

A systematic review of the extant literature on the Tanzanian e-government services for economic development

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Abstract

This paper investigates the existing Tanzanian e-government services for economic development through a systematic review of the literature. The main objective is to examine researchers' articles on e-government services towards achieving the Tanzanian economic growth as well as the current issues and trends on e-government globally. Specifically, this study aims to answer three research questions on: what are the functional e-government services in Tanzania? What is the level of Tanzanian e-government service performance? And what are the factors influencing Tanzanian e-government service performance for economic development? A systematic literature search was conducted on four aggregate data sources, which included Google Scholar, ResearchGate, CORE, and Refseek. A combination of search key terms was employed to obtain the data sources from 2015 to 2022. One hundred and five articles were found by the combined search and screened, resulting to eighteen articles that were recommended for the study. Content and Microsoft Excel computer application were used to analyse the screened data sources. The findings reveal that, a number of functional services is offered and considered potential for revenue collection and contribute to the nation's economic development. Nevertheless, Tanzania has improved and dynamically advanced to the transaction level of e-government implementation where the majority of the citizens interact for services and information. However, factors related to the activeness of the platforms, accessibility, usability, infrastructure, security issues, privacy, and technical support services among others, were identified to influence the performance of Tanzanian e-government services and thus call attention to the government in addressing these issues.

Keywords

e-government, information technology, economic development, e-services, systematic review, Tanzania

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Introduction

The universal development of Information and Communication Technologies (ICT) has contributed to improved efficiency and accessibility of the government's service provision (Siahaan, 2017; Wahid, 2018). This has influenced and promoted effective strategies in pursuing good governance through electronic delivery of public information and services and thus transformed to e-government. The e-government platform has facilitated access to public information and services and interaction between the service provider and

the public, thereby minimising time lags and distance barriers (Okeleke, 2019). Developed countries have realised this endeavor and dynamically transformed to a sound e-government public service (Okeleke, 2019; Wahid, 2018). However, in developing countries the e-government initiatives vary from one region to

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another subject to various reasons which among others include; economic status, infrastructure and human capital (African Union Development Agency (AUDA), 2022). For instance, the United Nation's e-government survey report in 2020 indicated that the African region had a promising index of 0.45 but only few of the African countries had a high index of e-government initiatives. These countries are; Ghana, Mauritius, South Africa and Tunisia (AUDA, 2022).

Tanzania is among the developing countries that has intensified efforts to provide e-government services for poverty eradication, good governance, social and economic development. This is further buttressed by the World Bank report on effective use of ICT in public service delivery, ranking Tanzania as the 26th globally, second in Africa, and the first in the East African region (United Nations, 2022). The government of the United Republic of Tanzania has recognised the significance of ICT on e-government services and its associated benefits to the economic sector (Wahid, 2018). Thus, the efforts on e-government commenced in 2010 through the establishment of an e-Government Agency (e-GA) which coordinated, administered and promoted e-government initiatives (European Union, 2021; URT, 2021; Wahid, 2018). However, despite the efforts to this endeavor, issues with respect to performance and economic development have been rarely researched. In lieu of this, the paper in hand systematically reviewed the literature on functional e-government services, their performance, and the factors hindering the performance of e-government services in Tanzania from 2015 to February 2022.

The principal results from this study narrate the functional and active e-government services, the levels of performance of these services, and the aspects deterring the performance of the Tanzania e-government services. The analysed information is crucial for the e-government agency, policy makers and the National Information and Communication Technology decision makers for the proliferation of the e-government services for sustainable economic development. This paper therefore answered the following research questions:

- (i) What is the functional e-government services in Tanzania?
- (ii) What is the level of Tanzanian e-government service performance on economic development?
- (iii) What are the factors hindering Tanzanian e-government service performance for economic development?

The study is organised based on the literature review, methodology, and the analysis processes to address the research questions. It has also presented the results of the analysis, discussion, conclusion, and recommendations. The limitations of the systematic literature review visualised and recommendations for further investigation provided.

Literature review

Governments universally are increasingly deploying technology to sophisticate their public management systems and their external relationships with citizens, businesses, and other organisations (Hasan et al., 2024). Information technology has tremendously changed human life and the way the government provides services to the public. It has potentially made communication, business management, administration, and human interactions more possible through sophisticated and simplified transactions (Aleisa, 2024). The universe is currently perceiving various government paradigm shifts to e-administration, e-business, e-commerce, e-services, e-democracy, e-diplomacy, and ultimately e-government services (Doran et al., 2023). The concept of e-government emerged in the United States of America (USA) driven by the 1998 Government Paperwork Elimination Act, and by December 17, 1999, a memorandum on e-government came out that ordered the top 500 forms used by citizens to be placed online by December 2000 (Sapraz, 2023). E-government services, which incorporate a range of digital platforms and interactive online applications, have emerged as a transformative force, streamlining administrative functions, encouraging transparency, and providing citizens with convenient access to government information and services (Dhaoui, 2021; Hasan et al., 2024). Countries with remarkable e-government initiatives are Singapore, Finland, the USA, Korea, the UK, and Japan. Efforts to develop e-government in Africa have been in place for a decade (Sapraz, 2023).

The advanced development in technology and the influence of emerging technologies such as Artificial Intelligence (AI), Internet of Things (IoT), Blockchain, 5 Generation (5G), Big Data, and open data have potentially made it possible for e-government service delivery. Developed countries with high and innovative technologies, including the USA, Japan, and Korea, have advanced e-government service delivery to the public (Aleisa, 2024; Dhaoui, 2021). The common e-government services offered today include those accessed through mobile applications that provide the public with flexibility in accessing government information and services from tailored online

portals and government open data where non-sensitive information is freely accessible. Government open data promotes transparency and accountability in business, research work, and consultation (Alkrajji, 2020; Hodžić, Ravšelj & Alibegović, 2021).

