

Factors affecting e-government adoption in Liberia: a practitioner perspective

ABSTRACT

Globally, e-government implementation is growing, including in sub-Saharan Africa, evidenced by the frequently reported benefits of e-government programs in developed countries. The government of Liberia (GOL) is pursuing an e-government agenda to improve governance through the effective and efficient use of technology in the public sector.

Liberia, one of the most underdeveloped countries in the world is bedevilled by over ten years of civil war and most recently an Ebola virus outbreak which created severe human capacity gaps.

The government has realised that in order to accelerate development and enhance its peoples' livelihood, it must integrate technology into its public administration procedures. However, the implementation of e-government in Liberia has had mixed success.

The objective of this research is to identify critical factors affecting the implementation of e-government in Liberia. To achieve this aim, a reflective practitioner approach is employed as a lens to collect and guide the analysis of qualitative data. The data is collected through focus group discussion with senior IT practitioners (CIOs) of Liberia who are leading the delivery of e-initiatives in Liberia.

The factors identified are intended to guide how e-government initiatives are implemented in Liberia. This research contributes to raising awareness about Liberia's e-government program.

Keywords E-government, Implementation, Reflective Practitioner, E-government challenges, Liberia, Developing countries, sub-Saharan Africa.

1 INTRODUCTION

In the last decade, e-government has become an important area of focus for government strategy (Reyes Jr and Tangkeko 2017; Verkijika and De Wet 2018). The growth of information technology solutions in Africa has prompted many governments to consider digital transformation of services to residents. The rapid development of e-government across the world has opened the discussion on how governments can improve citizens' adoption of

their online public services (Sabani et al. 2018). Fully utilizing e-government is necessary for nations to remain competitive in the 21st century globalized world (Glyptis et al. 2020).

After more than ten years of civil war, Liberia became a democratic country in 2005. The government has realised that to hasten growth and improve the livelihood of its citizenry, it has to focus on delivering services with the prime customer its constituency (Dessus et al. 2012).

The Government of Liberia (GOL) in 2008 adopted a comprehensive e-government program involving all Ministries, Agencies and Commissions (MACs). The main aim of the program is to simplify electronic communication among government agencies and to deliver more user-friendly and cost-effective services (Rorissa and Demissie 2010).

This phase in the development of Liberia is characterised by the spread of digital and communication technologies with a strong focus on IT services. However, after twelve years, the government is still struggling to implement e-government initiatives. This outcome is consistent with prior research that found adoption of e-government in developing countries is not considered as successful as in developed countries (Al-rawahna et al. 2019) and that 35 per cent of e-government projects in developing countries are total failures, 50 per cent are partial failures, and only 15 per cent are successes (Heeks 2002). Despite the many benefits of e-government, the implementation of e-government initiatives in African countries has in most cases failed (Twizeyimana and Andersson 2019).

The E-Government Development Index (EGDI) presents the development of e-government in United Nations Member States based on Online Service Index (OSI), Telecommunications Index (TII) and Human Capital Index (HCI) (Whitmore 2012). The EGDI shows that sub-Saharan African (SSA) countries are the lowest-ranked among 193 nations (Verkijika and De Wet 2018). The challenges that affect the implementation of e-government initiatives in the SSA region lead to diversified implementation strategies at various levels (Bwalya et al. 2014).

According to Mustafa et al. (2020), e-government initiatives in the SSA region seem to be far from realising the purpose for which they are undertaken due to several challenges and stumbling blocks. Due to complex and inter-connected challenges, Liberia remains one of the world's most under-developed countries despite signs of significant progress. Such

challenges include curbing malaria and Ebola, preventing and resolving conflicts, and decreasing corruption.

This research aims to explore the opinions of senior IT practitioners of key Liberia MACs in order to understand the challenges e-government initiatives face in Liberia.

To fulfil the aims of the research, a primary research question was formulated as follows:

What are the critical factors that affect e-government implementation in Liberia?

In order to answer the primary research question above, the following secondary research questions were formulated:

- a. From the perspective of government CIOs, why do e-government projects in Liberia fail?*
- b. How can existing e-government implementation approaches be improved to ensure eInitiatives are successful?*

To answer the primary and secondary research questions, we collected qualitative data through focus group discussions with fifteen (15) senior IT practitioners (CIOs) from Liberia MACs. A reflective practitioner approach was used to guide the analysis.

The paper is divided into 6 sections. Sections 1 and 2 present the introduction and review of related literature including research context. Section 3 is concerned with the research methodology used for this research, data collection and processing. This is followed by the research findings in Section 4 and discussion in Section 5. Section 6 draws a conclusion about the research and presents limitation of the study.

2 REVIEW OF RELATED LITERATURE

2.1 What is e-Government?

The concept of e-government was introduced and popularized in the 1990s after the adoption of the Internet and world wide web in government institutions in the UK (Koontz 2002), when it was increasingly being viewed as a tool for cost reduction and administrative process simplification (Fountain 2008), increased government-citizen participation (Hague and Loader 1999) and government-level accountability (Bhatnagar 2003).

According to Curtin et al. (2003), e-government refers to “the use of any and all forms of information and communication technology (ICT) by governments and their agents to

enhance operations, the delivery of public information and services, citizen engagement and public participation and the very process of governance” (p. 2). Similarly, according to Gibbins (2004), e-government enables the implementing governments to “strengthen the flow of information to citizens and to improve citizen access to government programs and services. The resulting transformation makes the government more efficient, more responsive, more accountable and perhaps even more democratic” (p. 33).

