Understanding the challenges to the adoption and implementation of e-government practices in developing countries: A review perspective

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ABSTRACT

Many developing countries, particularly in Africa, face several challenges in implementing comprehensive digitalisation policies. Consequently, successful initiatives on e-government require effective strategies that reflect social, economic and institutional circumstances of each country. Thus, the study sought to understand challenges for the adoption of e-government in developing countries. Specifically, to identify technological, organisational, and environmental challenges affecting the adoption and implementation of e-government practices in developing countries. The technology–Organisation–Environment (TOE) framework served as theoretical framework guiding this study. The author relied on Google Scholar, ResearchGate, PubMed, Scopus, and Web of Science to conduct the systematic literature reviews of various journal articles. The study was conducted over three months to ensure comprehensive systematic review of studies across multiple databases. This duration facilitates effective identification, screening, and better selection of relevant studies. The keywords like e-government, e-services, digital government and e-governance were used to refine the searching process. The sum of 60 articles was retrieved from databases. The inclusion criteria included: Article published between 2015 and 2026, Peer reviewed journal, English language publications, Paper discussing challenges for adoption of e-government and implementation in developing countries. Studies that did not meet these requirements were excluded. As a result, 30 articles were used for analysis. Moreover, thematic analysis was used to analyse the selected articles. The key themes that appeared repeatedly amongst reviewed articles were marked for holistic understanding of challenges for adoption and implementation of e-government. The findings indicate that the adoption and implementation of e-government in developing countries are affected by technological, organisational, and environmental challenges. Technological challenges include information and communication technology (ICT) infrastructure and internet connection, inadequate electricity supply, integration and interoperability, and digital divide. Organisational challenges include resistance to change, financial constraints, and ICT illiteracy, whereas environmental challenges include lack of political will, leadership commitment, and language problems. The study recommended that investment in digitalisation is essential in improving and strengthening service delivery to the citizens in an efficient and effective manner.

Keywords: E-Government, Developing Countries, Information and Communication Technology (ICT)

I. INTRODUCTION

Information and Communication Technology (ICT) have significantly managed to revolutionise public administration globally. Currently the government around the globe continues to deploy Information and Communication Technology to interact with clients or customers at local and international level. The aim of using ICT in public administration is to strengthen effectiveness and efficiency, increase productivity, transparency, accountability and combat corruption in public sectors (Abdulkareem et al., 2021; Dupe Ayesha et al., 2025; Rarhoui, 2024). Public sectors provide public services such as education, health, water, electricity to mention a few. In the 1990s the world witnessed notable advances on information and communication technology. The developed countries are more advanced in ICT and thus make them to be a step ahead in e-government utilisation compared to developing countries (Muparadzi et al., 2024). To cope up with the pace of advancement of Information and Communication Technology as well as e-government, the developing countries have been setting policies, strategic plans and agendas pertaining ICT and e-government (Malanga, 2009).

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For the past two decades many countries and governments around the world widely recognise the impact of e-government on enhancing and strengthening service delivery to the citizens. Various authors have insisted on the merit of using e-government; that means the use of ICT by the government in the governance process (Mimbi & Kyobe, 2017). E-government is the innovation and invention that integrate and incorporate usage of technology by the government to provide public services (Temba, 2026). E-government as the new phenomenon involves the uses and application of information and communication technology for better public service delivery. The electronic government *(e-government)* as widely recognised is defined as the utilisation of information and communication technologies by the government institutions or organisations to provide services via using electronic devices and tools such as internet, emails, computers in all forms of government operations (Mberi et al., 2017).