Similarly, online portals and transactional systems, operate to provide the primary interface where the public interacts with the government. The systems are centralised platforms of access to a broad range of government services, information, and various government transactions, including the e-tax system. In addition, the government information management system leads to a pertinent interface for sharing and dissemination of information, communication through government emails, networking, social media, collaboration, and repositories for e-records preservation and archiving. The information management systems provide for integration of various platforms to enhance efficiency and effective and reliable key government business functions such as human resource and payroll management systems, financial management systems, land management systems, and geographical information systems, among others (Adjei-Bamfo, Maloreh-Nyamekye & Ahenkan, 2019; Aleisa, 2024; Dhaoui, 2021; Hodžić, Ravšelj & Alibegović, 2021 & Sapraz, 2023).

On one hand, emerging technologies contribute to executing various e-government services and providing information to the public (Hasan et al., 2024). For instance, Artificial Intelligence (AI) technologies are being integrated into e-government services for automation services that assist in improving responsiveness and public engagement. The chatbot is powered by AI, provides instant responses to public queries, and guides through the execution of e-services. Nevertheless, blockchain technologies are similarly crucial in exploring e-government services by enhancing security and transparency, reducing corruption and fraud risks, and building trust in e-transactions and e-record-keeping (Dhaoui, 2021; Doran et al., 2023). In light of this view, as technology advances, it similarly affects the provision of e-government services, thus achieving the goal of simplifying interactions, streamlining workflows, and ensuring access to government services and information despite geographical location. Figure 1 presents the regional governments' general and common e-services offered to citizens based on the United Nations survey report of 2022.

Figure 1 indicates the number of general and common e-services, regionally. The European region shows high performance, as it provides an average

of 19 out of 22 e-services offered online. Asia is the second region with an average of 17 e-services, followed by America (16), while both Oceania and Africa have an average of 12 e-services each (see Figure 2). It is indicated that more than two-thirds of the countries in Europe provide at least 19 services online, and almost all 22 e-services are offered by half of the European countries, while about 14–18 services are offered by one-third of the countries. The performance of e-government in the European region has always been considered a first-track service that enhances citizen-centric services, providing them with convenient access to government information and services, providing satisfaction, improving transparency, being trustworthy, opening up new avenues for citizen participation and engagement, and thus improving the social and economic well-being of the citizens and the respective nation (UN, 2022). However, it is narrated that the per capita Gross Domestic Product (GDP) is positively related to all of the e-government services offered within the region. For instance, every 10% increase in the number of European citizens using e-government services resulted in an increase of 0.4% to 1.6% of the per capita GDP (Kamal et al., 2023).

In this regard, the performance of the African countries is not very far from that of the leading regions, and thus it draws attention to the African governments need to adopt, share, and collaborate with the giant e-service providers for capacity building and technical support on e-government services. Nevertheless, there are setback issues that underscore the initiatives of various developing countries government e-services categorised into technological, infrastructure, digital divide, data security and privacy, expertise and fiscal resources, individual attributes, organisational structure, policy issues, legal and legislative aspects for adoption, proliferation, and sustainability of the e-government services (Aleisa, 2024; UN, 2022).

Economic development focusses on how best and most efficiently the resources are allocated and its impact measured through various indicators, including Gross Domestic Product (GDP) and Gross National Product (GNP). However, issues of environmental effects, social satisfaction, level of unemployment, quality life sustainability, and qualitative and quantitative growth are similarly potential measures of economic development (Török, 2024). The advancement in technology and dynamic shift to the 4th Industrial Revolution (4IR) have contributed to government service digitisation for better, fast, and continuous

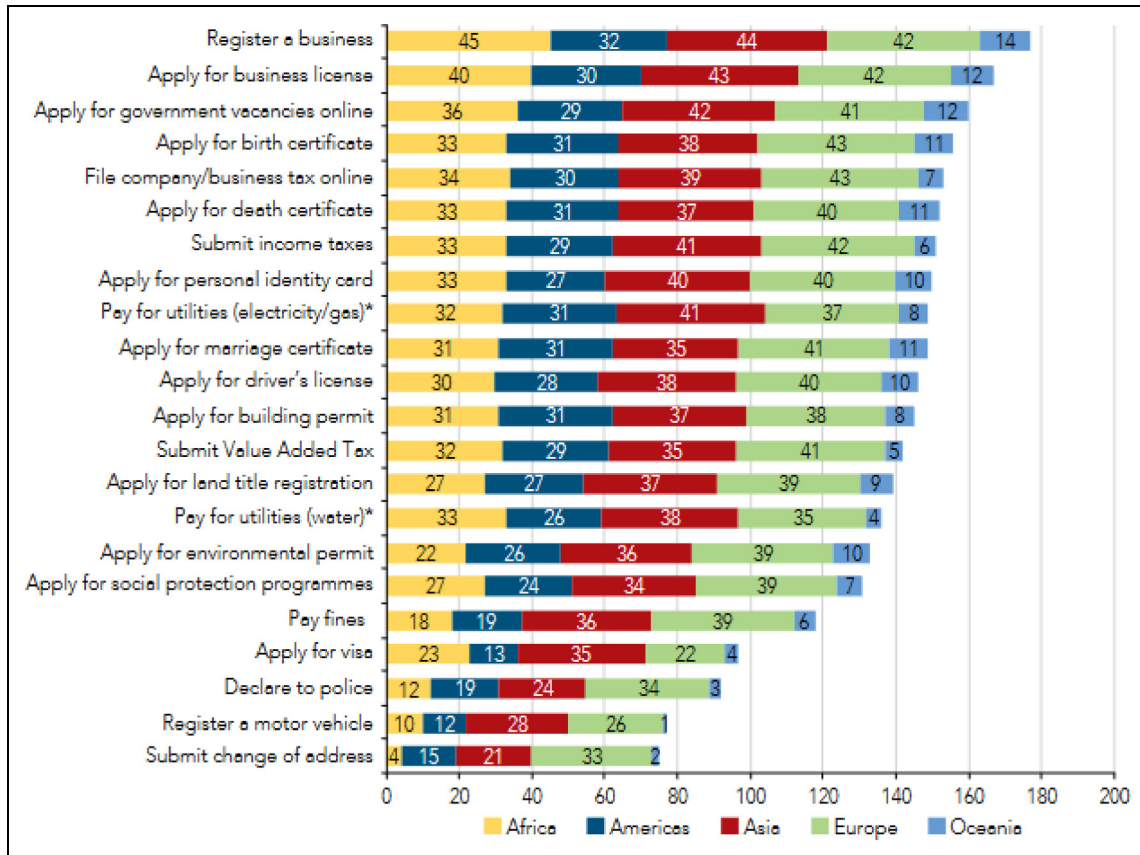


Figure 1. Regional government general and common e-services.
Source: UN e-government survey (2022:58).