E-government claims to have far reaching benefits if implemented in an optimal way (Glyptis et al. 2020).

According to the UN Report (2018), e-government leads to:

- i. efficiency in government activities, processes and services,
- ii. greater public access to government services, and
- iii. increased accountability of government actions and decision-making.

From the definitions above, e-Government involves the interactions and relationship among citizens, government entities, businesses and /or employees; its functionality can be classified into four main categories.

Government to Citizen (G2C)

G2C is concerned with the relationship between government and citizens. The mission of e-Government here is to provide appropriate support for citizens anywhere and at any time by allowing them to perform on-line activities, such as applying online for jobs and searching for contact details of public departments (Heeks 2002; Ndou 2004).

Government to Government (G2G)

G2G concerns the interrelationships within a government itself, or between it and other international governments. The main objective here is to enhance the cooperation between government agencies at different levels and to facilitate communication between government offices in different locations (Ndou 2004).

Government to Business (G2B)

G2B is concerned with all electronic transactions between government and business organizations. Businesses as well as citizens carry out transactions with government, examples being renewing registrations, paying taxes and downloading tender information. In

this way government creates an environment that facilitates administrative requirements for new and existing businesses (Carter & Bélanger 2005).

Government to Employee (G2E)

The objective of G2E is to increase the productivity of both government and its employees by principally enabling the former to interact more effectively with the latter. G2E services include information on government rules, policies and civil rights (Carbo & Williams 2004) as well as e-mail and e-learning capabilities.

The above categorizations give the indication that there are two principal types of interaction between government and other parties, these being: government and organizations, and government and individuals on the other hand. G2C and G2E represent the interaction between government and individuals, while G2B and G2G represent the interaction between government and organizations. Kanaan (2019) makes a similar conclusion in his research.

2.2 e-Government in Africa and developing countries: Initiatives and Challenges

E-government adoption is receiving much attention in developing countries although it is still lagging behind that in developed countries (Mutimukwe et al. 2019).

In recent years, the focus on e-government has shifted to include some of the most under-developed countries, specifically in Africa and other parts of the world (Chipeta 2018; Verkijika and De Wet 2018). The existing e-government efforts in Africa adhere to one of the following models:

- i. Government-to-Citizen or G2C (increased participation of citizens into the public sector decision-making by incorporating transparency, accessibility, cost-effectiveness, and quality into the public sector service delivery, e.g. tax information filing, education results, birth/death certificates, etc.),
- ii. Government-to-Business or G2B (services dealing with the transfer of information between government and non-government organizations and businesses for the purpose of tax payment, licenses, and e-procurement), and
- iii. Government-to-Government or G2G (streamlining and enhancing efficiency of public administrative processes and functions using technological solutions to

promote decentralization and inter-connectedness between national and local-level governments) (Hafkin 2009).

According to Heeks (2002) and Heeks and Kenny (2002), some of the positive impacts of the existing e-government initiatives in African societies include administrative process improvement in terms of costs and performance efficiencies, connecting citizens using technologically innovative services for information exchange and communication, facilitating collaborations and partnerships at a societal level between government agencies, citizens, businesses and other non-government entities.

Irrespective of the geographical location, e-government projects face a variety of challenges during their implementation, but the nature and severity of these issues vary from developed to developing countries (Mustafa et al. 2020). The widening gap in the implementation of e-government in developed and developing countries is contributing to the phenomenon of the 'digital divide', which is severely damaging the potential to harness the power of technological innovation to streamline the government-level processes facilitate the provision of services for citizens (UN Report, 2018).

Literature focusing on the overall development in e-Government in Africa has summarised the various challenges and inadequacies of the local environment towards facilitating the diffusion and adoption of e-government. Some of the limitations are related to the inputs (due to heavy levels of public debt, there is a need for very large amounts of public expenditure to facilitate development in e-government), outputs (the public sector in the different countries is unable to support growth and development in some of the major aspects of the society, such as education, industry, law and order, social welfare and agriculture, to name a few) and processes (lack of management, corruption, inefficiencies and long delays are common characteristics of the public sector that prevent adequate service delivery) (Mukamurenzi et al. 2019; Osei-Kojo 2017; Ramli 2017).

Investigating further into the myriad of challenges faced by the African and developing countries, a number of studies have highlighted factors leading to the failure of e-government initiatives with some divergences and similarities between the different studies. Some researchers are of the view that the failure of e-government in Africa and developing countries can be traced back to the Western point of origin of different ideologies (e.g. e-government), technologies, and models, along with lack of innovative e-government solutions, human resource skills deficiencies, and the stark variation in the value placed on quantitative

information in African and developing countries (Berman and Tettey 2001; Heeks 2002; Heeks and Kenny 2002; Minogue 2001).

Table 1 presents a non-exhaustive list of e-government programs in Africa and developing countries and includes factors that affect the implementation of these programs.

