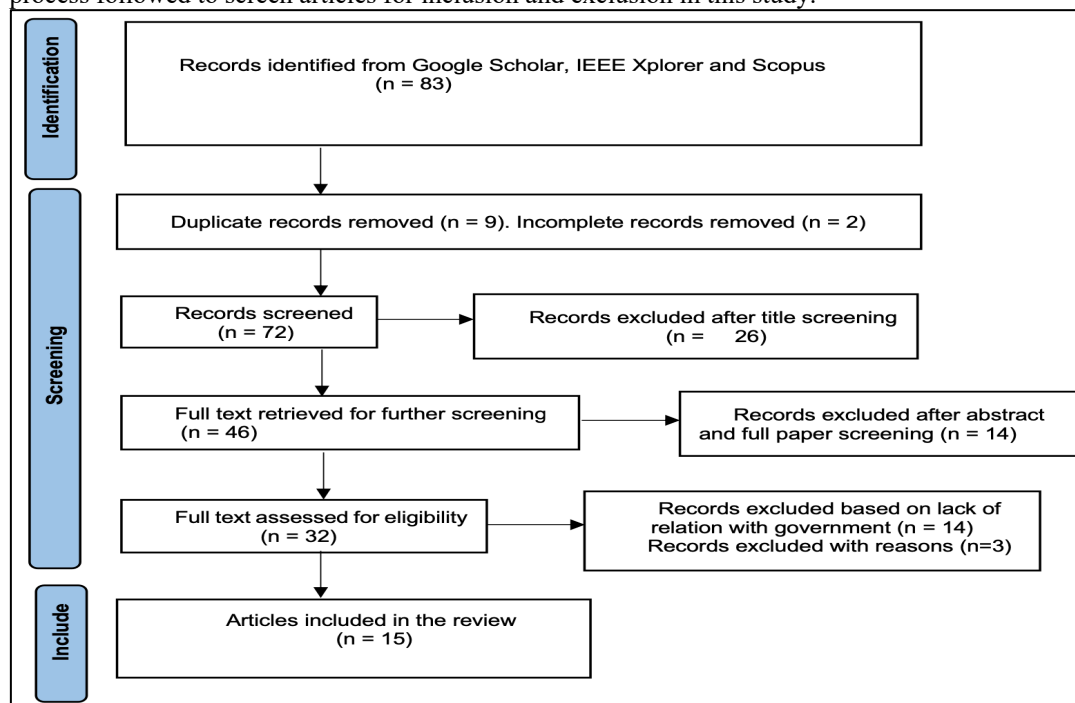

Figure 1: PRISMA.

7 Data Analysis

This study adopted thematic data analysis as the guideline for data interpretation, findings and conclusion (Mayer, 2015). Thematic data analysis is widely used in qualitative research to produce reliable and insightful findings (Nowell et al., 2017). The 15 articles that were selected were analysed using NVivo to determine factors that affect trust in government's digital services, from 2019 to 2023. A six-steps approach by (Nowell et al., 2017) was followed, starting with researchers familiarizing themselves with data, generating codes, searching for, and making sense of themes, reviewing the themes, naming the themes, and lastly, writing up the report. The thematic data analysis process yielded ten persistent factors that affect trust in government's digital services, depicted in Figure 2.

8 Results and discussion

Figure 2 shows the distribution of the factors that affect trust in government's digital services in South Africa. Due to page restriction of EasyChair only the four factors will be discussed.
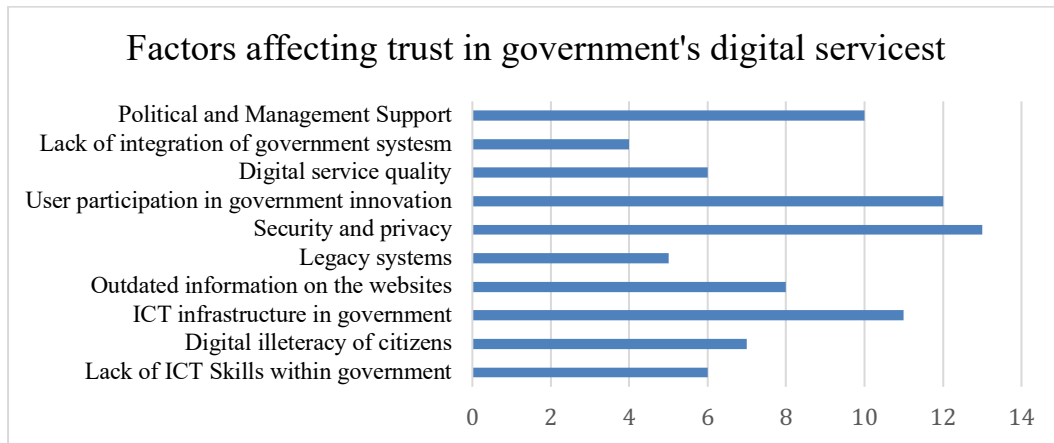