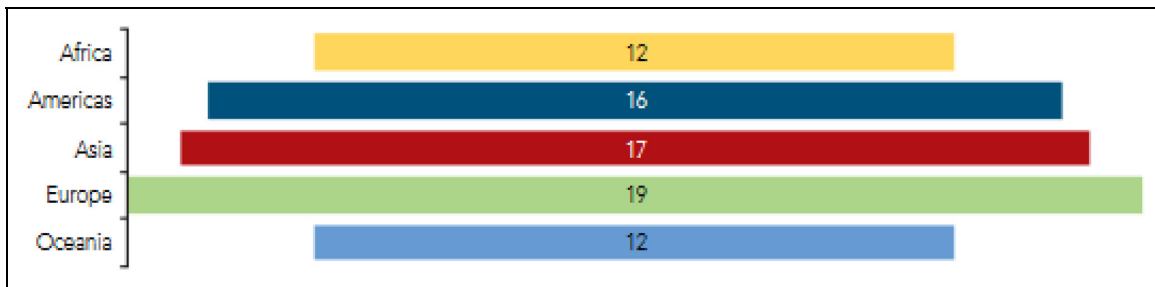


Figure 2. Average number of e-services offered regional wise.
Source: UN e-government survey (2022:58).

interaction with the citizens for the government and public operations with cost-effective savings in procurements, revenue collection, and custom functions (Kamal et al., 2023; Zhao, Wallis & Singh, 2015). The digitised government services, or e-government services, improve access to technologies and promote technological deployment and digital dynamics, resulting in national economic development. The digital deployment and its dynamics in public service delivery are

potentially crucial in economic development as they improve GDP in the shortest time possible while encouraging long-term growth in GDP (Castro & Lopes, 2022; Goloshchapova et al., 2023; Török, 2024).

In this regard, Kamal et al. (2023) conducted the study to analyse the impact of e-government on per capita GDP in the European Union countries, where the United Nations E-Government Development Index (UNEGDI) revealed that the per capita GDP is

Table 1. SALSA framework for systematic literature search and review.

Stage	Description
Search	Key actions: Keywords identification; search data sources Study scope: Limited to studies related to e-government services for economic development in Tanzania. The limitations of the selected studies provide major insights in order to appraise and synthesise the phenomenon underpinning the study
Appraisal	Key actions: Studies selection through PRISMA approach, assessment of the methods and results of the selected studies
Synthesis	Key actions: Data extraction, narration, and categorical organisation
Analysis	Key actions: Data analysis, findings comparison and conclusion

Source: Amo et al. (2018).

positively related to the e-government enablers. The potential enablers are categorised based on technology and government–citizen relationships. The technological-based enablers involve techno-know-how or human capital, connectivity, and technological infrastructure, whereas the government–citizen relationship is enabled by the business environment, government policy and vision, social and cultural aspects, legal issues, citizen adoption, and e-participation (Kamal et al., 2023; Török, 2024; Zhao, Wallis & Singh, 2015). In light of this view, Labhard and Lehtimäki (2022) in the study on digital government and sustainable development identified that there is a positive relationship between economic development and the deployed technology in government functions. This is also supported by Castro and Lopes (2022), who examined the impact of e-government on economic development and reported that nations with efficient and advanced e-government infrastructure are more likely to attain sustainable economic development.

Methodology

The Search, Appraisal, Synthesis and Analysis (SALSA) framework and Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) criteria were used in the systematic review of the literature on the extant literature of Tanzanian e-government services for economic development. The two frameworks provide for a systematic review of the selected items for the study and, on the other hand, a standard for reporting the findings of the review. Both SALSA and PRISMA assist authors in improving quality, maintaining transparency, and impacting the systematic review process (Tedja et al., 2024; Trifu et al., 2022). In particular, the SALSA framework minimises the likely factors of subjectivity and is widely accepted as one of the most appropriate measures that identifies

through searching appropriate resources, appraises the search results through the PRISMA approach, synthesises, and analyses systematically to an informed conclusion. Also, it guarantees precision and completeness of the methodology used in systematic review (Grant & Booth, 2009).

A systematic literature search was conducted to four aggregate data sources which included; Google Scholar, ResearchGate, CORE and Refseek as well as backward citation track which provided other search results on the study. A combination of search key terms was employed to obtain the data sources from 2015 – February 2022. These subject search terms were: e-government services+ Tanzania and e-government services+ economic development+ Tanzania. The four databases were deemed important to this study as they were freely accessed, provided full-length searches in specific fields of the study, and allowed additional filtering options, including publication year and language. The search for these data sources was limited to Tanzania, and in the future, a similar systematic review may be conducted in developing regions, thus expanding the search and data sources for a broader understanding of the underpinning phenomenon of e-government services in fostering economic development in the regions. The framework for the systematic literature search and review in this study is presented in Table 1.