Country	Initiative	Factors Affecting E-Government Implementation	Author
Ethiopia	E-Government Practice, Challenges and Future Prospects in Developing Countries: The Case of Ethiopia	<ul style="list-style-type: none"> • Mobility of human capital both within the country and outside the country • Lack of awareness of e-Government initiatives • Lack of legal and legislative frameworks to support e-government program • Lack of political commitment 	Denbu and Kim (2019)
Nepal	Analyzing Challenges for the Implementation of E-Government in Municipalities within Kathmandu Valley	<ul style="list-style-type: none"> • Human capacity challenge • Financial challenge • Lack of technical infrastructure at the municipalities • Insufficient focus on change management 	Dhonju and Shakya (2019)
South Africa	Challenges and opportunities of e-government in South Africa	<ul style="list-style-type: none"> • Corruption • Skills shortage • Communication challenge 	Mutula (2012)
Jordan	Factors that affect E-government Implementation in Jordan	<ul style="list-style-type: none"> • Internet penetration • Corruption • Resistance to change • Lack of understanding • Cost of internet 	Kanaan et al. (2019)
Malaysia	E-Government implementation in Malaysia	<ul style="list-style-type: none"> • Technical infrastructure • Legislative structure • Financial constraints • Government's role • Human Infrastructure • Conditions of organizations 	Ramli (2017)
Zimbabwe	Zimbabwe E-Govt. Development	<ul style="list-style-type: none"> • Lack of skilled workforce • Shortage of resources • Lack of political readiness 	Ruhode (2016)
Zambia	E-Govt. Adoption in Zambia	<ul style="list-style-type: none"> • Lack of ICT infrastructure, change management, high costs • Non-availability of information in local languages • Lack of political initiatives 	Bwalya (2009)

Table 1 e-Government implementation-related challenges in different parts of Africa and developing countries

In discussing the challenges faced by developing countries in implementing e-government initiatives, the challenges can be generalized into the following categories.

Human Factors: A large number of challenges and issues are related to the human-level limitations, which include lack of awareness, low citizen participation, inadequate training and skill development, unavailability of learning material, gender inequality, and

lack of user trust in technology (Adeyemo 2011; Alshehri and Drew 2010; Bwalya 2009; Dada 2006; Glyptis et al. 2020; Olumoye and Govender 2018; Schuppan 2009; Schwester 2009).

Infrastructural Factors: There are challenges such as lack of power supply, ICT infrastructure, digital divide in society, security, privacy, information sharing, data storage and management systems (Adeyemo 2011; Bwalya and Healy 2010; McGrath and Maiye 2010; Nkohkwo and Islam 2013; Olumoye and Govender 2018; Singh and Travica 2018).

Socio-Cultural Factors: Various cultural and social aspects inherent to a particular society and culture can inhibit or facilitate e-government implementation. Some of these factors include demographics, poverty, corruption, language barriers, e-literacy, level of competition in the market, perceived IT value, and unemployment rate (Cubitt 2014; Krishnan et al. 2013; Olumoye and Govender 2018).

Political Factors: The political situation of the country can impact the favorability of investment and utility of e-government initiatives. Some of the different political factors include leadership, policy-making, legal framework, resource allocation, political hardening, data safety and protection standards, law-and-order situation, administrative reforms (Cubitt 2014; Glyptis et al. 2020; Schwester 2009).

2.3 Research Context

Liberia is Africa's oldest republic. The country has a population of about 4.9 million people (in February 2019 based on the latest United Nations estimates). Liberia is one of the poorest countries in the world. In the past few decades, Liberia has emerged from two prolonged civil conflict situations between 1989-1997 and 1999-2003, which resulted in a considerable loss of life and property as well as large-scale displacement of the local population.

In 2014, the country suffered the deadly Ebola virus outbreak, which killed about five thousand people. The Ebola virus outbreak not only highlighted a number of inherent and structural deficiencies within the country (e.g. government response to a national-level emergency, which it was ill-equipped to handle, lack of adequate healthcare facilities, and lack of skilled workforce to diagnose, treat, quarantine and contain the epidemic situation), but also had a considerable impact on the progress of a war-torn country towards economic development and sustainability (BTI Report, 2016).

2.3.1 E-government in Liberia

In 2014, the Government of Liberia published a document to serve as a guide to the government and donor community for the implementation of electronic government “e-Government” in Liberia. The document called “e-Government Strategy document (2014-2018)” is closely aligned with the Liberia National Agenda for Transformation. It represents an important milestone in the evolution of e-government in Liberia and uses lessons learnt from Liberia’s initial phase of e-government, and leveraged global good practices. The strategy document aims to contribute to Liberia’s economic and social development, as well as the transformation into a competitive, innovative knowledge society.

E-Government in Liberia is dedicated to delivering services to people across society, irrespective of location, economic status, education or ICT ability. With its commitment to a customer-centric approach, the e-government program objective is to transform government and contribute to the nation’s economic and social development. With this view and in consultation with key stakeholders the following vision was crafted for the Liberian e-government strategy: *"Harness the potential of ICT to bring the government closer to the people through effective governance, improved service delivery and socio-economic growth"*.

Ten key outcomes identified in the Liberia e-Government strategy document to enable the realisation of the vision are listed in Table 2.

Strategic Outcome	Description
Outcome 1:	Establishment of Online Government Services
Outcome 2:	Diversified Civil Service Channels
Outcome 3:	Standardized Government Administration Process
Outcome 4:	Connected Government
Outcome 5:	Growth of ICT Entrepreneurship
Outcome 6:	Increase Private Sector Participation in e-Government
Outcome 7:	Expand Nationwide ICT Infrastructure
Outcome 8:	Digitalized Community
Outcome 9:	Well-defined e-Governance Structure
Outcome 10:	Established e-Government Regulatory and Legal Framework

Table 2 Liberia e-Gov Strategic Outcomes (USAID 2014)

The Liberian Government planned the implementation of twenty-two (22) projects over five years (2013-2018). It also proposed service delivery through four channels (online portals, call centres, mobile applications and citizen-centric computer centres). The delivery of e-government services is to be strengthened through core projects including the Integrated Financial Management Information System, e-Government Portal, Centralized Email Management System, Human Resource Management Information System (HRMIS), e-

Procurement, Electronic and Mobile Payment System, e-Office and e-Identification (USAID 2014). There is however little empirical evidence or findings available to report the actual progress of the Liberia e-government strategy.

