Exploring the efficacy of e-government models through information systems management-case of The Gambia

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ABSTRACT

Research on e-government initiatives is now an important area of research in the field of Information Systems. This thesis conceptualizes e-government has the process by which government agencies deliver services to citizens through the use of Information Communication Technology (ICT). Despite the large body of evidence that proves the benefits of electronic, governments and citizens still encounter problems following increased digitization of government services. Remarkably, the kind of challenges associated with increased adoption of e-government are different depending on whether the target country is developing or fully developed. This study has explored the quality of e-government services according to the perceptions of Gambian citizens. Specifically, the current study aims to examine and describe the effects of e-government services quality on citizens' faith in e-government and their willingness to continue using the system.

Data was gathered utilizing an online survey managed through random citizen of Gambia individuals. Bartlett's test was also utilized to look into and determined how two variables and strongly related. Most Gambians are ignorant of Gambian e-Government programs, according to the survey. As a result, they had no idea of the government's e-government initiative. According to the findings, the Gambians have confidence in e-government services. According to the findings, the present government procedure has to be redesigned.

E-government, according to the findings, is critical to the fight against corruption. In the research, it was determined that e-government transactions are error-free. E-government in Gambia seems to be reducing the frequency of in-person visits to government offices, according to the data.

Keywords: E-government, ICT4D, ICT infrastructure, Government Operations ,The Gambia

CHAPTER ONE

Introduction

The proliferation of information technology has been a significant boost to the development of modern society in general and public administration in particular (Madon, 2009, p. 53). Information technology has led to new ways for people to interact with each other, including e-government services that provide online access to government agencies' resources. E-Government is the use of internet technologies such as websites, electronic commerce (e-commerce), and computer networks to conduct business more effectively and efficiently with its citizens or customers (Grönlund & Horan, 2005, p. 1). It also refers to government services delivered via electronic means rather than on paper or orally from an office or shop front. In many countries, it includes all forms of interaction between citizens/customers and public sector employees/representatives, which occur electronically using ICTs (Information Communication Technologies). In most implementations, e-government services have been shown to improve service delivery and citizen participation in governance, thus encouraging an open democracy (Madon, 2009, p. 53). This paper seeks to explore the efficacy of e-government models through information systems management in The Gambia.

Background

E-government is defined as the use of technological communication devices, such as computers and the internet, to deliver public services to citizens and others in a nation or territory (Kitaw, 2006, p. 2). According to Grönlund & Horan (2005, p. 2), the first e-government services were introduced during the early 1990s in advanced nations such as the United States. However, like much of the business world, the federal government, until the 1990s, did not use information technologies to automate customer-facing operations or service delivery, and instead much of the emphasis was placed on backroom operations such as data

management (Grönlund & Horan, 2005, p. 3). This redundancy can be attributed to the fact that access to internet devices was still limited. Most governmental agencies did not have the necessary resources to conduct online services. However, with the increasing adoption of information technology across the public sector, government agencies worldwide have offered a variety of e-services that have improved public sector activities and service delivery (Kitaw, 2006, p. 1).

Today, the widespread adoption of information technology has revolutionized governments worldwide in their operations. The traditional way of running a country is being replaced with a technology-driven administration. The internet has been identified as the most effective means of bringing governmental activities to the public, and the Gambian government is no exception (Botchway et al., 2016, p. 395). For instance, in advanced nations such as the United States, most government activities are now being carried out online to ensure transparency, accountability, and effective service delivery. This transition, in turn, led to the increased adoption of e-government as a strategy for improving public sector activities. E-government performance improvements are believed to be mainly attributable to its enhanced ability to provide citizens or customers with anytime-anywhere access to services such as online payment of taxes, licenses, and fines (Madon, 2009, p. 53). This feature, in turn, helps improve customer service, reduce costs for agencies, including increasing citizen participation in governance; and other related benefits.

In the African continent, the Gambia was one of the first countries to embrace e-governance after being selected by the United Nations Economic Commission for Africa (UNECA or ECA) to implement e-governance in the region (Chango, 2007, p. 387). The Gambia is one of the smallest countries in mainland Africa with around 1.8 million populace (Nyoni, Mutongi, and Munyaradzi, 2019). Besides its narrow 50-kilometer coastal stretch on the Atlantic Ocean, much of the country is landlocked. The capital city, Banjul, is located on

St. Mary's Island in the Gambia River, which flows into the Atlantic at the same point. According to the World Bank, the country's gross domestic product (GDP) is around US$ 2,240 per capita, with the majority of its people living in poverty (World Bank, 2020, p. 2). The literacy rate in the Gambia is 63.9 percent for males and 47.6 percent for females (World Bank, 2020, p. 2).

Even though the adoption of e-government in Africa occurred much later, the continent has increasingly embraced this new force of public service delivery. According to Heeks (2002, p. 97), e-government occurred in Africa more than two decades ago, though it is essentially an imported concept. As a result, the researcher noted that it has been challenging to define e-government in Africa, given various countries and their wide range of income levels (Heeks, 2002, p. 97). Thus, while countries in the African continent, such as the Gambia, continue to implement e-government initiatives, there is a need for studies that can help improve implementation to ensure that benefits are realized.

Rationale

As global populations continue to rise and delivery of government services become more complex, the need for strategies that ensure effective service delivery, such as e-governance, has become more pressing. However, it is also not easy for most nations to implement E-government initiatives given the resource and technology constraints they face (Heeks, 2002, p. 94). In the Gambia, for instance, the country has been going through a transition period from a dictatorial government to a democratic nation. Therefore, it poses a challenge for the government in the provision of public services. There is a need for studies that can help examine e-governance initiatives and make recommendations on ways to improve them in improving service delivery.