Therefore, most developing countries are at a prior phase and era of institutionalizing e-government with the intention of lifting up public services effectively and efficiently (Mberi et al., 2017). However, currently the adoption of e-government varies from country to country all over the globe as the results in the disparities of economic growth and technological level (Temba, 2026). For instance, the government of the United Republic of Tanzania is among the nations which took multiple initiatives, procedures and mechanisms to propagate e-government to support its administrative functions (Wahid, 2018). These government operations range from agriculture, education, health, business and trade, tax payment, transport, voting in election etc. The e-government systems have a significant contribution to government operation. It has automated tasks and duties, reduced paperwork; hence leading to cost saving. By doing so the internet has enabled citizens to access government services easily in rural or urban areas (Dupe Ayesha et al., 2025). Despite the notable benefits, Zook et al. (2026) commented that implementing successful e-governance initiatives comes with its own set of challenges and complexities. These challenges include infrastructure limitations, such as inadequate connectivity and the digital divide, which hinder access to digital services for all citizens. Additionally, issues like data security and privacy concerns, the need for interoperability between different Government systems, and resistance to change within bureaucratic structures pose significant hurdles in adopting e-governance. Malodia et al. (2021) emphasised that the challenges posed by inadequate infrastructure, digital literacy gaps, resistance to change, and cultural factors that impede e-government adoption. Consequently, non-adoption would result in technological setbacks, negative indicators, and inefficiencies.

Moreover, Alfiani et al. (2024) recommends developing countries to conduct deep specialised research testing the factors that embed or accelerate the implementation of e-government since e-government forms a great opportunity for development and catching up with modern society. This means that studies on factors affecting e-government should continue to be conducted due to its scarcity. Thus, the present study underscores the challenges for adoption of e-government amongst the developing countries.

1.1 Statement of the Problem

E-government and ICT is a global trend; both in developed and developing countries (Glyptis, et al., 2020a). Developing Countries have been striving to attain the United Nation sustainable development goals particularly to transform public institutions into more efficient, effective, transparent and accountable (Omweri, 2024). Because e-government is seen as an essential strategic catalyst to bring openness, accountability, and efficiency of public institutions (Rarhoui, 2024). Although the level of implementation and accomplishment pose significant thinking. Governments have been diverting financial resources geared to promote ICT (Malanga, 2009). The journey of e-government in Nigeria started in the 2000s (Dupe Ayesha et al., 2025). Countries such as Rwanda, Kenya and South Africa have developed robust large-scale e-government projects on the field. In the meantime, South Africa is a frontrunner in e-governance in Africa. It has introduced various projects such as Introduction of the Integrated Urban Development Framework (IUDF) aiming to boost ICT at local levels (Omweri, 2024).

Despite the plans, strategies, initiative and action on adoption and implementation of e-government, the developing countries still encounter several setbacks. Poor infrastructure, low internet connectivity, digital illiteracy, digital divide between rural and urban areas, power supply, political commitment, corruption (Hans & Rutenge, 2024; Omweri, 2024). Moreover, the issue concerning privacy, secrecy and legal framework to protect users continue to be an obstacle too (Glyptis et al., 2020a; Hans & Rutenge, 2024; Rarhoui, 2024). But remarkable and tangible improvement can be witnessed (Rarhoui, 2024). Therefore, from a review perspective it is worthwhile to explore these obstacles on adoption and implementation of e-government in developing countries. Hence, this paper contributes to the existing body of literature on e-government in Tanzania.

1.2 Research Objectives

i. To identify the technological challenges affecting the adoption and implementation of e-government practices in developing countries.
ii. To identify the organisational challenges affecting the adoption and implementation of e-government practices in developing countries.

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iii. To identify the environmental challenges affecting the adoption and implementation of e-government practices in developing countries.