According to the UN e-government survey conducted in 2018, Liberia is in the list of least developed countries by the e-government development index (EGDI). The country is ranked 173 among 193 countries. This suggests that despite the major investments made in Liberia, it is still struggling to implement its e-government program.

2.3.2 E-government Projects in Liberia

The GOL has articulated an ambitious national strategy for development and implementation of e-government in Liberia. The strategy envisages the implementation of 22 projects. Table 3 shows some e-government projects the GOL is currently implementing.

Project	Description	Principal MAC involved	Status
e-Government Portal	The Government Portal is a single window lined with e-government, information providing system, and operation infrastructure in order to maximize efficiency/productivity and provide rapid/high quality administration services to citizens.	Ministry of Post and Telecommunications (MOPT)	Implemented in 2018
Government Wide Area Network (GovNet)	The GovNet project embodies the concept of inter-networking, where multiple Local Area Networks (LANs) of varying protocols from several ministries and public sector agencies are connected to the GovNet. It is the development of a government backbone network that connects all MACs.	MOPT and LIBTELCO	Implemented in 2019
e-Procurement	E-Procurement system will provide businesses and ministries with common platform to transact. With features such as demand aggregation, catalogue based procurement, dynamic pricing engine, etc; the system is expected to cut down the transaction costs for not only the government, but also suppliers.	PPCC and Ministry of Finance and Development Planning (MFDP)	On-going
Shared Data Center	The Shared Data Centre will house GOL mission-critical and medium-risk systems and servers, consolidated into a secure central location adequately provisioned with power, network infrastructure, data services, and ICT skilled personnel.	LIBTELCO	Implemented in 2019

e-Passport and VISA	Automation of services provided with respect to issue, renewal of passports and visa services of Ministry of Foreign Affairs. This should provide: Better functioning and processes of the Ministry of Foreign Affairs Faster & more efficient issue and management of applications and documents Reduction in opportunities for Fraudulent applications Key Components include: Passport & Visa Management Application Status check facility on channels (Portal, call centre, etc)	Ministry of Foreign Affairs	Implemented in 2017
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Table 3 e-Government projects in Liberia

3 RESEARCH METHODOLOGY

3.1 Research Design

Based on the objective of this research, which is to explore the factors affecting e-Government implementation in Liberia, a qualitative method (focus group discussion) was applied. The focus group discussion is used to understand the factors from the perspective of the IT practitioners of the MACs. In research conducted by Gilbert (2008), he mentioned that participants in a group might raise issues relevant to the matter being investigated that had not been realized by a researcher previously. The technique used in the focus group discussion is the Nominal Group Technique (NGT) which is a method for group brainstorming that encourages contributions from everyone (Gallagher et al. 1993).

3.1.1 The rationale for adopting a Reflective Practitioner method

The first author was employed as a member of the USAID Digital Liberia and e-Government project team in Liberia and was able to immerse himself into the life experiences of the stakeholders and actors under study. The research seeks to satisfy two aims, namely to address or solve a ‘real-world issue’ or problem, and to contribute to the development of theory (Adelman 1993; Lewin 1946). This research involves 15 senior IT practitioners across 15 MACs of Liberia.

The Reflective Practitioner approach is chosen for this study because the research aims to contribute to the real-world situation of the e-government actors of Liberia to gain feedback from their understanding in an immediate problematic situation. Kemmis (2006) described quality practitioner research as not just a matter of technical excellence but “a matter of

addressing important problems in thought and actions, in theory and practice”. We aimed to achieve the view of Groundwater-Smith and Mockler (2005) with practitioner research “collaborative in its nature and transformative in its intent and action”.

In practice, the reflective practitioner approach allows the first author, who is a practitioner in government IT of Liberia, to be integrally involved with the e-government stakeholders and actors of Liberia in designing, planning, implementing, measuring, and recording change initiatives. There is also the need to feedback learnings into the GOL without delays inherent in normal academic research to facilitate an ultimate improvement in service for stakeholders, an objective supported by the reflective practitioner research approach.

3.2 Data Collection

A focus group meeting was held on February 2018. The target participants were senior IT practitioners from the GOL MACs. The objective of the discussion was to explore the lived experiences of participants (IT professionals of the MAC) when working and developing government e-services in Liberia. A meeting was scheduled where participants answered pre-set questions.

The focus group questions were mapped to the three research questions grouped into three overarching focus areas: ‘Where are we now?’, ‘What are the challenges?’ and ‘Where do we want to be?’. These questions drove the focus group discussions.

The discussions were recorded by video and audio and then transcribed in order to analyse the data using thematic analysis to reveal the content and meaning. This analysis allowed addressing of the research problem.

3.3 Data Process for Thematic Construction

The results of the study came from the process of coding and categorising data. The codification of data began by importing the transcribed focus group discussion in a Microsoft Word document into qualitative analysis software (Nvivo) for coding and analysis.

Yin (2017) noted that identifying codes, creating categories and themes and keeping track of the frequency of different statements that are similar can assist a researcher in the data analysis. The variety of **codes** that emerged from the data were grouped into **categories**; subsequently the categories were grouped into **themes**.