Apart from the challenging political situation and the lack of resources, Bojang (2021, p. 39) found that the Gambia e-governance initiatives also face a lack of awareness among stakeholders and low availability of crucial information on government websites. Also, poorly designed and problematic to use government websites, lack of up-to-date information, and more importantly, lack of prompt government response to user concerns challenges the initiative. For the Gambia to achieve optimal use and adoption of e-governments services, it is necessary to explore the factors that influence the public acceptance of online services to identify ways to do this.

Yet despite the growing need for research in the role of e-governance in assisting the Gambian government to achieve its objectives, there is very limited research in this area. Specifically, despite the increased opportunities for the adoption and use of e-governance, the current literature on the Gambia is not sufficient enough to provide context-specific issues that the government's efforts towards enhancing its ability to be more effective and efficient through e-governance (Ceesay & Bojang, 2020). In this regard, the current study explored the quality of e-government services according to the perception of the Gambia Citizens. Precisely, it investigated the factors that affect the current e-government service model and help the Ministry of Communication and Infrastructure in improving a better service delivery. To achieve this, the researcher used available data on the internet to gauge the rate of internet accessibility and sharing of information on the internet (Sassi, 2006). The researcher collaborated with the government to review available records on the Model's efficiency in creating desirable results for the government. Auditors from the Central Bank of the Gambia and the ICT personnel in the Ministry of Information and Communication Infrastructure were also influential in determining the success of the Model (Farrell et al., 2007). The results of the study have the potential to help policymakers, public administrators, those interested in public

administration and governance, and other stakeholders in the Gambia to understand better how e-government initiatives can be improved to ensure better control and public service delivery.

While the Gambia like most west African nations have shown willingness to adopt e-governance as a means of enhancing serviced delivery, they are not only limited by late adoption but also poor infrastructure that still requires significant investments. However, despite these issues, the Gambian government was one of the earliest adopters of e-government in the west African region and has achieved impressive results when compared to its neighbours in the region.

Aims and Objectives

As previously noted above, even though e-governance has become helpful in improving service delivery, ensuring successful implementation remains a crucial challenge for developing countries like the Gambia. The present study aims to assess the quality of e-government services in The Gambia according to citizen perceptions. Specifically, the study sought to help The Gambia Ministry of Information and Communications Infrastructure enhance the performance of the e-government through investigating the efficiency of its ICT4D Models. The study also used readily available data to assess internet accessibility and sharing of knowledge on the web. The researcher worked with the government to examine accessible records on the model's effectiveness in generating desirable outcomes. It also aimed at identifying challenges that hinder effective implementation and utilization of ISM within public organizations to suggest improvement solutions.

Objectives

- To compare the Government service quality before and after the implementation of e-government.
- To analyse the current e-government model use and find gaps/weaknesses.

To effectively achieve the above objectives including identifying gaps or weaknesses, the researcher compared the current e-governance implementation to the four key objectives of any governance initiative, service delivery to citizens, transparency and accountability, empowerment of people through information, and improved efficiency within government agencies and businesses. As such, the first step was to examine how the current e-governance in the Gambia can be enhanced to ensure improved service delivery to citizens. According to Chango (2007, p. 1), the quality-of-service delivery is one of the main defining factors of an effective e-governance model. This is because it affects the ability of governments to effectively deliver desired outcomes that are based on the public's expectations. More specifically, Kebbede (2018, p. 22) noted that *"service delivery has become a critical factor in measuring government performance and citizen satisfaction"* (Madon, 2009, p. 53). One of the main objectives of this study is to assess the quality of e-government services and compare the results with other nations to determine the overall effectiveness of the current model.

The second step was to examine the transparency and accountability brought about by the current e-governance model. As previously noted, one of the critical benefits of e-governance is that it can improve the accessibility of public information, thereby enhancing the level of accountability in government institutions (Heeks, 2002, p. 99). According to the World Bank (2010), governments can use e-governance to make information more easily accessible and ensure citizens have a better understanding of available public services. However, problems with transparency remain a challenge in most countries with low levels of e-governance adaptation since most public records are paper-based and therefore cannot be accessed with ease. The study assessed whether this objective had been achieved in The Gambia e-governance model because it is a crucial indicator of e-governance success.

The third step was to examine the ability of the current e-governance model to empower people through information. This step is necessary because e-governance is all about

encouraging the participation of citizens in decision-making. Therefore, having access to up-to-date and accurate information that ensures effective decision-making among the people is an essential indicator of a good e-governance model (Bojang, 2021). The fourth step was to determine whether the current e-governance model has improved efficiency within the government and its different agencies. One of the critical benefits of e-governance is that it reduces paperwork and improves communication between various governmental agencies, which helps improve the overall efficiency of service delivery (Heeks, 2002, p. 99). As such, by identifying areas that have achieved improved efficiency and those that need adjustment, the current study provides critical information that will help improve the Gambia's future e-governance initiatives. Finally, we aim to assess whether the current model has improved government interface with business and industry.

Research Questions

1. Has the service quality enhanced after implementation of the e-gov? If yes, which aspects?
2. How effective is the current e-government model (ICT4D) used in improving information system management in The Gambia?

Dissertation Structure

This section provides a detailed overview of the different areas of the current study. The introduction chapter, as shown, presents the core research questions, objectives, and aims of the study. This section is followed by a literature review, which provides a brief description of the historical, political, and economic landscape of The Gambia and a conceptual understanding of the e-governance model. The background also discusses the history of e-governance and its impact on politics, economics, and society. This section is followed by a brief analysis of the literature review, which presents relevant literature from different

disciplines such as information studies, communication theory, political science, and public administration, providing a proper understanding of the study topic. In addition, it also includes a comparative analysis with other e-governance models in different continents and some of the challenges developing countries like The Gambia face when implementing e-governance initiatives. The background section is followed by the study's rationale, which presents the need for this research project. The rationale section is followed by a literature review section that provides a critical analysis of studies published in the past five years on e-governance and related concepts such as transparency, accountability, empowerment, and information quality.