II. LITERATURE REVIEW

2.1 Theoretical Review

2.1.1 Technology–Organisation–Environment (TOE) framework

The Technology–Organisation–Environment (TOE) framework was developed by Tornatzky and Fleischer (1990) to provide an understanding of the factors that influence adoption and implementation of new technologies. The TOE framework comprises the characteristics of three dimensions, including technology, organisation, and environment (Sihotang et al., 2023). Technology encompasses internet access, computers and other dimensions of ICT infrastructure. The organisational dimension comprises factors within the government, such as, internal operational capabilities, policies, funding, goals, and training. Finally, the environmental dimension covers the broader external context surrounding organisations, including citizens, non-profit organisations, regulatory conditions, external stakeholders, and internal actors (Zook et al., 2025). The TOE framework suggest that the successful adoption and implementation of technological innovations are shaped by the interplay among factors within the technological, organisational, and environmental conditions (Suradi, 2025). The use of the TOE framework indicates that technological challenges such as cybersecurity issues and digital divide, extend beyond infrastructural problems and they are closely interconnected with organisational culture and governance structures (Alfiani et al., 2024). Organisational change plays an important role in linking disruptive technologies and digital transformation, whereas environmental and technological factors may vary depending on the context.

This implies that successful digital transformation requires more than technological investment, it also depends on the organisation's flexibility, capacity, and preparedness to adapt to change (Küçükoğlu & Kabakuş 2025). Ultimately, capacity-building programmes are essential for bringing gaps in digital skills. Similarly, addressing corruption and building public trust are fundamental to the successful implementation of e-government. Digital accountability mechanisms, transparent procurement processes, and civil society oversight can contribute to the legitimacy and credibility of e-government initiatives. Moreover, international collaborations and public-private partnerships are essential for stimulating innovation, supporting capacity building, and providing technical expertise (Shwehdy et al., 2025). The TOE framework is applicable to this study because it acknowledges that technological adoption is not shaped by technological factors alone but is influenced by the interplay among technological, organisational, and environmental factors. Accordingly, the framework guides the study in examining the challenges to the adoption and implementation of e-government practices in developing countries.

2.2 Empirical Review

Kamatula (2019) conducted a study on an assessment of e-records readiness as a pre-requisite for e-governance in Tanzania. Data was collected via interview and personal observation and thematic analysis was employed to analyse data. From the findings, it was revealed that employees in the public sector have limited knowledge and skills about e-records together with other similar systems. Nevertheless, the study by (Deogratias & Tefurukwa, 2025; Hans & Rutenge, 2024; Omary et al., 2009) highlighted several challenges facing e-government in Tanzania. For instance, Deogratias and Tefurukwa (2025) on their study titled challenges facing E-recruitment in Tanzania Public Service: opined that ICT illiteracy, resistance to change, poor internet connectivity, budget constraints, limited system integration and interoperability as some of challenge facing e-government in Tanzania. Some of the similar findings were observed by Hans and Rutenge (2024) and Omary et al. (2009) such as financial constraints, ICT illiteracy, inadequate internet connectivity, poor ICT infrastructure.

Glyptis et al. (2020b) investigated e-government implementation challenges in small countries. The study employed a case study research design. An interview method was used to collect data from 26 government employees. From the findings, it was revealed that organisational, institutional and socio-cultural factors are obstacles towards e-government adoption and implementation. The factors include budget restriction, legal framework, ICT literacy, inadequate infrastructure, resistance, political will. Moreover, Rarhoui, (2024) identified the challenge of interoperability as revealed by DEO, cybersecurity, digital literacy, political commitment, ICT infrastructure and funding. Kaoutar Rarhoui says that most African countries rely on donors' assistance to finance ICT investment and when the aid stops to flow the continuation of investment is halted. Also, the study raises the challenge of artificial intelligence due to concerns of privacy and security. However, of the challenges Kaoutar Rarhoui is of opinion that tangible benefit of e-government has been achieved by African countries.

The study by Muparadzi et al., (2024) from Zimbabwe highlighted power shortage as an obstacle for successful e-government implementation. More than sixty one percent households in Zimbabwe have no electricity. The similar obstacle was found by Malanga, (2009) in Malawi, and in Nigeria Abdulkareem et al. (2021) opined that because electricity is not stable, it has resulted in delay of provision of national identity cards to citizens. The activity that can

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cover one month, it has been taking up to three months due to poor electricity and. When there is no electricity, government institutions become unproductive. This is due to the fact that e-government devices, equipment and tools need electricity to work perfectly throughout the day.