A category can be defined as a data storage unit, that is, a category hosts a series of codes that share similar characteristics. Just as the first author assigned codes to the ideas of the participants, in the same way, he also named the categories. The name given to a category had to synthesise its content, that is, the name had to be sufficiently representative of the codes contained within. The category name had to sufficiently represent the group of codes that were hosted in it.

In order to create the themes, the authors reviewed the categories to identify and count significant noun phrases matched to the research question. Searching for themes is an iterative process. The themes created represent patterned responses within the data set.

4 FINDINGS (DEVELOPING THEMES)

In this section, the main themes revealed in the data analysis are discussed. Three themes explain the process of digitalization of the Government of Liberia. The themes were developed from the categories extracted from the focus group discussion. The overarching focus areas were reflected in the themes developed.

The first theme is named: **Current Situation of the E-Government Services in Liberia.**

Theme #1 concerns the e-government services that are currently in place in Liberia. The theme was confirmed by the category “*actual performance of the e-government services*” which consisted of the following codes: applying for a e-job, applying for e-birth certificate, applying for e-passport, paying taxes, Integrated Financial Management Systems (IFMIS), applying for e-work extension permit, applying for an e-visa and applying for a scholarship. Table 4 presents the category and codes for Theme #1.

Theme 1: Current Situation of the E-Government Services in Liberia	
Category	Codes
Actual Performance of the e-Government Services	Applying for a e-job
	Applying for a e-birth certificate
	Applying for a e-passport
	Paying for taxes
	Delaying a tag flag receipt
	Applying for an e-visa
	Applying for an e-work extension permit
	Applying for a scholarship
Integrated Financial Management Systems (IFMIS),	

Table 4 Theme #1 Current Situation of the e-Government Services Performance in Liberia

The variety of digital services is wide-ranging from registration of birth certificates to the extension of visas and work permits. In this way, the rapidity and effectiveness of

government services have been improved. Also, the participants observed a reduction in the citizen efforts required to achieve these types of services.

It was expected that the digitalization process in Liberia would be well received by its citizens given the consequent easing of the effort; however, this is not the case according to the IT professionals. Indeed, it was observed that there are several types of problems, some of which seem to have an easy solution. Nonetheless, the existence of other difficulties that merit in-depth action from authorities has been confirmed. Indeed, it has been observed that citizens, far from feeling enthusiastic about obtaining these services online have reported a poor perception concerning the use of digital services. The reasons exposed are related to the mistrust that people hold towards the use of computers and other digital mechanisms, as they frequently think these are tools the government uses to spy on their lives. For example, PT2 stated: *“I had an experience at a government organisation, where the head of training and research. We said: okay, can we migrate your email to corporate one. He said people will spy on him...”* (PT2). Also, another participant mentioned: *“So, people resist change. The heads of our government institutions just refuse to use their official mail for communication. They say people will spy on them. That mentality is difficult to change”* (PT1). Therefore, citizens retreat and cling to their old habits, i.e. they prefer to follow the old way of obtaining these types of services. The obstacles are discussed in the next theme.

The second theme (**Theme #2**) was named **Obstacles Currently Confronted by E-Government Services in Liberia**. Theme #2 involves the minor and major problems confirmed in the data analysis as well as the poor perception demonstrated by citizens of services. This theme was confirmed by four categories: *Actions Required for a Better Performance of E-Government Services*, *People's Perception About E-Government Services*, *Impediments for the Performance of E-Government Services*, and *Sustainability of E-Government Services*. In order to achieve a better comprehension of the difficulties confronted by the e-government services in Liberia, the researchers divided the theme into four (4) categories, as shown in Table 5. Figure 1 shows the number of coding references for each code based on the four categories identified.

Theme 2: Obstacles Currently Confronted by E-Government Services in Liberia	
Category	Codes
# 1 Actions Required for a Better Performance of E-Government Services	Lack of a better portal
	Inability to learn from foreign examples
	Lack of awareness
	Lack of policies / future plans
	Lack of training for stakeholders

# 2 People's Perception About E-Government Services	Mistrust
	Resistance to change
# 3 Impediments to the Performance of E-Government Services	Absence of coherence between online and physical forms
	Lack of continuity of policies at the ministries
	Early-stage of digital service
	Reasons to digitized services
# 4 Sustainability of E-Government Services	Absence of leadership
	No system maintenance plans
	Inadequate budget

Table 5 Theme #2 Obstacles Currently Confronted on E-Government Services in Liberia