Consequently, the PRISMA statement ensures accuracy and complete presentation of this study (Moher et al., 2009). The PRISMA statement provides a preliminary and evidence-based list of organised information for establishing a comprehensive and combined report of meta-analysis of the systematic review (Sam et al., 2020). In light of this, a systematic review is an audit of a deliberate inquiry that consumes precisely and unambiguously the strategies to measure and scan data from the collected search

studies that comprise the review (Sam et al., 2020). The SALSA framework subsequently led the reviewer to the PRISMA criteria, which provided a standard methodology that contributed to the quality assurance of the revision and replication processes. A systematic review was established by narrating the article identification and selection criteria, screening, article extraction to determine eligibility, and selection of the items for inclusion (Tedja et al., 2024).

The resulted searches were evaluated and the PRISMA statement recommendations for selection of the articles were followed. The criteria for inclusion of the articles involved the article keywords being in the title, the article abstract and the article published in a scientific and peer-reviewed publisher. The exclusion criteria of the search results were on papers from the conference proceedings, editorial letters, non-English articles and articles which were not primarily research-based. One hundred and five (105) articles were found by the combined search and screened to 18 articles that were recommended for the study. Figure 3 presents a flow of information for the search results which are relevant to this study.

Analysis process

The analysis of the articles included for the study was based on the research questions. The articles were coded by E1-E18, indicating e-government article numbers one to 18. The codes simplified the review process based on the research questions. These articles were serially arranged based on the database retrieved, the focus of the article, the research approach, and the significance of the findings in this study. Content analysis and Microsoft Excel computer application software were used for determination of the related information. The content analysis is the systematic, objective, and qualitative strategy that analyses the occurrence of words, phrases, and concepts that derive inference from the systematically reviewed literature. In this regard, similar words and concepts from the included articles that derived inferences in line with the study objectives were collectively organised and discussed to arrive at the informed conclusion. Table 2 presents the valuable and appropriate information about each article.

Table 2 indicates that the highest number of articles on e-government services in Tanzania for economic development published in the year 2020 was four (4) while in 2015, 2017 were three (3) respectively. Consequently, two (2) articles were each published in

2016 and 2019 whereas one (1) article was published in 2021 but none for 2022. This is to say from 2015–2021 there were publications in the area and this is quite impressive that the Tanzanian e-government services are fostering economic development. On the other hand, it is alarming to find that none of the publications are identified in 2022. But the scope of this study is not to analyse the reasons as to why enough publications were not observed during this time. In terms of the aggregate data sources, Google Scholar has 11 included articles which is far more than other aggregates and this is attributed to its prominence and being the oldest tool launched by Google in 2004 which provide citations over all the indexed world databases mainly in social sciences and humanities (Orduna-Malea, Martín-Martín & López-Cózar, 2017).

Results and discussion

Functional e-government services in Tanzania

The advent in ICT influenced the United Republic of Tanzania in providing functional electronic-based services and information in a timely, accurately and pertinent methods (Wahid, 2018). Today, Tanzania government, ministries, departments, agencies, authorities, institutions, public and private organisation have developed an online systems or platforms and mostly webpages and social networks for networking, communication, sharing information and services within and outside the boundaries (Kagoya & Mbamba, 2021). The government of Tanzania through its ministries, institutions and agencies have to be innovative and abreast of the emerging and changing technologies and the ways electronic services and information are promoted and shared to the public (Kagoya & Mbamba, 2021; Masunga, Mapesa & Nyalle, 2020). The functional e-government services are mainly related to social, economic, cultural, political, business, education, health, agriculture, and natural resources just to mention a few. These services are potential in the growth and development of the country's economy.

The study by Deogratus, Maiga and Eilu (2019) on a framework for enhancing the adoption of e-tax services in Tanzania, indicates that the government of Tanzania has to effectively deploy the information technology to perform and provide e-services including e-tax-mobilisation services. The domestic revenue can be efficiently collected through sophisticated manner with a sound framework such as the