III. METHODOLOGY

The study used systematic literature Review (SLR). SLR is a research technique for systematically identifying, assessing, selecting and analysing the existing studies on a particular topic or answering a research question in a way that is reproducible and transparent. Indeed, the author relied on Google Scholar, ResearchGate, PubMed, Scopus, and Web of Science to conduct the systematic literature reviews of various journal articles. The study was conducted over three months to ensure comprehensive systematic review of studies across multiple databases. This duration facilitates effective identification, screening, and better selection of relevant studies. The keywords like e-government, e-services, digital government and e-governance were used to refine the searching process. The sum of 60 articles was retrieved from databases. The inclusion criteria included: Article published between 2015 and 2026, Peer reviewed journal, English language publications, Paper discussing challenges for adoption of e-government and implementation in developing countries. Studies that did not meet these requirements were excluded. As a result, 30 articles were used for analysis. Moreover, thematic analysis was used to analyse the selected articles. The key themes that appeared repeatedly amongst reviewed articles were marked for holistic understanding of challenges for adoption and implementation of e-government.

IV. FINDINGS & DISCUSSION

4.1 Challenges for Adoption and Implementation of E-Government

4.1.1 Technological Challenges

Integration and interoperability: Information sharing between government offices, department, agencies, and ministries is a big challenge in most developing countries. For a quite a period of time now, it has been lamented not only by stakeholder and citizens who seek service to government offices but also government officials too. There is existence of multiple e-government services among the developing countries and these e-government systems are not integrated to one another. This was spotted by Deogratias and Tefurukwa (2025) on their study about challenges facing e-recruitment in Tanzania. It was witnessed that, the Public Service Recruitment Secretariat (PSRS) cannot share and even access information from other key stakeholder's institution database such as Tanzania Commission for Universities (TCU), High Education Student Loan Board (HESLB). Technically they are not interconnected due to the fact there is no a single server with all data. That prompts an increased cost on the e-recruitment process because PSRS has to find alternative ways to verify data from candidates. "*The biggest challenge by the government is the non-interconnectedness of its various systems. We have been facing challenges in exchanging information with other employment stakeholders like TCU and high learning institutions; thus, it has become difficult for us to verify candidates' information in time".* The similar challenge was noticed in Malaysia by Ramli (2017) that there was no coordination between government agencies compared to their counterpart South Korea who has developed and successfully managed to streamline the integration of government activities amongst different government agencies.

Information and Communication Technology Infrastructure and Internet Connection

The presence of good Information and Communication Technology infrastructure are basic necessities and essential for adoption and implementing e-government programs in any country (Blom & Uwizeyimana, 2020; Deogratias & Tefurukwa, 2025; Hans & Rutenge, 2024; Ramli, 2017; Samsor, 2021; Temba, 2026). But the general environment of ICT infrastructure and internet connection in most developing countries are undesirable. There are limited, low and poor ICT infrastructures together with inadequate internet connectivity. Despite the initiatives of countries like Ghana, Kenya, South Africa, Rwanda the implementation of e-government programs are hampered with inadequate or poor ICT infrastructure (Omweri, 2024). Also, Deogratias and Tefurukwa, (2025); Hans and Rutenge, (2024) portrayed the above similar hurdle in Tanzania. Zhang and Kaur (2024) pointed out that inadequate ICT infrastructure includes but not limited to outdated hardware and software systems, low internet coverage and speed, fibre connectivity, electricity supplies. Therefore, poor ICT infrastructure has hampered effective deployment of the internet in rural and urban areas. Although in town areas there is noticeable improved ICT infrastructure and internet penetration, low bandwidth is still a problem (Omary et al., 2009). Thus, for effective implementation of e-government services robust technological infrastructure is important.