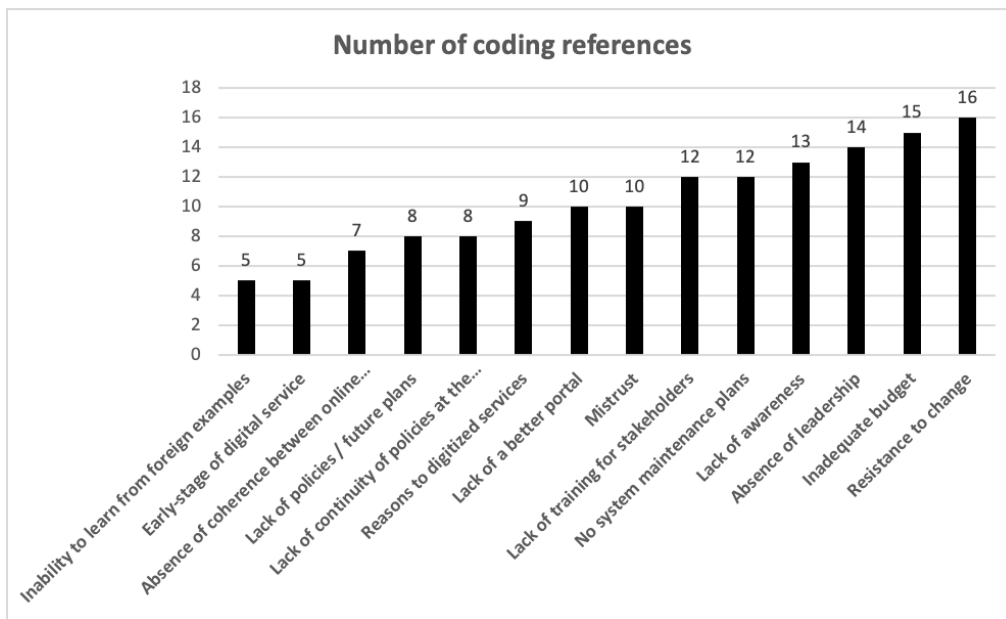


Figure 1 Theme #2 frequencies of codes

Indeed, theme #2 showed that there are some minor issues that can be immediately addressed to improve the performance of e-government services. However, the researchers also confirmed the existence of two major difficulties that will need to be addressed to achieve the expected performance on digital services.

Some of the minor inconveniences detected included the need for a better portal and the necessity to create national policies for digital services, their use, and commitment. Plans are in place to guarantee the future of digitalized services, and foreign country examples are claimed as a way to learn. However, an aspect that involves great importance is the need for training the stakeholders in the basics of the Internet and virtual services. Indeed, it seems that even the stakeholders do not possess the knowledge to recognize and assess the importance of digital services in modern life. If stakeholders do not possess the necessary knowledge to evaluate the importance of digital services, much less can be expected from

ordinary citizens. Another aspect that is also important for the researchers concerns the manifested necessity to raise awareness regarding the importance of having some digital literacy education. It is essential for GOL to engage in a wide-range campaign of information that would seek to reach both the stakeholders and other officers of the government and the general public.

The participants mentioned that the absence of leadership is a major contributor to the challenge of lack of sustainability in the digital services. They mentioned that leadership plays the most important role in the complex process of improving and extending the e-government services in Liberia.

It was reported by the participants that the absence of sustainability betrays the commitment given by GOL to maintain the online services that are already in place, as well as extending these types of services to other components of the government that deserve to be digitised. They believe it is necessary to allocate monetary resources that guarantee the sustainability of digital systems that are already in operation, keeping in mind that any future virtual service is likely to need funding as well.

Finally, inconsistencies were observed to often occur between physical and virtual forms that need to be filled in order to access most governmental services in Liberia. This situation does not encourage the development of the trust and confidence that users of such services should develop. Indeed, virtual services do not provide a well-balanced experience leading to the poor perception that citizens hold regarding these services. For example, it was reported that repeatedly, citizens found that the fulfilment of forms became difficult because new forms or procedures are implemented without updating them digitally. Consequently, people filled in the digital version of an outdated form and when they submitted their requests, these are rejected. Therefore, rather than accepting these services, citizens rejected them and opted for traditional manual ways to access government services.

It is important to keep in mind the issues mentioned above and the difficulties because they undoubtedly affect and diminish the public's perceptions of digital services. Public perceptions refer to both common citizens and stakeholders and officers that work in the government because participants were of the view that mistrust was demonstrated by the majority of people who were asked to use any online service. In this regard, the public perceptions against digital services in Liberia qualify as being mistrusted and resistant to change.

Theme #3 Proposed Solutions to Improve the E-Government Services in Liberia implies a discussion about public literacy and education and will be developed in the next paragraphs. Table 6 presents the category and codes for Theme #3.

Theme 3: Proposed Solutions to Improve the E-Government Services in Liberia	
Category	Codes
Literacy	Training
	Computer Literacy

Table 6 Theme #3 Proposed Solutions to Improve the E-Government Services in Liberia

The problem of the limited knowledge regarding computer and Internet fundamentals that was manifested among the citizens of Liberia must be addressed from different perspectives. Indeed, one perspective consists in developing education at an early age, even in elementary school. Participants proposed that this type of knowledge needs to be part of the initial education of children in Liberia.

It is also known that some effort is being made at the high school level; however, it is necessary to develop a curriculum in which the subjects and content related to Internet and computers are included. Similarly, it is observed that Liberian youth use digital services with more confidence than their seniors, given that they are already familiar with cellular phones.

The findings from the analysis of the focus group discussion revealed GOL IT practitioners are eager to have a holistic understanding of the factors that affected the previous e-Government strategy and what can be done to ensure any new revised and refreshed strategy does not face the same challenges.

5 DISCUSSION

This section discusses the barriers of e-government implementation in Liberia based on the analysis of data collected through the focus group discussion. In the literature review, the challenges faced by African countries implementing e-government were identified. Referring to research by Glyptis et al. (2020) and Nkohkwo and Islam (2013), these challenges can be grouped in the following categories: Human Factors (H), Infrastructural Factors (I), Socio-Cultural Factors (S) and Political Factors (P) as shown in Table 7. The theme #2 categories and codes are mapped to the four categories to summarise the challenges to e-government services in Liberia. Theme #2 is selected because it aligns with the research question (a).