This part is followed by an overview of the research methodology, which explains how data were collected, analysis methods, and validity approaches used in this study. The methodology section is followed by the results section, which discusses the research findings and provides proper analysis and interpretation of the data collected. In this section, the researcher discusses the overall conclusions of the study across all four key objectives. Finally, this section concludes with a discussion of the overall findings and new contributions to knowledge for future research. The results section is followed by the discussion section, where the researcher provides a detailed analysis of the findings, limitations, and recommendations for future research. Overall, this section highlights the novelty of the study and its significance to other researchers in this area. The discussion section is followed by the conclusions, which summarize all findings across different sections of the dissertation. Based on these results, the dissertation conclusion provides a summary of the study. It draws implications for government policymakers, businesses, and other stakeholders in The Gambia or any other developing country that wishes to implement an e-governance model that promotes public participation and enhances transparency, accountability, and efficiency within civil service institutions.

CHAPTER TWO

Literature Review

Introduction

Although there is a growing awareness of e-governance in the modern era, much of the world still cling to paper forms and outdated technology (Dahiya, 2019). E-governance may be more crucial than ever for emerging economies, given their lack of an established bureaucracy. However, while studies have over the years demonstrated the significance of e-governance in enhancing, even the most developed emerging economies have failed to implement e-governance at a significant level. As discussed in a recent paper by Mr. Stephen Buchanan and his co-authors, some of the reasons for this are the subordinate role of the private sector in the emerging economies, the lack of significant levels of literacy, poor technical capacity, and governance reform failures (Buchanan-Clarke & Mashingaidze, 2021). To succeed in e-governance, the government needs to have a robust technological backbone, have a competent information technology department, and have a world-class technical workforce (Schuppan, 2009). Also, the government should have a proficient vendor selection process, have a complete focus on technology as a driver of growth, and have clear objectives on how such systems will be implemented and used to improve service delivery (Hooda Nandal, & Singla, 2019). This section outlines a literature review that identifies some of the critical barriers to e-governance in emerging economies. We start by discussing the concept of e-governance and why governments struggle with e-governance projects. This is followed by technology use in government and how it has changed over time. We then discuss the different models of e-government including the strengths and weaknesses of each model. The next section outlines an overview of literature on the challenges of e-government including the most common issues faced by e-governance projects in developing nations. We then conclude by providing a summary of the key findings of this literature review.

The Concept of E-Government

One of the key issues that governments struggle with when implementing e-governance projects is the lack of clarity on the concept of e-government. According to Aldrich, Bertot, & McClure (2002) who examined the implementation of government initiatives and issues associated with such projects, what is lacking is the consideration of e-governance in a more in-depth manner, particularly regarding the political aspects of e-government, including a broader recognition of the complex institutional and political environments. As a study that was based on reports and outcomes of different governance symposiums, the findings demonstrate that while e-government has received significant attention from researchers over the years, the political processes behind such initiatives, which are crucial for understating the relationship between administrative aspects of the government and technology are not well understood (Aldrich, Bertot, & McClure, 2002). According to the researchers, developing a clear understanding of the concept of e-government requires Identifying not only the stakeholders involved in the interactive political dynamics around technological use in government but also the difficulties associated with such interactions and, more importantly, the political, economic, and social realities associated with e-governance (Aldrich, Bertot, & McClure, 2002).

However, according to Yildiz (2007, p. 3), there is no universally accepted definition of the concept of e-governance due to the wide variation in the use cases and nuances associated with e-governance. This literature review study examined the implementation and characteristics of Information Technology use in emerging economies to identify the limitations of the concept of e-government and the different definitions associated with it. They found that while e-government can be defined as the utilization of the internet and similar communication technologies in the delivery of government services and information to its citizens, it is also characterized by other use cases such as the use of the world wide web to

store, network, track and automate different government services designed to enhance service delivery (Yildiz, 2007, p. 4). A major strength of the study is that it helps provide a comprehensive understanding of the subject by drawing supportive information from different the outcomes of research initiatives. For instance, Fountain (2004), also supports the above findings, by preferring to call it virtual state or digital government rather than e-government. This suggest that the findings of Yildiz (2007) are not only comprehensive but also congruent with those of other researchers due to the literature review methodology.

On the other hand, Means et al. (2000, p. 120-121) defined e-governance as the association between the citizens and their government facilitated through electronic communication. This suggests that the main aim of e-governance is to enhance communication between various levels and branches in the government. This opinion also emphasizes those aspects that ensure effective, efficient, and inclusive distribution and the exchange of information across systems for better efficiency (Yildiz 2007). Similarly, Fang (2002, p. 1) defined e-government as using the most effective and innovative information and technologies by governments to provide their citizens and business with services and opportunities. As with most researchers, Fang (2002) believed that the application of the concept of e-government offers one of the biggest opportunities for governments to deliver the highest quality of service in a cost-effective and friendly way to their citizens. AS an integrative review, one of the key strengths of this study was the identification of gaps in e-governance literature at the time lack of clear definition and centricity of certain models that continue to present issues for emerging economies like the Gambia. Thus, highlighting such issues not only highlight the need for more research but also enables project leaders to develop effective strategies that ensure successful e-governance implementations.