Electricity Supply: This has been identified as another hurdle in launching successful e-government services amongst developing countries. E-government infrastructures depend on power supply "electricity" to operate. Power or electrical supply in developing countries is considered to be insufficient and unevenly distributed between rural and urban areas. According to Kavinga and Bwalya (2026) access to electricity is a significant driver of e-government development in any country. For instance, Blom and Uwizeyimana (2020) pointed out that 15% of South African

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residents have no access to power supply. Though, even those with access to power supply have been experiencing frequent power cuts. The above notion of power cuts in South Africa prevailed in Malawi too. According to Malanga (2009) the majority of citizens in Malawi are not connected to electricity; and those connected experienced regular power interruption. Whereby rural areas are more affected than urban areas. Similarly, Muparadzi et al., 2024; Omweri (2024) raised the challenge of electrical supply in rural areas too in Ghana and Zimbabwe. It is estimated that up to 60% of households in Zimbabwe have no access to electricity supply (Muparadzi et al., 2024). Thus, shortage and inadequate electricity supply impedes e-government initiatives in most developing nations.

Digital Divide: According to Malodia et al. (2021) the digital divide refers to the gap in information literacy, skill sets and access to technology, which creates social and economic inequality among groups. Any inequities in accessing ICT can contribute to digital division amongst sects in the society (Zhang & Kaur, 2024). From the above explanation, a particular group of people can be marginalised to participate in e-government due to literacy level, infrastructure, skills, age, gender etc. The digital divide affects the majority of the population in rural areas. Many of them are deprived from owning desktop computers, smartphones and limited access to the internet (Malanga, 2009). Then it is essential to minimise the digital divide gap in most developing countries so as to create and promote an inclusive environment for all citizens to utilise e-government.

4.1.2 Organisational Challenges

Resistance to change. Some public officials acted as a setback to the adoption and implementation of e-government in many developing countries. They perceived e-government as a new threat at their workplace. Hence it was too difficult to embrace it. As noted by Ramli (2017) in Malaysia the government officials feared the new system as they thought it would deprive them of their tasks, duties and careers. During the interview Ramli quoted one the interviewee saying that *"it is hard using the e-land, because my role would not be so important anymore"*. This meant that the mindset of public officials bore a negative thought towards technology. But Savveli et al. (2025) is of suggestion that resistance to change among individuals is a common phenomenon during early interaction due to issues on trustworthiness and reliability. Meanwhile, Deogratias and Tefurukwa (2025) found out that both public officials and users who are "*job seekers"* were reluctant to change regarding e-recruitment in Tanzania that led to a reduction in its pace. Although later on public officials and institutions fully started to use e-recruitment after government intervention, the dilemma of resistance to change is still a hurdle to candidate "*job seekers"* who prefer the traditional recruitment process. And it is attributed to ICT illiteracy among candidates. Nevertheless, the study by Hans and Rutenge (2024) highlighted the employee to be hesitant on using digital platforms because they are accustomed to conservative ways.

Financial constraints: One among the factors jeopardizing the adoption and implementation of e-government in developing countries is limited finance and budget. The budget of these countries can not suffice to cover all government plans, policies, operation and expenditures. Therefore, they depend on financial and budgeting assistance from foreign aid and donors. In most scenarios the financial aid comes up with conditionalities. Rarhoui (2024) opined that e-government initiatives in African context often face funding challenges, relying on donor aid, leading to discontinuation without dedicated funding, hindering incremental improvements. For instance, Omary et al. (2009) contended that most of the e-healthcare project in Tanzania by that time was funded by foreign aid and donors and in most cases were directed to HIV/AIDS. Glyptis et al. (2020) on his study from Cyprus opined that e-government projects subsidised by EU funds still have economic constraints, although not as much. The study conducted by Deogratias and Tefurukwa (2025) revealed budget constraint as a factor limiting the full-scale operation of e-recruitment in Tanzania. Hans and Rutenge (2024) has said e-government requires the government to invest a substantial sum of money to finance infrastructures, software upgrading, regular training of employees, monitoring etc. Also, Kamatula (2019) revealed the financial incapacities as the dominant hindrance toward attaining desirable e-government in developing countries. Although the presence of limited budgets and weak financial masculine of developing countries, the global economic crisis hampers e-government. According to Glyptis et al. (2020b) the economic crisis in 2012 resulted in reducing the pace of e-government adoption.