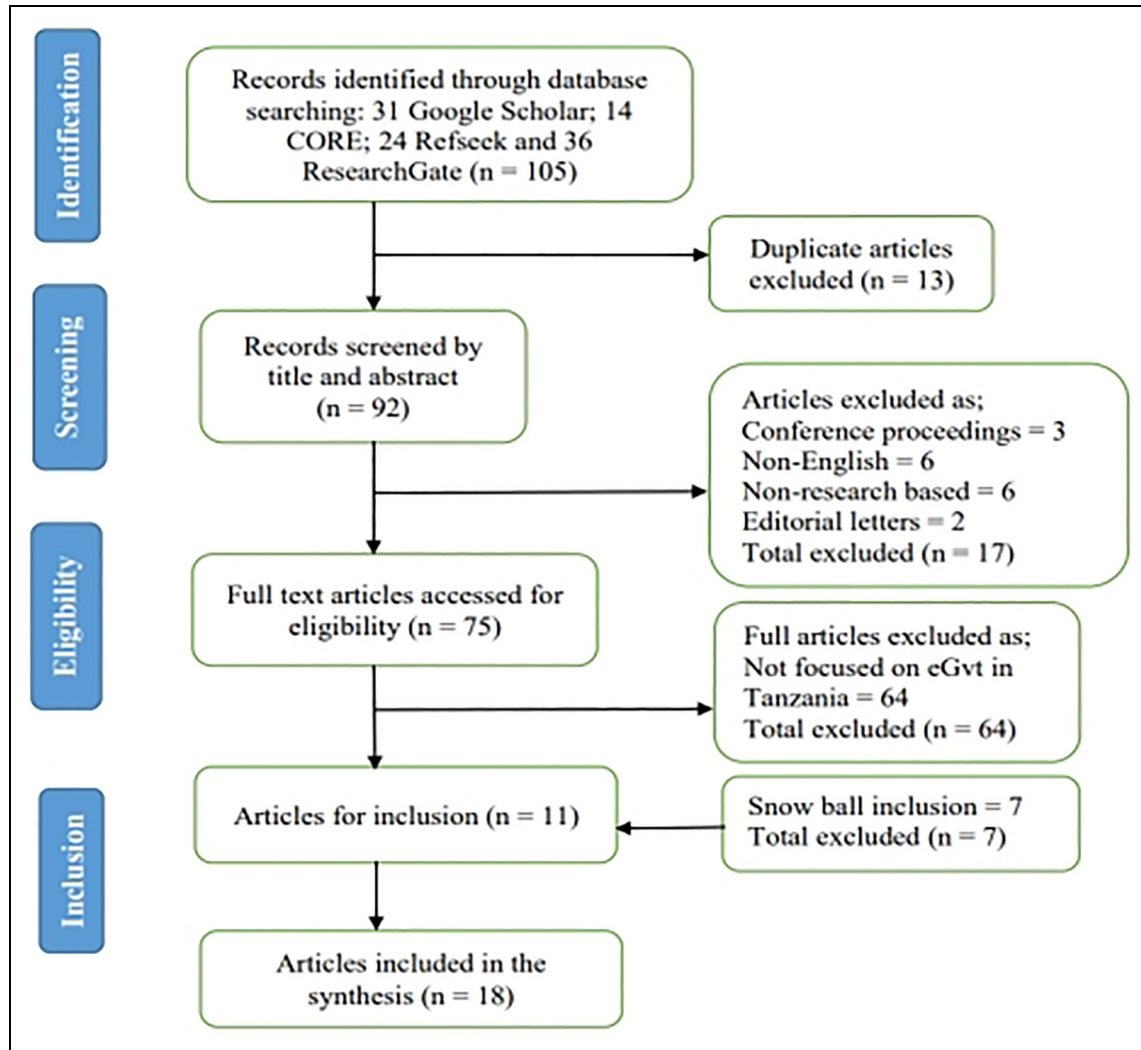


Figure 3. Flow of searched information (PRISMA statement).

Technology Organization Environment (TOE) framework that assist in saving resources of time and money for the public to physically visit the revenue collection authorities. The prominent e-tax-mobilisation services include; the computerised motor vehicle registration and driver's license systems, Electronic Fiscal Device (EFD) that operates with e-tax collection from various business organisations, institutions and entrepreneurs. The Tanzania Revenue Authority (TRA) platform provides online information and services. There are forms on various issues that can be downloaded and/or filled online which include among others; custom license application, domestic tax payment, Tax Identification Number (TIN), Value Added Tax (VAT) application and registration forms (Deogratus, Maiga & Eilu, 2019; Kamatula, 2018; Mwakasungula, 2022).

Furthermore, Wahid (2018) on the study of e-government for Tanzania focusing on current projects and challenges, identified the functional e-government services platforms which are not limited to among others; the government ministries, departments, agencies, institutions websites, and social networks embedded with. The platforms have contributed in boosting the economic development through effective interactions and transactions within, between government units and the public or citizens and beyond (Gunda, Kopoka & Kihonge, 2015). Various functional systems are successfully deployed and broadened online services for efficiency, effectiveness, and reliability towards achieving the national economic development and the business processes. For example, the financial system (Integrated Financial Management System – IFMS) has been integrated with other

Table 2. List of articles included in systematic review (n = 18).

Code	Author (year)	Database	Research focus	Research approach	Significance
E1	Abdallah (2020)	Google Scholar	Aims to determine the factors influencing the implementation of e-government initiatives in Tanzania, a case of the Presidents' Office regional administration and local government. The factors include community resistance to change, infrastructures in terms of hardware and software, and unreliable technical support services	Qualitative and quantitative	+Signf.
E2	Deogratus et al. (2019)	Google Scholar	Determine a framework for enhancing the adoption of e-tax services in Tanzania. The adoption of e-government services including e-tax has always affected by low usage and participation of citizens in e-government services	Qualitative and quantitative	+Signf.
E3	Wahid (2018)	Google Scholar	Aims to examine the e-government current projects and challenges in Tanzania. One among the challenges is on insufficient public-private partnerships programs	Qualitative	+Signf.
E4	Said (2015)	Google Scholar	The research investigates the usability shortcomings on web-based e-government systems in the context of Tanzania with the view of understanding its effects to users and propose the guidelines for improvement. The study reported on low usage and participation of citizens in e-government service	Qualitative and quantitative	+Signf.
E5	Kagoya and Mbamba (2021)	Google Scholar	Assess key attributes for e-government implementation success in Tanzania from a user-participation perspective. The study identified preference on paper-based government services and language barrier on e-government services influenced the initiatives toward e-government implementation	Qualitative and quantitative	+Signf.
E6	Kisoka (2020)	Google Scholar	Examine factors affecting the use of e-government services of the National Examination Council in Tanzania. The identified factors are not limited to insufficient financial resources for sustainability, obsolescence of the IT infrastructure, insufficient experts and awareness to e-government services	Qualitative and quantitative	+Signf.
E7	Lupilya and Jung (2015)	Google Scholar	Examine the status, challenges, and opportunities for e-government transformation in Tanzania. Among the challenges with such a transformation relates to insufficient integrated communication systems, infrastructures including software and hardware	Qualitative	+Signf.
E8	Mashaka et al. (2019)	Google Scholar	Examine the incorporation of indigenous perspectives in provision of e-government services in Tanzania. The incorporation was affected by lack of skills among government officials and availability of key e-government services in local communities	Qualitative	+Signf.
E9	Sichone and Mbamba (2017)	Google Scholar	Aims to examine the administrative features and users' attributes as far as technological aspects are concerned, for e-government implementation in Tanzania. Ultimately, among others, digital divide was the influencing factor	Quantitative	+Signf.
E10	Lupilya (2016)	Google Scholar	The study explores factors for e-government innovation and transformation in Tanzania	Qualitative	+Signf.
E11	Mafwiri (2020)	Google Scholar	The study aims to assess the challenges of adopting e-government at Dar es Salaam Water and Sewerage Authority (DAWASA) in Tanzania. The study concluded with	Qualitative	+Signf.