Theme: Obstacles Currently Confronted on E-Government Services in Liberia		
Category	Codes	Factors Affecting E-

		Government Implementation in Liberia			
		H	I	S	P
Actions Required for a Better Performance of E-Government Services	Lack of a better government portal		X		
	Inability to learn from foreign examples			X	
	Lack of awareness	X			
	Lack of policies / future plans				X
	Lack of training for stakeholders	X			
People's Perception of E-Government Services	Mistrust	X			
	Resistance to change	X			
Impediments to the Performance of E-Government Services	Absence of coherence between online and physical forms		X		
	Lack of continuity of policies at the ministries				X
	Early-stage of digital service				
	Reasons to digitized services	X			
	Absence of leadership				X
Sustainability of E-Government Services	No system maintenance plans		X		
	Inadequate budget		X		

Table 7 Obstacles Currently Confronted on E-Government Services in Liberia

Human Factors: From this research, it was identified that there are several e-government services available in Liberia some of which include government job application, e-birth certificate application, passport application, payment of taxes, Integrated Financial Management Systems (IFMIS), e-work extension permit application and e-visa application. Even though there are several e-government services offered by the government of Liberia, the use of the services offered is reasonably low, and the use is not increasing as expected. From the perspective of the IT professionals, the major reason for Liberians not using the e-government services is the perception towards them. The major barriers are mistrust and resistance to change. The IT professionals further indicated that many people in Liberia do not trust the security and reliability of Information Technology (IT) usage.

On the other hand, the cause for the resistance to change is believed to be because of the culture and values of the people in Liberia. In the literature reviewed, these issues were categorized as human-level limitations, which include lack of awareness, low citizen participation, inadequate training and skill development, unavailability of learning material, gender inequality, and lack of user trust in technology (Adeyemo 2011; Alshehri and Drew 2010; Bwalya 2009; Bwalya and Healy 2010; Dada 2006; Olumoye and Govender 2018; Schuppan 2009; Schwester 2009). The research confirmed all these including the issue of fear of and resistance to change. This was the most frequently recurring issue (as shown in Figure 1) in the focus group discussion. Resistance to change has been extensively discussed in e-government studies (Lam (2005), Ndou (2004) and Carbo and Williams (2004)) while

Nograšek (2011) considered resistance to change as the biggest barrier to implementing e-government.

Socio-Cultural factors: The civil war and recent Ebola outbreak have created severe human capacity gaps in Liberia, stymying the government efforts to improve ICT access. The Government has made some attempts to operate within these constraints, as well as to improve capacity. Key to this is the development of centralised capabilities as the new approach adopted to provide services across all of government. This means the scarce human and institutional resources are to be identified and pooled, providing opportunities for generating efficiencies and for reducing the vulnerabilities of smaller MACs.

Currently, the skilled technical personnel are spread across GOL and tasked to a single MAC, often with little authority to bring about reforms even within their institutions. The Ministry of Post and Telecommunications (MoPT) has traditionally focused primarily on the postal aspect of its mandate rather than ICT. The Ministry has not exerted its authority as the Ministry in charge of government ICT, which may explain why MoPT has not been able to win the necessary resources and marshal the energy required to change government thinking.

Comments from the participants also suggest there is a digital divide problem, with the citizens' lack of knowledge and computer skills as the main obstruction, and lack of computers and high-speed Internet in government ministries, agencies and commissions. This issue has been asserted by previous researchers (Cubitt 2014; Krishnan et al. 2013; Olumoye and Govender 2018; Rothstein 2011).

Political Factors: Politically, GOL has not prioritised ICT in its budget. The government is in a time of extreme austerity thus affecting spending priorities, leaving very little funds for ICT related expenditure. The GOL looks to the international donor community to resource ICT investments. The donor community is also challenged with its funding of ICT. Donor investments can encourage a silo-based approach to ICT investment, which is at odds with GOL policy to have a “whole-of-government” approach, the objective of e-government.

The senior leadership in the MACS often do not understand nor see value in ICT investments. Whereas larger MACs (e.g. Ministry of Health, Ministry of Finance and Development Planning, Ministry of Education) have an institutional capability that extends

beyond its leaders, and so may still be able to pursue ICT-based improvements, much of the initiative for ICT investment in smaller MACs is stifled by this leadership disposition.

Leadership plays a crucial role in championing new technology. It was confirmed in the focus group discussions that without a champion, change was impossible. The need for strong leadership is asserted by Cecchini and Raina (2004) who mentioned that in e-government projects, the local administrative and political machinery needs to be involved in the implementation of the project, otherwise the chance of failure is almost certain.

Infrastructural Factors: Liberia's civil war, which ended in 2003, destroyed much of the country's power sector and ICT infrastructure. With access rates at approximately 12 per cent, Liberia's population has one of the lowest electricity saturations in the world. In the capital city of Monrovia, less than 20 per cent of the population has access to electricity.

The government in July 2017 as part of Liberia's 170th Independence celebrations signed an agreement with CSquared and USAID to bring best-in-class, reliable, affordable broadband infrastructure to Monrovia. Liberia is one of the least connected countries in the world, with only 5 per cent of citizens able to access the Internet. The partnership builds on CSquared's proven experience in designing and building shared metropolitan fibre infrastructure in the African cities of Kampala and Entebbe in Uganda, and the cities of Accra, Tema, and Kumasi in Ghana. The Government of Liberia has identified increasing fibre infrastructure as a vital part of its economic stabilisation and recovery plan.

5.1 Answering the Research Question and Sub Questions

What are IT practitioners' views of the factors that affect e-government implementation in Liberia?