ICT Illiteracy: The study by Kavinga and Bwalya (2026) showed ICT literacy as well as possessing ICT skills as essential for any proper system operation. Thus, for e-government to succeed it requires users both *"citizen or client and public officials"* to be literate at ICT. However, the situation is contrary in many developing countries. The government official was found and believed to be illiterate on ICT. Hence, it led to thwarting e-government initiatives and practices. Inadequate digital literacy to public servants is attributed to lacking in-service training programs (Dupe Ayesha et al., 2025). For instance, Kamatula (2019) established that employees at national museums in Tanzania had limited knowledge and skills pertaining e-records application on issues like metadata identification, e-records storage, distribution and disposition though they had graduate diplomas from Tanzania Public Service College. He further ascertains even the ICT professional in government office has shortage/deficit knowledge and skills regarding the field of e-record management. Deogratias and Tefurukwa, (2025) revealed that the issue of ICT illiteracy is not bound only to public officials; rather it includes other users too *"beneficiary"*; that's to say citizens *(clients or customers)*. Based on their study, job seekers or candidates do not understand how to use an e-government recruitment portal. Even for the

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mere instruction the candidate has been phoning the public service recruitment secretariat for assistance. Regardless of the effort taken by the public service recruitment secretariat to upload video and slides on their official websites on how to use e-recruitment. Hence, Blom and Uwizeyimana (2020) are of the opinion that the challenge of IC illiteracy is more widely affecting rural areas than urban areas, because of inadequate competent personnel who can provide assistance to dwellers in rural areas on how to access e-government. Thus, they provided the suggestion to the government to offer training to citizens on how to use information communication technology in South Africa. As it has been evidenced that digital literacy is an important key factor in influencing the willingness of citizens to use e-government.

4.1.3 Environmental Challenges

Language: Results show the existence of multiple languages in most developing countries as an obstacle for e-government preparedness and implementation. The population of a particular nation can speak a different language. Nigeria, India, Democratic Republic of Congo to mention a few, they provide a clear picture of countries whose citizens speak different languages. Even in this era of advanced science and technology it becomes difficult to develop a robust e-government structure that can include all diverse languages. These results are in line with remarks from vast literature that existence and usage of multiple languages in a given country hampers e-government (Muparadzi et al., 2024). Thus, it is important to consider the impact of language on launching e-government.

Lack of Political Will and Leadership Commitment: Strong political will and leadership commitment influences the outcomes of any initiative; whether in public or private organisation. Politics will enhance transparency and accountability. Furthermore, political will and leadership commitment helps in settling policies and legal framework compliance which act as a roadmap. According to Alfiani et al. (2024) political will in the context of e-government refers to the commitment of top government leaders to drive the successful adoption and implementation of digital governance initiatives. But has been found to be a challenge in Nigeria. Top management do not exert enough will and commitment to support e-government. There is inconsistent commitment with the intention of manipulating traditional practices so as to facilitate fraud and other illicit practices. Also, the findings by Muparadzi et al. (2024) revealed the same problem in Zimbabwe that political will and commitment is low compared to his neighbour South Africa. Thus, top management behaviour, attitude and support are significant in influencing adoption and implementation of e-government; and the lack of political commitment and coordination on establishing a clear e-government strategy makes the whole procedure of adopting e-government less effective (Glyptis, et al., 2020b).