Technology Use in Government

Even though the use of technology in the delivery of government services has become a common practice today, early studies often view the effective use of technology in government as a peripheral concern instead of a central management function. Simon (2013, p. 286), for instance, has examined the organizational behaviors of governments since the 1970s and noted that technology use in government during the early days was often considered as a means to address the limitations of the government, including the use of data to enhance decision making. In essence, before the introduction of the internet and widespread adoption of personal computers, technology in the government was often seen as a means of increasing managerial efficiency and productivity (Simon, 2013, p. 287). Additionally, since technology in government was mainly used for automation of mas transactions and repetitive tasks, Zuboff (1988, p. 26) noted that government I.T. professionals and similar personnel were often isolated from crucial decision-making activities. Due to the increased adoption of personal computers since the 1980s, this view of technology use in government had a significant impact on the early adoption of e-government as technology increasingly became a central part of government agencies.

In addition to e-governance becoming a central part of modern governments, researchers have also expressed safety concerns associated with the increased sharing of information through e-governance. For instance, Jaeger (2002) examined the relationship between e-governments and constitutional principles such as federalism and separation of powers. This was a review study in which the researcher provided a historical background of these constitutional principles, then discussed the potential implications connected with e-government under federalism. This perspective used to understand the idea of regulation was significant because it serves as integration between technology and other government functions (e.g., law enforcement). Jaeger concluded this study by identifying several key factors which

affect how governments would regulate their citizens using electronic service delivery systems, including scope or oversight authority.

Findings showed that extensive information sharing and cooperation between different government agencies facilitated by e-governance could put at risk some constitutional principles such as separation powers and the balance and distribution of capabilities (Jaeger (2002, p. 357). This is mainly a significant concern for emerging economies such as the Gambia, transitioning from a dictatorial regime to democratic governance. Specifically, the increased sharing of information brought about by e-governance could potentially increase corruption and political instability, which are major systemic issues in the Gambia. This, in turn, may affect the adoption of such projects as stakeholders consider them a threat to the Gambia's stability. A key strength of the study is the generalizability of findings as the data collection was geared towards the international community rather than a specific country.

E-Government Models

Due to the efficiency and cost-effectiveness of information technology, most governments today strive to improve the development of information and communication technologies to enhance service delivery and boost the economy. However, the implementation of e-government projects requires the use of tried and tested models because how E-Governance is implemented will profoundly affect the benefits that emerge from such projects. In particular, governments need to select a suitable model when implementing e-governance projects since this will determine the level of benefits realized by the end-users and the cost and other important factors (Andersen and Henriksen, 2006, p. 239). It is vital to have a thorough understanding of E-Governance, including specific models applicable to the target population, to overcome many of the barriers that prevent governments from realizing their full potential.

I. Layne and Lee E-government Model

One of the most commonly used models in e-government development is Layne and Lee e-government model. This four-stage model addresses e-government maturity based on two dimensions, namely, technological or organizational complexity and integration (Chaushi et al., 2016, p. 56). Based on this perspective of e-government maturity, e-government development within the Layne and Lee model occurs in four key stages 1) the catalog stage, 2) the transaction stage, 3) vertical integration, and 4) horizontal integration. During the initial stage of this model, the government implementing an e-government project usually tries to develop an online presence. They establish online information materials such as websites and use such channels to present information to their citizens (Chaushi et al., 2016, p. 57). In the transaction stage, Layne and Lee note that the governments will usually start to move one level up by allowing citizens to transact with it through electronic means based on the previously built online presence. In the third stage, the government implementing an e-government project will usually start to integrate its services vertically by enhancing communication and transaction between different government agencies and other stakeholders.

According to Layne and Lee, it's much easier and efficient to similar functions at different levels of the government when compared to implementing such functions with the same level of government (Chaushi et al., 2016, p. 54). Thus, during the implementation of an e-government project, the government at this stage will typically enhance government-to-government (G2G) interaction which in turn allows information systems at different levels of the government to communicate with each other to become more integrated (Chaushi et al., 2016, p. 56). This, in turn, not only reduces redundancy but also increases opportunities for innovation and cost-sharing while at the same time improving the consistency of outcomes. Finally, the fourth stage of the model calls for horizontal integration of government information systems. Layne and Lee note that this is the most complex stage of the e-government

development and integration process. It requires an interdisciplinary team to fully understand e-government and address issues to ensure seamless integration (Chaushi et al., 2016, p. 56).

While this is today one of the most commonly researched and used models in e-government development, it has limitations that make it less applicable to emerging economies such as The Gambia. For instance, Andersen and Henriksen (2006, p. 239) note that the Layne and Lee e-government development model is U.S.-centric. As with any other model, the Layne and Lee model is a product of its context since much of its development derives solely from the e-government development experience in the United States. Thus, even after more than two decades since it was first developed, the model still focuses mainly on the higher level of e-government functions which most governments do not commonly achieve in emerging economies such as The Gambia (Valdés et al., 2011, p. 179). In addition to its U.S.-centric nature, the Layne and Lee e-government model also emphasizes integration. Many governments today are beyond (Andersen and Henriksen (2006, p. 245). In particular, most implementations of e-government projects, including those in the Gambia, are beyond integration and instead focus on revisions to ensure seamless operations of such projects.

II. Public Sector Process Rebuilding (PPR) Model

Public Sector Process Rebuilding (PPR) Model was developed by Andersen and Henriksen (2006). They sought to address many of the limitations of Layne and Lee by adopting a customer and activity-centric approach instead of a technological capacity approach. The model also consists of four stages, including 1) Cultivation, 2) Extension, 3) Maturity, and 4) Revolution. However, the developmental stages are categorized into two dimensions activity-centric applications and customer-centric applications. According to Andersen and Henriksen (2006), a key strength of this model is the PPR model. It expands government to focus on end-users, allowing for better service delivery and promoting democratic governance by enabling end-users to act as the motivators of change. Additionally, the model is also

activity-centric, which presents many benefits such as increased innovation, increased knowledge sharing, and facilitated end-user engagement (Andersen & Henriksen, 2006). A key strength of the study by Andersen & Henriksen is the large sample size consisting of more than 110 state agencies and countries from different parts of both developed and developing. This indicates that findings of the study are not only applicable to a wide range of scenarios but also provide more accurate overview of the suitability of the PPR model (Campbell, 2002, p. 21).