- a. From the perspective of government CIOs, why do e-government projects in Liberia fail?*
- b. How can existing e-government implementation approaches be improved to ensure eInitiatives are successful?*

In answering part (a) of the research question the CIOs from the GOL MACs are convinced that e-government projects in Liberia fail because of lack of strong technology infrastructure. They also believe e-government goes beyond technology and that it is a government issue so therefore requires implementation of policies and laws to support e-

initiatives. Lastly, the lack of skilled IT personnel to implement and maintain ICT infrastructure is a major challenge.

They suggest the government needs to put in more effort to address the Human, Socio-Cultural, Political and Infrastructural factors. In summary, the information gathered in this research indicates that e-government has the potential to transform traditional governance in Liberia. The e-Government program in Liberia is at its formative stage.

In answering part (b) of the research question, in order to improve e-government implementation in Liberia, the GOL must ensure the following:

1. The GOL should dedicate resources towards facilitating the adoption of e-government services to the public by organising awareness campaigns and workshops to ensure that the citizens are accustomed to the various aspects of the e-services. This will encourage uptake of existing e-government services.
2. The GOL should prioritize investing resources towards devising a national-level plan for the development and promotion of a centralised and digitised e-Government portal, that would be able to facilitate communication and coordination between the different departments of the government, as it would not only help Liberian citizens, but it also streamline the various internal processes within the Liberian government.
3. The participants in the focus group discussion mentioned the lack of effective funding which is hindering the development of ICT in Liberia. The government must form a positive approach to financing ICT by creating an “ICT Donor working group” to centrally manage investment made by the donor community in ICT. This will prevent the duplication of systems and also avoid the proliferation of silo ICT systems which defeats the purpose of e-Government.
4. The Government of Liberia has identified ICT as core to its strategy for enhancing public service delivery, employment creation, and national growth. This is clearly enshrined in the new National Telecommunication and ICT Policy (2019-2024) which has been approved by the cabinet. In keeping with the National ICT Policy, a Program Management Office (PMO) is mandated to monitor, evaluate and supervise the implementation of services designated under the National ICT policy and e-Government strategy. It is important that the PMO to be staffed with professionals with proven capacity in areas such as MIS, project management, service management,

change management etc. The PMO is necessary to ensure that scarce GOL ICT resources are efficiently utilised and distributed. Currently, many MACs in Liberia do not have effective ICT support. Therefore, in developing e-government, this Office plays a critical role in balancing the needs of the agencies and the central government-wide needs when comes to skills and funds allocation.

6 CONCLUSION, RECOMMENDATIONS AND FUTURE WORK

This research has sought to show that there has been some progress in the development of e-government services in Liberia. However, the government is struggling to implement e-initiatives. The authors mapped the responses from the GOL MAC IT professionals to the following factors: Human, Socio-Cultural, Political and Infrastructural. In this paper, these factors have been fully discussed.

This research contributes substantially to the e-Government program in Liberia, as well as contributing to knowledge on e-government implementation in sub-Saharan Africa. Furthermore, the research provides an analysis to assist GOL to overcome the challenges the country is currently facing in implementing e-government initiatives. Various countries may have their distinctive difficulties; therefore, it is important for policy-makers not to assume that all countries face generic e-government challenges. However, a careful review of the literature shows that most e-government challenges fall in the broader factors identified in this study. The results of this study show that mistrust, resistance to change, digital divide, lack of a political champion and infrastructural constraints are the main challenges facing the implementation of e-Government in Liberia. These challenges have been grouped in four (4) distinct factors, i.e. Human, Socio-Cultural, Political and Infrastructural factors.

6.1 Contribution to Theory

This study contributes to theory by supporting the classification that was proposed by Nkohkwo and Islam (2013), where they grouped challenges on implementing e-government in SSA into six (6) aspects: Financial, Infrastructural aspects, Human aspects, Political aspects, Organization aspects and Social Cultural aspects. Although two of the aspects (i.e. Financial and Organizational) were not captured in this research as themes, they were recorded as categories under broader themes: Infrastructure and Human.

The study is also consistent with findings from Glyptis et al. (2020) and Savoldelli et al. (2014) by confirming most of the factors that influence e-government implementation.

6.2 Conclusion and Future Work

In conclusion, it is imperative that the Government of Liberia take heed of some of the concerns and challenges highlighted in this research and actively work towards implementing the recommendations prescribed in this research. The findings of this research confirm the e-government challenges identified by Gilbert et al. (2004); Ifinedo (2006); Jaeger and Thompson (2003); Ndou (2004). Human and Infrastructure factors have been regarded as the most important factors affecting e-government implementation in Liberia. This perhaps can be attributed to the 14 years civil war in Liberia which had adverse effects on infrastructure and caused migration of skilled labour.

As future work for the authors, the next step involves surveying citizens to gather their perspectives on the implementation of e-Government initiatives in Liberia.

6.3 Limitations

This study employed a qualitative research methodology to explore the factors affecting e-government implementation in Liberia. The study was conducted from the perspective of the government senior IT practitioners who have observed the e-government services in use. Although they are citizens and potential users of the services, they are not necessarily typical of the broader community given their experience and expertise in ICT. In order to gain valuable insights regarding the overall workings and quality of e-government services in Liberia, there is a need for inclusion of viewpoints from a diverse group of individuals. Therefore, future studies should incorporate findings from the citizens of Liberia as well as policy-makers, and government officials.

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