Table 1

Summary of Studies on the challenge for Adoption and Implementation of e-government

S/N	Author's	Challenge for adoption & implementation of e-government.
1	Deogratias & Tefurukwa, 2025; Hans & Rutenge, 2024; Ramli, 2017; Savveli et al., 2025	Resistance to change.
2	Deogratias & Tefurukwa, 2025; Glyptis et al., 2020; Hans & Rutenge, 2024; Kamatula, 2019; Omary et al., 2009; Rarhoui, 2024	Financial constraints
3	Blom & Uwizeyimana, 2020; Deogratias & Tefurukwa, 2025; Dupe Ayesha et al., 2025; Kamatula, 2019; Kavinga & C Bwalya, 2026	ICT illiteracy
4	Deogratias & Tefurukwa, 2025; Ramli, 2017	Integration and interoperability
5	Blom & Uwizeyimana, 2020; Deogratias & Tefurukwa, 2025; Hans & Rutenge, 2024; Omary et al., 2009; Omweri, 2024; Ramli, 2017; Samsor, 2021; Temba, 2026; Zhang & Kaur, 2024	Information and communication technology infrastructure and internet connection
6	Blom & Uwizeyimana, 2020; Kavinga & C Bwalya, 2026; Malanga, 2009; Muparadzi et al., 2024; Omweri, 2024	Electricity supply
7	Malanga, 2009; Malodia et al., 2021; Zhang & Kaur, 2024	Digital divide
8	Muparadzi et al., 2024	Language
9	Dupe Ayesha et al., 2025; Glyptis et al., 2020; Muparadzi et al., 2024	Lack of political will and commitment

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V. CONCLUSION & RECOMENDATIONS

5.1 Conclusion

The study sought to understand challenges for the adoption of e-government in developing countries. The findings indicated that the adoption and implementation of e-government in developing countries are affected by technological, organisational, and environmental challenges. Technological challenges include information and communication technology (ICT) infrastructure and internet connection, inadequate electricity supply, integration and interoperability, and digital divide. Organisational challenges include resistance to change, financial constraints, and ICT illiteracy, whereas environmental challenges include lack of political will, leadership commitment, and language problems. These factors are among the most commonly cited challenges facing developing countries in the adoption and implementation of e-government. Despite the challenges identified in the study, the reviewed literature pinpoints that there is significant progress in implementing e-government services amongst the nation. That the degree of readiness, adoption and implementation vary amongst the developing countries. And it is worth to note that the concept of e-government has evolved to re-engineer how the government conducts its function and to interact with citizens.

5.2 Recommendation

Meanwhile, inauguration of e-government has been seen as a catalyst to upsurge transparency, accountability; in another hand it helps on reducing corruption and cost saving by minimizing utilisation of paper work on many offices. The study recommended the needs for the developing countries to continue deploying ICT to increase interaction between government agencies (G2G), government to citizen (G2C), government to business (G2B) with the aim of improving effectiveness and efficiency in government operation. Deploying ICT must go hand to hand with development of ICT infrastructure. The government has to extend ICT infrastructure in both urban and rural areas to bridge the gap. Availability of reliable power supply in both rural and urban areas. Increasing digital literacy to marginalised groups as well as human capital development to those working on government institutions. And this can be leveraged by the government cooperating with private sectors and civil society organisations. The partnership can help in addressing some of the challenges such as funding.

Moreover, the government has to upsurge citizen engagement in comprehensive designing and implementation. This participatory approach can create user friendly and effective e-government adoption and implementation. Additionally, the government must develop a robust mechanism to protect sensitive citizen's data, information and privacy. By doing so the government will build the atmospheric trust with citizens and promote wide adoption of e-government. Investing on mobile phone usage. The penetration and usage rate of mobile phones has increased in developing countries. The majority of citizens access the internet via mobile devices compared to desktop or laptop. So due to current trends the government have develop well drafted mobile strategies so that people can use e-government through their mobile devices.

Declaration of Interest

The authors declare that they do not have any known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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