(continued)

Table 2. (continued)

Code	Author (year)	Database	Research focus	Research approach	Significance
E12	Kamatula (2018)	CORE	challenges related to lack of information technology policy and standards, IT security, privacy and confidentiality issues	Qualitative	+Signf.
E13	Masunga et al. (2020)	CORE	The study aims to establish a framework for e-records in support of e-government implementation in the Tanzania public service	Quantitative	+Signf.
E14	Elisa (2017)	Refseek	The study intends to examine the influence of the e-tax system on tax revenue collection in Tanzania. The e-tax mobilisation and frameworks presented for citizens interaction	Qualitative	+Signf.
E15	Gunda et al. (2015)	Refseek	The main focus of this study is to assess the usability, accessibility and web security vulnerabilities of selected Tanzania e-government websites. The study generally concluded on poor accessibility and usability of the e-government services	Qualitative and quantitative	+Signf.
E16	Magayane et al. (2016)	ResearchGate	The study examines the role of e-government in delivery of public services in Tanzania electric supply company in Ruvuma Region, Tanzania. Issues of e-transactions, sharing and networking highlighted for effective delivery of services	Qualitative and quantitative	+Signf.
E17	Mtebe and Kondoro (2017)	ResearchGate	The study provides an evaluation of the current status of e-governments implementation in Tanzania by examining websites for ministries and government agencies. The study identifies usability gaps and particularly to citizens people with disabilities in using the platforms	Qualitative	+Signf.
E18	Furuholt and Sæbø (2018)	ResearchGate	The study examines the accessibility and usability of government websites in Tanzania. Presented the e-transactions, sharing and networking but also factors related to errors on websites' accessibility, time-consuming in loading the page and presence of inactive links influencing access and use of the platforms	Qualitative	+Signf.
			The study aims to explore the role played by telecentres in providing e-government services in rural areas.		

Source: Authors' construction (2022).

functional systems to improve the online services and e-governance. The other functional e-government systems are; the government web portals, Human Capital Management Information System (HCMIS), Land Management System (LMS), Health Information System (eHealth), Geographical Information System (GIS), National Payment System (NPS), and the National e-Procurement System of Tanzania (NeST) which integrates the Tanzania Interbank Settlement System (TISS), Electronic Clearing House (ECH) and Retail Payment System (RPS) (Mtebe & Kondoro, 2017; Wahid, 2018). Table 3 summarises the e-government services provided to the public.

Table 3 indicates that the Tanzanian e-government services are particularly focused on all activities related to tax collection, transactions, and the sharing of various information and records for the implementation of the government services. In this regard, it is obvious that the government has potentially leveraged information technology to effectively deliver its services to the public. Various platforms, ranging from websites to interactive applications, are able to provide information to different and more complex systems and networks. These platforms intend to allow the public to interact online with government agencies and with each other. However, six (33.4%) research works have been conducted on functional e-government services, which is a promising premise to put forth, and thus more initiatives need to be invested to align with the achievements of developed countries in e-government service provision (Deogratus, Maiga & Eilu, 2019; Gunda, Kopoka & Kihonge, 2015; Kagoya & Mbamba, 2021; Kamatula, 2018; Masunga, Mapesa & Nyalle, 2020; Mtebe & Kondoro, 2017; Wahid, 2018).

In developed countries, the procurement and supply chain management functions have been and for so

long prominent in Switzerland and the United Kingdom and contributed to sustainable development of these regions. On a different note, and particularly in developing countries including African countries such as Ghana reported on advancement in the use of e-government and ultimately minimised time spent in the procedures for clearing goods from the port and aviation (Adjei-Bamfo, Maloreh-Nyamekye & Ahenkan, 2019). Similarly, Hodžić, Ravšelj and Alibegović (2021) observed that the e-procurement among the public and the government of Nepal has been successfully and contributed in minimising human interaction and ultimately reduced corruption between the interacting entities. The United Nations (2022) report indicates that 99 percent of the European Union countries have dynamically advanced in using e-government services and moved to the digital society where most of services including the e-health, e-procurement, e-revenue, e-marketing and electronic education have continually remained a transparent system among these countries. In this regard, the United Nations (2022) and Sapraz (2023) opines that Europe is the leading region in using e-government services over the world followed by Asia while the African region being significantly adopting this innovation. Based on the United Nations survey report, the European region shows an E-Government Development Index (EGDI) of 0.8305 which is far higher among the 193 member states involved with e-government services provision. The EGDI was measured based on telecommunications infrastructure index, human capital index and online service index of the member states (United Nations, 2022) (Figure 4).

Levels of Tanzania e-government services performance

The levels of implementation and performance of e-government service depends on the extent to which the public is aware of the e-government services, the quality of e-government service infrastructure and the government support in successful implementation of e-government (Kagoya & Mbamba, 2021). The implementation of e-government services is benchmarked on the four Gartner's stage model (Noman & Hebbbar, 2016). The stages are; *presence* where information is loaded on the government platform, *interaction stage* where the public virtually communicates with the government. At this level, the citizens can be able to seek or ask the government unit and/or download various forms related to the individual enquiry. Other stages

Table 3. Tanzania e-government services (n = 18).

Article code	e-government services	Count	Percent
E2; E13	e-tax mobilisation	2	11.1
E12	e-records for e-government implementation	1	5.6
E3; E15; E17	e-transactions, sharing and networking	3	16.7
		6	33.4

Source: Authors' construction (2022).