III. The Manchester e-Government Maturity Model

As with the PPR Model, the Manchester e-Government Maturity Model seeks to address e-government implementation challenges faced by initial models such as Layne and Lee. The model consists of four critical stages of e-government development, 1) information, 2) interaction, 3) sophistication, and 4) transaction. According to Heeks (2015, p. 2), who examined the strengths of this model when compared to the Layne and Lee model, one of its key strengths is that it reflects better the current global realities of e-government by separately considering information and interaction as critical aspects of e-government development. This helps ensure that the new and the emerging e-government trends and technologies are supposed to meet better the peoples', instead of lumping them together as they have been for many years. Heeks (2015) also notes that the Manchester e-government maturity model is also more effective when delinking the front office from the back office during change. This is essential for ensuring that the government remains responsive to the needs and concerns of the people by preventing its control of the front office where most citizens interact or transact with e-government services (Heeks, 2015, p. 2). A major strength of the study by Heeks et al is that the findings are not only derived from an existing model but also aims to improve the limitations of the Layne and Lee model. This suggests that the results can be easily replicated or the model adjusted to better suit the needs of a particular nation (Campbell, 2002).

E-government Challenges

As Yildiz (2007, p. 647) stated, the successful implementation of e-government projects is concerned with infrastructure and the agents and processes that can produce acceptable results within societal standards. Bojang (2021), who examined factors that affect the implementation and adoption of e-government in the Gambia, agrees that social processes such as creating awareness of such projects, including ensuring high quality of service provision, are factors that significantly influence the adoption of e-governance.

In this regard, a country's ICT infrastructure is one of the critical challenges faced by emerging economies to improve service delivery through e-governance. This is because the efficiency of any e-governance system is highly dependent on, among other things, the availability of reliable ICT infrastructures. However, the development of high-quality information technology infrastructure in emerging countries such as the Gambia still lags and has been a significant obstacle to the implementation of e-government in the country. For instance, Bojang (2021, p. 41) found that lack of adequate technological infrastructure was one of the main challenges faced by African countries such as the Gambia to increase the adoption of e-governance. A key strength of the study is the quantitative approach which can produce precise and consistent outcomes which is crucial for ensuring high reliability and validity of findings (Queirós et al., 2017, p. 3).

In addition to the issue of ICT infrastructure, human factors such as poverty present significant challenges for African nations such as the Gambia in their efforts to increase service delivery through e-government projects. Backus (2001) attributed this to the fact that the use of e-governance is partly dependent on the ability of the citizens to acquire both the hardware and software needed to access such service. More importantly, the capacity to purchase the data bundles or similar resources required to access online information. Abu-Shanab and Bataineh (2014, p. 211), for instance, found that successful implementation and adoption of e-

governance in developing countries requires reconsideration of the significance of each actor, of which the citizen is a significant stakeholder. Given the high rates of poverty and low levels of literacy in such regions, these human factors are of paramount importance for the nation as a whole, limiting the ability to develop countries to implement e-government projects effectively. A key strength of the study is the strong evaluation of scientific evidence regarding the implementation of e-governance. The study also proposes a typology (framework) that can help countries classify success factors and in turn achieve desired outcomes more effectively when adopting e-governance (Bataineh, 2014).

The successful implementation and adoption of e-government projects also depend on the type and nature of the government. García-Sánchez et al. (2012, p. 11), for instance, examined the determinants of e-government development, including some of the challenges faced by project leaders, and found that there is a strong relationship between government effectiveness and optimal adoption of e-government services. The researchers sampled about 192 countries from a 2008 United Nations e-government survey study. The Web Measurement Index was used as the primary variable to measure e-government development for each selected country. Findings from the countries analyzed indicated that lack of government effectiveness was one of the main challenges faced when implementing e-governance projects (García-Sánchez et al. (2012, p. 11). For instance, results showed that large and functional governments had a higher propensity to adopt e-governance projects since they are more capable of providing the resources and personnel needed to achieve the desired outcomes when compared to small governments. As an experimental study consisting of more than 192 countries, one of the key strengths of the study is the large sample size that improves the generalizability of findings (Campbell, 2002). The quantitative nature of the study also limits the risk of bias thereby ensuring precise and consistent results that can be easily replicated (Queirós, et al., 2017 p. 19).

Summary

Within the existing literature, the findings of this review show that e-governance despite having been existence for more than three decades is still a challenging concept. In the context of developing countries like the Gambia, this is particularly a major challenge since most commonly e-governance models are based on developed nations such as the United States. Thus, without adopting the right model, developing nations such as the Gambia are less likely to achieve the desired outcomes despite opportunities to improve service delivery through e-governance. ICT adoption, for both public and private sector players, will play a vital role in realizing the potential of e-government. However, to ensure that the Gambia achieves optimal adoption, other challenges that need to be addressed include poor ICT infrastructure, lack of effective leadership, human factors such as poverty and low literacy, and lack of commitment from the government.

Aims and Research Questions

In this study, we sought to examine ways in which e-government adoption can be improved in the Gambia to assist the country in improving service delivery as it transitions from a dictatorial regime. Specifically, we examine how e-government could be realized in the Gambia, including its potential contribution to its growth and development. To this end, we aim to answer the following questions.

1. Has the service quality enhanced after implementation of the e-gov? If yes, which aspects?
2. How effective is the current e-government model (ICT4D) used in improving information system management in The Gambia?