Figure 2 Distribution of factors affecting trust in government's digital services

8.1 Security and privacy

Digital services offer government potential tools to drive government operational efficiency and effectiveness which may help build trust between government and citizens (Adendorff & Smuts, 2019). Government, as the biggest economy, is positioned better to set the agenda for innovative solutions to propel the state towards sustainable development (Shibambu, 2022). Over the years South African government has made commendable strides to provide digital services to the citizens. Such services include e-filling to submit tax returns online, e-Natis to book for driving permits online, TeleHealth to consult healthcare professionals online, online schools admissions to apply for school admissions online, e-Justice to provide access to justice online and on time, to name but a few digital services (Blom & Uwizeyimana, 2020).

Despite the aforementioned successes, multiple factors exist that affect trust in government's digital services in South Africa; data privacy and cyber security being one of the major factors (Terrance, 2023). The data privacy and security concerns are exacerbated by the fact that South African government is at its infancy stages of integrating innovative ICT solutions such as cloud computing to migrate data and applications to the cloud computing storage (Shibambu, 2022). Cloud computing facilitates the centralization of data centers, making information and applications easily accessible anytime and anywhere (Mkhatshwa & Mawela, 2023).

Since 2019 data privacy and security concerns have increased in the public sector due to the security breaches that have occurred in some government departments where unauthorised access took place (Terrance, 2023). The data security beaches occurred despite application of security standards and frameworks such as Minimum Information Security Standard (MISS) to regulate and protect ICT systems and application (Blom & Uwizeyimana, 2020). The security breaches therefore exacerbate lack of trust in government's digital services, resulting in citizens becoming skeptical to share private data over the internet (Hartanti et al., 2021). Government should therefore focus its investment in building robust cyber security mechanism and upskilling government employees on cyber-security detection and prevention to curb cyber-attacks and to build trust in government's digital services. Building trust in government's digital services may increase the uptake of digital services and facilitates the building of

the digital society that thrives in the digital economy thereby justifying the massive investment in digital services (Hartanti et al., 2021).

8.2   User participation in government innovation

User participation is the deliberate involvement of citizens, particularly the marginalized, in government's decision-making and policy-development processes through stakeholder engagement and citizens' participation (Bouzguenda et al., 2019). Citizen engagement is an effective way to build trust between government and citizens (Kumagai & Iorio, 2020). However, the traditional citizen participation methods, such as community engagements, public hearings, have been criticized for being ineffective and inefficient as they seldom attract the broader spectrum of the population and encourage participation (Bouzguenda et al., 2019).

In South Africa local governments are characterized by destructive service delivery protests, driven partly by lack of effective citizen engagement mechanisms, resulting in lack of trust in government (Osah & Pade-Khene, 2020). Effective service delivery hinges on properly coordinated communication flow between government and citizens. Communication digital services have the potential to mediate between citizens and government in the development and delivery of public services (Osah & Pade-Khene, 2020).The National development plan(NDP) emphasizes the potential of science, technology and innovation in driving inclusive innovation for socio-economic development (Hart et al., 2020).

Some spheres of governments in South Africa have made notable strides in rolling-out digital services aimed at improving citizen participation. Such strides include leveraging the ICT infrastructure to support SMS, emails, voice calls, e-petition and social media to enable real-time and cost-effective communication channels with government. The adoption of participatory governance practices break the boundaries between government and citizens, and create a shared space for engagement and collaboration (Bouzguenda et al., 2019). However, government still needs to do more to ensure that the voices of all social groups, regardless of their background, are taken into consideration when building government digital services, if the objectives of inclusive government and building trust in digital services are to be achieved (Nkomo & Moyane, 2021).