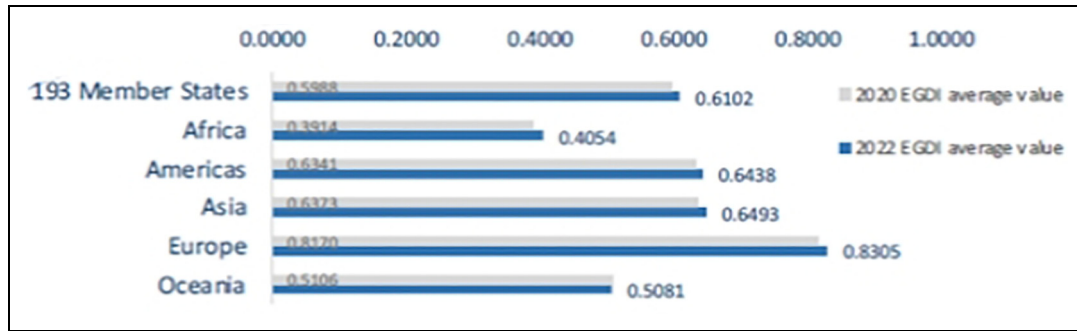


Figure 4. The global average EGDl, United Nations (2022).

include; *transaction level* which provides room for the citizens to settle various financial services such as, renewing license, procurement and paying taxes online. The fourth level of e-government implementation and performance is the *transformation stage* where the government renovates its working style and infrastructure for efficiency and personalisation (Magayane, Mokua & Lanrong, 2016).

Most of the e-government platforms have successfully achieved the fourth level of e-government implementation and performance and drastically moved on towards improving its services. This is evidenced by the improved communication services that contributed to the increase of government revenue collection through the Government e-Payment Gateway (GePG). Similarly, the number of fixed and mobile subscribers have increased from 21.2 million in 2010 to 48.9 million in 2020 and that contributed to social and national income generation. In addition, the number of Internet users has increased from 5 million in 2010 to 26.8 million in March 2020. This trend is attributed by the investment in the Optic Fiber Cable (OFC) backbone which connects regions and districts across the country, though the levels of performance has reached the transaction stage. However, and on a different note, Tanzania's Gross National Income (GNI) per capita raised from \$1020 in 2018 to \$1080 in 2019, which exceeds the 2019 threshold of \$1036 for lower-middle income status that classified the country as a lower-middle income country (United Republic of Tanzania (URT), 2021). However, this endeavor of e-government implementation and performance is rarely visualised in local communities as compared to urban communities.

With the statistics on the improved Internet services and mobile phone subscribers have contributed in raising the level of e-government services performance in Tanzania. In light of this view, Mwakasangula (2022) indicate that the level of the Small and

Medium Entrepreneurs' (SMEs') access and use of e-government services in Tanzania is significantly improved following the raised number of mobile phone subscribers and connectivity. The entrepreneurs and the public at broad perspective can request, post, learn, access, use, and share various government information services and resources related to their functions from the digital or e-government platform (Figure 5).

Sapraz (2023) comments on the importance of e-government platform in fostering e-services to the public. In this, the citizens are efficiently exposed to the digital environment and be able to collaborate responsibly between them and the government. The platform provides easy access to the system at their convenience and thus improves the level of performance of the government towards achieving the national development goals.

Factors deterring Tanzanian e-government services performance

The proliferation and performance of the e-government service has to have balanced attributes for control and maintenance of the platform. Issues related to technology, partnerships, human capital capabilities, financial resources and commitment are potential for the sustainability of the e-government services. Table 4 summarises the factors that influence Tanzania e-government services performance from various screened resources underpinning the study.

Findings in Table 4 show that 13(72.2%) research-based papers on Tanzanian e-government service performance identified various factors that influence the effectiveness of the electronic services. In particular, issues related to errors on websites' accessibility, poor accessibility and usability of e-government services, the presence of inactive links, time spent loading the page, and usability gaps particularly for citizens with

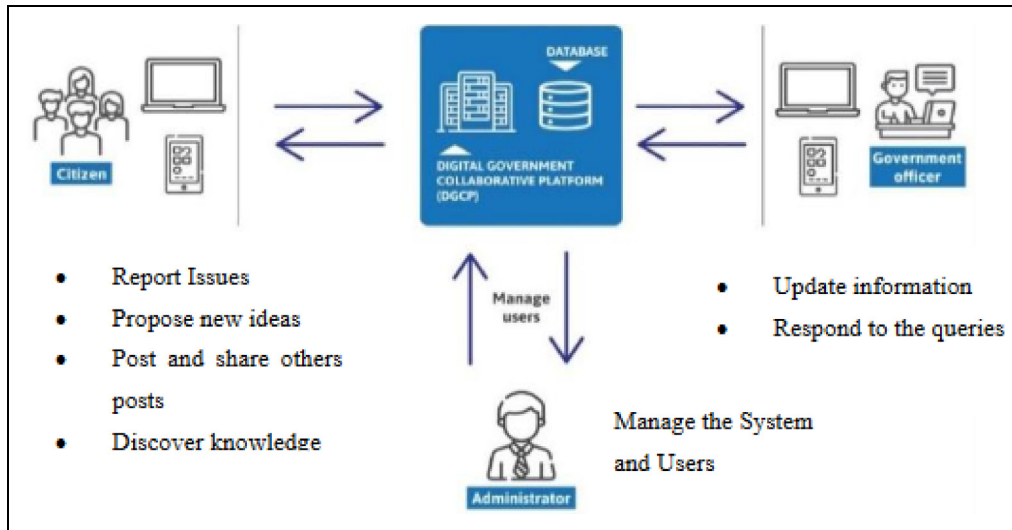


Figure 5. E-government platform (Sapraz, 2023).

Table 4. Factors influencing Tanzanian e-government services performance (n = 18).

Article code	Factors	Count	Percent
E1; E11; E7	Lack of hardware and software infrastructure IT policies and standards IT security, privacy and confidentiality guarantee Inefficient integrated communication system Resistance to change Limited technical support services	3	16.7
E6	Awareness to e-government services Insufficient IT experts IT infrastructures' obsolescence Insufficient financial resources for sustainability	1	5.6
E4; E2	Low usage and participation of citizens in e-government services	2	11.1
E8	Lack of skills among government officials on e-government Lack of available key e-government services in local communities	1	5.6
E9	Digital divide	1	5.6
E14; E17; E16	Errors on websites' accessibility Poor accessibility and usability of the e-government services Presence of inactive links Time consuming in loading the page Usability gaps and particularly to citizens with disabilities	3	16.7
E5	Language barrier on e-government services platform Preference on paper-based government services	1	5.6
E3	Insufficient Public Private Partnerships (PPPs)	1	5.6
		13	72.2

Source: Authors' construction (2022).

disabilities, were reported in three research-based papers. Additionally, the other three research-based papers indicate that lack of hardware and software infrastructure, IT policies and standards, IT security, privacy, and confidentiality guarantees an inefficient integrated communication system, resistance to change, and

limited technical support services influence the performance of e-government services in Tanzania.