CHAPTER THREE

METHODOLOGY AND METHOD

Introduction

Several factors affected the researcher's decision on the most appropriate method for this investigation. First, the notion of ICT4D is still relatively new in Gambia. As a result, rather than being predefined, the real essence of what interviewees and other information sources inferred had to be deduced. Secondly, the author expected to face data access issues, particularly from government agencies. The third goal of the research was to uncover Gambian-specific concerns. As a result, the researcher concluded that using the Grounded Theory Approach (GTA) is an appropriate technique for this investigation (Holton, 2019). By following a series of methods, a researcher may inductively infer insights from data (Holton, 2019). This was accomplished in this research by data coding that was explicit, targeted, axial, and precise. This method assisted in the exploration of the backdrop, as well as the identification and interpretation of potential subcategories. This method proved effective in bringing forth important data insights.

Data was gathered from a variety of sources by the author. ICT professionals, non-ICT professionals, and regular ICT users are all included. Observational data was also gathered, and numerous documents were analyzed by the researcher. ICT specialists contributed their knowledge of how ICT is now used in infrastructure projects to this study. They also discussed potential enablers and barriers in putting ICT projects in place in the nation. Referential knowledge on ICT4D in Gambia was obtained from other sources. Experts and consumers' concepts were gathered via interviews, seminars, and focus group debates. Surveys were made on-site inspections to Gambian metropolitan locations by the researchers. A top government conference at a main state office was also attended by the researcher. At the start of the research

and during the conclusion of information gathering, literary works sources like policies, studies, and other documented verifiable evidence were analyzed. Focus group debates were crucial in discovering and addressing new concerns and clearing uncertainties, whereas interviews were important for obtaining personal stories of participants.

To provide documented and chronological evidences, the researcher explored literature-based publications. Current ICT4D analyses are mostly diagnostic or descriptive in character, therefore a better understanding of just why ICT functions in developing nations requires more research (Lin, Fofanah & Liang, 2011). A study by Walsham (2017) found that ICT alone can never lead to development on its own; it must be employed by players in a specific social, geopolitical, economic, and technological framework, under the parameters that exist at the time. According to Unwin (2017), in each particular development environment, the interrelationship from the above variables is dependent on molecular principles, which may elucidate why or how ICT contributes to progress. As a result, it is critical to look into the processes that underpin ICT and prosperity, as well as how to spot them. This research provided a critical verisimilitude four-step methodological model to research and clarify the research issues. The basic notion of the fundamental realism-based procedure proposed in this research is to find the exact principle (s) that elucidate what and how ICT contributes to the creation, notably in ICT4D scenarios. The researcher demonstrates the design protocol by using a test case from Gambia as an example.

The Gambia's ICT baseline research kicked underway in April 2005 with the start of case studies after a sequence of preliminary and consultation meetings. Representatives of the Scan-ICT committee of experts from many key industries participated in this engagement. The desk study took roughly a month, during which time secondary material was acquired and, if none was accessible, a viable provider was identified. The required measures for the succeeding data collecting activities, designed to bridge the holes, were written during this activity, which

overlapped with the research design stage. The survey qualitative methodology was also suggested, which included performing administrative and household survey data. The poll was carried out at establishments representing both government and commercial services around the country. The organizational survey concentrated on two institutions and workers that the ICT committee was interested in, whereas the household survey concentrated on homes and people' exposure to and usage of ICT. A total of 157 random Gambians were included in the sampling size.

Philosophical Assumptions

This research design looks at the concept of ICT4D as well as the practice of using GTA methodology to gather and analyze empirical data in order to generate theories. The discoveries led to the establishment of the performance tuning Perspectives hypothesis, which categorizes the ICT4D's contribution and grounds for its sustained effectiveness. Furthermore, the research emphasizes the importance of employing GTA in ICT4D and the implications of using GTA in investigations that underwrite to a better comprehension of ICTs' developmental impact in the Gambia. While things may have progressed since then, scholars continue to differ regarding the degree to which ICTs contribute to development, especially among the relatively disadvantaged segments of society. Interrogating and understanding this paper's research philosophy is indeed a complete contrast: This paper's ICT4D study would incorporate empty imitation, replicating what other researchers have done without understanding why those certain research questions were chosen, theories, methodologies, and so forth. The dearth of mention of research strategy in ICT4D makes determining the following paradigms that are being used difficult. Nonetheless, output analysis (D'Souza, 2010), together with some extrapolation, reveals two aspects. Initially, there is the prevalence of what is known as "implicit positivism," a philosophy that believes "that social phenomena are created outside, and that its features may be assessed objectively rather than deduced subjectively via feeling,

introspection, or intuition" (D'Souza, 2010). Second, and less frequently posited, is the rise of interpretive paradigm in the twenty-first century: "the outlook that “reality” is not impartial and exterior, but is influenced by society and given interpretation by part of the daily interplay with others. It concentrates on the ways that individuals perceive the world, particularly through telling their stories with others through the channel of communication. Both empiricism and interpretivism have supporters as well as detractors. Both, for instance, are said to be victims of the "epistemic illusion" (D’Souza, 2010). This implies that they limit assertions about existence to assertions about human understanding of that actuality (D'Souza, 2010).

Research Questions

1. *Has the service quality enhanced after implementation of the e-gov? If yes, what aspects?*

This section briefly discusses critical realism along with its use in ICT4D. Given the essential relationship between information system (IS) and particular ICT4D investigation, this study examined the underlying philosophies employed for studying IS to solve this subject of study. Most present IS constant innovation, notably in the Gambia, is based on a positivist mindset. The ICT4D sphere remained steady at first.

Sampling

Respondents were sought from the finance, accounting, ICT, healthcare, and academic disciplines for the semi-structured questionnaires to guarantee a broad cross-section variety of community sector websites. The respondents were chosen based on their diverse histories with e-government activities, and the researcher employed snowball sampling to acquire them. Fifty interviews took part, all of them were persons between the ages of 23 and 38.