8.3   Lack of ICT Infrastructure

SA Connect is South African Broadband policy aimed at connecting the government facilities such as schools, clinics, libraries, Thusong centres to provide equitable and affordable access broadband to all citizens in order bridge the digital divide. The provision of Broadband has the potential to boost the economic development by attracting foreign investors and building a thriving small-medium enterprises environment (Seadira, 2019). However, lack of adequate ICT infrastructure, more especially in rural communities, hamper the delivery of digital services and access thereof (Nokele & Mukonza, 2021). The digital exclusion then perpetuates the scourge of poverty and unemployment as citizens may miss out on the opportunities to participate in the digital economy (Seadira, 2019).

Government offices that operate in rural settings are highly affected by poor ICT infrastructure due to budget allocations and service delivery priorities. As such, rural government offices are marked by slow internet connectivity, outdated information on the web sites, outdated computer hardware and software, ineffective communication tools, slow email transmission, offline government services. These challenges frustrate citizens and further perpetuates the decline of trust in government's digital services (Nokele & Mukonza, 2021). Consequently, some citizens feel that the government digital services brings more problems than solutions (Mesa, 2023). To overcome these challenges, South African government should make a concerted effort to investigate and understand the connectivity challenges in rural government offices and communities, without imposing their perceptions, and therefore develop effective rural connectivity policies, in collaboration with citizens that are directly affected by the connectivity issues. This may enhance the image of government, unlock rural economy, and enhance

trust in government's digital services (Seadira, 2019). Whilst at it, government should take into account quality, quantity and affordability of internet access in the rural communities, if the objective of closing the digital divide is to be achieved (Correa et al., 2020).

8.4 Political and Management Support

Digital services are a complex phenomenon consisting of political, institutional, technological and social dimensions (Nkomo & Moyane, 2021). Typically, in a government setting, any digital initiative is decided at the national government, and then filtered down to provincial and local governments (Osah & Pade-Khene, 2020). This top-down approach has been found to be problematic as it imposes the worldviews of the political and government officials on citizens, resulting to failure of these services to address and solve the problems of the citizens (Seadira, 2019). Poor access to government's digital services is caused by the lack of political will and neglect of marginalized citizens (Seadira, 2019).

Management support is key to the successful implementation and maintenance of quality digital services. Managers, as decision-makers, need to have sufficient understanding of the benefits and opportunities provided by digital services to improve service delivery (Nokele & Mukonza, 2021). Digital services such as content management systems, cloud computing and social media are strategic administrative services that encourage real-time data sharing and access to government services (Nokele & Mukonza, 2021). Digital services fail due to lack of management support to priorities the skilling and training of the workforce on digital skills (Adendorff & Smuts, 2019). This failure therefore creates a workforce that is incapable of using technology to drive productivity and efficiency. When the digital services receive adequate support from political and government leaders they improve communication, drive efficiency and provide public services that are always available thereby increasing user satisfaction and trust in government digital services (Guo, 2022).

9 Conclusion, Implication, Limitations, and future research

A systematic literature review was conducted to examine and analyze factors that affect trust in government's digital services in South Africa. Keys findings of the research suggested that Political will and management support are critical for digital inclusion of the marginalized citizens, if the objective of building progressive digital societies and closing the digital divide is to be achieved. Government must embed citizen engagement and inclusive participatory processes to ensure that the digital services meet the needs of the citizens and improve citizen experience with government. Data privacy and security are key to building trustworthy government's digital services, without which citizens would be reluctant to share their private data over the internet. Lack of ICT infrastructure, particularly in rural areas, is a key factor that affect trust in government's digital services. When citizens cannot connect to the stable internet and engage or transact seamlessly with government online, their trust in government's digital services decline. The digital services should be developed in collaboration with citizens, as partners, to ensure that digital services meet the needs and expectation of the citizens thereby increasing trust between government and citizens.

This research intended to make a practical contribution by providing government with research-based findings that may be used as an input into the policies and processes intended to increase trust in government's digital services, which may increase utilisation of the digital services in South Africa. This research also intended to make a theoretical contribution to the ongoing discourse of digital transformation of the public services aimed at closing the digital divide and building the digital society that thrives in the digital economy.This study is not without limitations which suggest future research. First, the researchers relied on secondary data collected in previous studies and did not collect primary data themselves. Therefore quality, reliability, and ethicality of prior studies were assumed. Second, this study focused on South African government, future studies may consider a comparative study

across the African continent to gain a holistic view of factors that affect trust in digital services in public sector in the African continent. Finally, future studies may focus other public sector organizations such as state-owned enterprises and institutions of higher learning to increase reliability and generalizability of findings.

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