The identified factors are more or less the same across most of the African countries. For example, Adjei-Bamfo, Maloreh-Nyamekye and Ahenkan (2019) observed that the initiatives of improving e-government

in Nigeria, Zambia and Botswana is constrained by various factors among others but not limited to infrastructural issues, citizens' interaction with the e-government, human expertise, language barriers, security, resistance to change, awareness and knowledge on e-government. However, insufficient research works on efficiency and effectiveness of the e-government services have contributed in measuring its performance to most of the developing countries (Hodžić, Ravšelj & Alibegović, 2021). Similarly, the Middle East and North African countries experiences a common phenomenon of budgetary constraint, cybersecurity, digital divide and digital training initiatives that influence the extant of e-government services in these regions (Dhaoui, 2021; Doran et al., 2023; Sapraz, 2023; Sulieman, Eleyan & Alkhateeb, 2022).

According to the progressive and survey report presented by the United Nations (2022), developed countries have excelled in e-government services and among the businesses provided to the citizens are not limited to registration, licensing, revenue collection, application for job vacancies, paying utility bills and fines, visa application, birth, death, and marriage certificates. The report narrates the featuring hurdles to efficiency and effectiveness on the implementation of e-government services and particularly in developing countries. These hurdles are related to barriers over affordability and access of e-services and public access points, but also access to Internet mobile infrastructure, e-information and e-services. Moreover, aspects of e-participation and e-engagement among the citizens' sets back the implementation and utilisation of e-government services. In this regard, developing countries, including Tanzania, have to seize these hurdles and establish strategic plans to overcome the prevailing issues.

Conclusion and recommendations

Conclusion

The aim of this study was to investigate a systematic review of previous research studies on Tanzanian e-government service performance for economic development. This is an essential evaluation that is carried out to discover how practitioners and researchers dealt with the issue of e-government services in this country. Various literatures on Tanzanian e-government services were reviewed and classified into three major themes; the functional e-government services, the level of e-government service performance, and the factors hindering

e-government service performance in Tanzania. It can be concluded that the research on the performance of e-government services in Tanzania has indicated a number of functional services offered and that they have potential in revenue collection and contribute to the nation's economic development. Among other services include, but are not limited to, e-tax mobilisation, e-records for e-government implementation, e-transactions, sharing, and networking. Most of the e-government platforms, including the website and interactive applications, have successfully achieved the fourth level of e-government implementation and performance and drastically moved on towards improving their services. This is evidenced by the improved communication services that contributed to the increase in government revenue collection through the Government e-Payment Gateway (GePG). Nevertheless, of the four stages of e-government performance, Tanzania has improved and dynamically advanced to the transaction levels where the majority of the citizens interact for services and information. However, factors related to the activeness of the platforms, accessibility, usability, infrastructure, security issues, privacy, and technical support services, among others, were identified to influence the performance of Tanzanian e-government services and thus call attention to the government in addressing these issues.

Recommendations for improving e-government services in Tanzania

Despite the success of e-government services in Tanzania, the government has to take advantage of the causal factors influencing the use of e-government services to foster its economic development. In light of this view, the following recommendations are considered important for the government towards enhancing effective e-services that may ultimately contribute to citizen participation, satisfaction, transparency, trustworthiness, and improving social and economic development, and thus national economic growth:

- (i) The government has to ensure the majority of citizens, particularly those from both urban and rural areas, are using e-government services by bridging the digital divide through training programs and locating e-government service ambassadors in rural areas who can assist in creating awareness in the community and support citizens in using the platforms. Nevertheless, efforts should be made to ensure data privacy and security, keep abreast

of technological developments, and establish a potential legal and regulatory framework for e-services.

- (ii) Adopt a comprehensive and holistic strategy that incorporates technological innovation, policy frameworks, capacity-building initiatives, and collaboration between government and Non-Government Organisation (NGO), as well as the successful e-government regions for expertise, infrastructure, knowledge, and skills.
- (iii) The government must proactively engage with citizens and stakeholders to understand their needs, concerns, and aspirations based on government services in order to implement and establish platforms that truly reflect citizens expectations and build on inclusivity and effective governance for economic development.
- (iv) The government may consider integrating programs of e-government in studies from secondary education to college and university curricula to raise awareness among students and thus improve their digital literacy skills, which can be useful during online access to government services and information. This will ultimately enable the community to understand the broader perspective of e-government services and find it useful in the future.

Limitations and areas for future investigation

This study, like every review study, is hampered by a variety of flaws. For example, from 2015 to 2022, all of the publications analysed were for e-government services performance for economic development in Tanzania and were sourced from Google Scholar, ResearchGate, CORE, and Refseek. As a result, this research does not include e-government service performance in other areas of the universe. It has employed a systematic review, and thus future studies should undertake a meta-analysis of e-government services in developing countries. As a result, a meta-analysis study on the design, development, and assessment methods may be conducted. For instance, in Tanzania, despite its significance and position around the globe, its e-government implementation and utilisation have to be assessed towards improving the digital society and national service well-being. Similarly, a meta-analysis study on the initiatives of the respective governments on the alignment of the public in the design and implementation of the

digital government platforms is deemed imperative. Nevertheless, it is also said that e-government service implementation stages are categorised into four levels; thus, future researchers should undertake studies utilising more powerful statistical data analysis techniques to identify the performance of e-government based on the level of implementation. This is because the bulk of the research examined did not go beyond descriptive and inferential statistics for data analysis.

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Author contributions

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