Interview Questions

The aim, anonymity, participants' entitlements, and the author's obligations were all included in an interview protocol. The research goal, and hence the interview, was explained in the handbook and a promise of interview confidentiality. Interviewees were informed that

there were no incorrect or correct responses and might decline to respond to any question. The researcher devised a series of sub-questions based on numerous topics to investigate the participants' perceptions of the effectiveness of e-government services in The Gambia.

Deployment Process

The respondents were asked the questions mentioned above. They reacted in a somewhat way that the investigator could use the semi-structured aspect of the surveys to his advantage, allowing him to ask more questions to obtain a complete response.

Limitations

The problem with this theoretical system to ICT4D analysis is that universal rules can be deduced from a collection of specific facts, such as how identical cause-and-effect functions in different settings. This research refers to IS since it is a related subject to ICT4D, with both methodologies being sociotechnical instead of merely being social or technological.

Nevertheless, the universal rules proposed ignore underlying circumstances and their implications for potential triumphs and failings. That was because applying physical laws to the outcome of ICT4D is challenging since categorical imperatives imply open systems and consistencies of occurrences, but social phenomena constantly emerge in complex platforms.

Comprehending the social events/effects connected with launching innovative structures (for example, new Internet technology in an ICT4D environment) and assessing the processes associated with such institutions may be approached from a critical realism viewpoint. On the other hand, critical realism seeks to find the thought principles that have produced and may produce the situations or events, rather than overarching rules that hinge on outcomes. As a result, this research proposes that a critical realism approach may offer a valuable lens for revealing structures, circumstances, and processes that might have resulted in ICT4D occurrences, such as adaptive capacity.

2. *How effective is the current e-government model (ICT4D) used in improving information system management in The Gambia?*

Technically, the critical realism-based technique tries to discover the mechanisms, which can hypothesize how the seen or observed occurrences might be interpreted. The social constructivist researcher analyzes the fundamental dimensions: the real, the practical, and the experimental, as well as the interaction between these entities: systems, processes, and occurrences, to get as much insight as feasible. The methodological difficulty explains identifying mechanisms, considering they are not measurable.

Process of Interviewing

The 157 survey questionnaires in Gambia were scheduled through call / email in 2011 at different places acceptable to the interviewees. While English was utilized to conduct the interviews, local ideas evolved throughout the 30- to 50-minute sessions. Due to the recurring knowledge discovery and classifying approach, it was told to respondents that a transcript of the session was preferable to assist analysis. The interviews were audiotaped with the approval of all but one respondent.

Process of Deployment

The most significant effort is hence to identify the processes. Finding strategies in the proposed critical realism-based technique is difficult because there are no explicit and consistent linkages between systems, processes, and events. One of the most common approaches is uncovering systems via retroduction, a method of working going back from empirical occurrences to find the thought principles that might conceivably have created the reported events. Retroduction is an evolving procedure in which studies say numerous hypotheses or a series of causal processes within a class system and circumstances while

collecting and analyzing evidence. Signaling pathways may be hypothesized for the retroduction phenomenon. Researchers may then use data validation, cross-case assessment, and mixed methodology triangulation to track plausible mechanisms. Interviews were conducted as part of the retroduction procedure to determine what causes change. Researchers may increase their knowledge of what drives change by going through a continuous identifying and selecting process. A research topic in critical realist methods must be like "What prompted the events related to the phenom to take place?" Employing retroduction to seek solutions to such a study topic necessitates a gradual pragmatist research methodology.

Validity and Reliability

Projected Four-Step Methodology

- *Step One: Portrayal of Events*

The critical realism technique began with describing the circumstances in the scenario under investigation. ICT4D academics and professionals are interested in the mentioned events as subjects of inquiry or related themes. According to critical realism, events may occur in both the factual and empirical levels, but this research only described activities that happen in the practical layer.

- *Step Two: Identifying Organizations and Associations*

The second phase was to locate and obtain information on the items and relationships that describe the phenomenon being examined. Individuals, organizations, and networks, for instance, are essential entities that construct causal hierarchies. The constructions are referred to as aggregation. The assemblages here are not just a collection of different things but a set of similar objects that act, perform, and engage in producing certain occurrences.

- *Step Three: Abduction*

The third phase, evaluating the data, is also known as theoretical re-description or just abduction, which entails looking for alternate theoretical viewpoints and interpretations of the occurrences. Methodologies for ICT4D, which can assist the researcher in expanding their

theoretical grasp of the situation, offering a richer comprehension of the underlying processes and activities in the scenario as readiness for Part 4, might be used in this phase of the procedure.

- *Step Four: Retroduction*

Retroduction, the fourth phase, and the essential philosophical process, "is a conceptual phase whose goal is the discovery of procedures that elucidate what drove the things to happen. This fourth phase is perhaps an essential milestone in the pragmatist process. The following stage (Step 4) is to speculate the methods and circumstances that could have prompted the formation of the incidents after the researcher had described the occurrences (Step 1) and shown the underlying causal relation (Step 3). The technique of retroduction, on the other hand, is not simple. The researcher looked at the phenomenon from a variety of angles. The researcher had to continuously go through numerous cycles of the initial steps before identifying candidate systems that explained the result, revealing principles from experimental observations, validating them with any further data, and using alternative philosophical lenses. This recurrent approach is required for elucidating and comprehending causal processes. Forward sequencing was used to analyze the process's aims, while backward chaining was employed to understand the process's outcomes. Backward chaining, in contrast, occurred when ICT4D the researcher discovered situations where the stated objectives were met and sought to investigate the reasons that contributed to this achievement.

The findings were then used to determine whether the theories found were factual by ranking which pathways were most plausible to have caused the activities in the setting premised on judgmental logic and reason [which] indicates that the researcher can publicize claim about actuality as they suppose it is, and organize better or much worse rebuttals on behest of those statements. On the other hand, the processes cannot be utilized to forecast ICT4D performance levels. Still, they may be employed to explain how certain particular

ICT4D initiatives achieved expected objectives in a specific setting, with different conformations and conditions.

Data Selection and Collection

ICT professionals and everyday users were contacted for this research. A total of 157 interviews took part, all of them were random persons. Data was collected via online interviews with the government parastatals. The proposed research classified data from 10 participants through online interviews who were government officials from different state department. To make the interviews run more smoothly, the study employed semi-structured questioning aids. Except where respondents were apprehensive, all conversations were taped. The researcher performed 157 interviews, each lasting a typical amount of 80 minutes. Three primary workshops were held with representatives from the authorities, the commercial sector, academics, and non-governmental organizations (NGOs). The researcher gave an introduction talk at the start of each session and discussion group to familiarize the attendees with the study subject, goals, and evidence they were supposed to provide. The attendees were divided into separate discussion groups and allowed 40 minutes to one hour to talk. Discussion guides were supplied to each team to help with the conversation. Following that, a combined group discussion took place, during which groups delivered their results. This method worked well because it allowed for active engagement, questioning, and explanation of ambiguous topics.

The associated challenges were that when the researcher iterated via the abduction as well as retroduction stages, he realized that a single mechanism may not capture the whole phenomenon, but just specific aspects of it. However, additional contextual constraints, such as pervasive socioeconomic issues in mountain communities, a lack of telecommunication infrastructure, and other factors, all contributed to the severe requirement for such initiatives. Local activists' enthusiasm as well as the voluntary participation of specialists and members of the local community, conversely, acted as a motivation for the project. The researcher learned

from the research that an actual impact may be caused by a complicated mix of many processes sparked by a mixture of varied variables and socioeconomic systems. As a result, it is critical to comprehend the interaction between observable events, constructions, and situations, as well as the processes that these events, systems, and circumstances may produce, in attempt to elucidate the manner in which ICT might contribute to societal growth.

Ethics and Bias

1. Has the service quality enhanced after implementation of the e-gov? If yes, what aspects?

There appears to be not much visible interplay with the methodological approach in the ICT4D analysis, but what there is shows a predominance of positivism and interpretivism—as a powerful technique of assessment, analyzing, and evaluating subjective responses from people is inappropriate and must be disregarded. Even if participant remarks are thorough and compelling, the study observed that they never always represent the worth of the ideas at hand. The goal of interviews conducted and evaluation, to the extent practicable, should be to acquire verifiable rather than qualitative information. Users' assumptions for the quality and variety of current ICT-enabled solutions have yet to be met. For example, most of the information, except news webpages, is seldom maintained and not regional. For instance, on official websites, links and contract information have become obsolete. Even when they cannot function, these components are frequently left ignored.

2. How effective is the current e-government model (ICT4D) used in improving information system management in The Gambia?

Officials may provide the respondent with skewed information regarding government performance. Utilizing triangulation to evaluate the data obtained might further boost trust in the report's findings. The answer bias caused by interviewer demand features might be reduced by eliminating the disparities between the interrogator and the respondents. Take the effort to

comprehend the complexities and faults that may arise due to the impact of scholars from cultures that are considerably different from their own.

Limitations

Research topics in the ICT4D sector are regularly confronted with challenging situations that need the modification of both ideas and methodology. When the researcher was seeking to define research topics and initiatives in the context of the broader political environment in the Gambia, things grew much more difficult to navigate. IXPs (Internet Exchange Points) are rare in Africa, contributing to Internet costs being expensive in the country. Every region, city, and community in Europe, the United States, and other emerging nations have an Internet Exchange Point (IXP). Controlling every detail: This has presumably been a significant issue for the project. Without the proper authorities to implement it, outsourcing responsibility was required. In the absence of power, accountability is pointless. Shortage of internet availability and spread and a lack of energy are all manifestations of this problem (Yim & Gomez, 2021). Cellular phone networks have minimal coverage.

On the other hand, ICT infrastructure, particularly computers, are still not generally accessible. This is especially true in rural places. This obstructs the ability to stimulate ICT4D demands and implementation enterprises in the nation (Yim & Gomez, 2021). Leadership in the Gambia must be able to declare what they want and enlist the help of the appropriate individuals to determine costs and initiate the concept to those who can fund or authorize it.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

Introduction

Data analysis, research presentation, and interpretation of results in light of the current study's goals were the focus of this section. Through a study of information systems management in The Gambia, e-government models were examined for their applicability. The purpose of this study was to assess the quality of public services after the first implementation of e-government. In order to convey the results, tables and figures were employed (pie charts and bar graphs).

Response Rate

A total of 168 participants were surveyed for this study. Respondents were given a total of 168 questionnaires by the researcher. The investigator received surveys from 168 people who did so within the time frame indicated. As a consequence, the research had a perfect 100 percent response rate from all participants. Koen et al. (2018) stated that it is considered suitable for data processing and generating conclusions to have a return rate of over than 70%. It was now safe to declare that the study's response rate had improved.

Reliability of the Research Instrument

Reliability of the research instrument was assessed using the Cronbach alpha coefficient. There is a range of 0 to 1 in Cronbach's alpha values. According to Burgueño & Medina-Casaubón, (2021), a Cronbach alpha value greater than 0.7 indicates satisfactory reliability. With regard to the factors under investigation, their average Cronbach alpha was 0.769.

Demographic Information

The demographics of the participants included their age, gender, location, employment, education, and monthly income. Figures illustrated the findings.

Age of Participants

It was requested of the participants that they provide their ages. Figure 4.1 shows the findings.

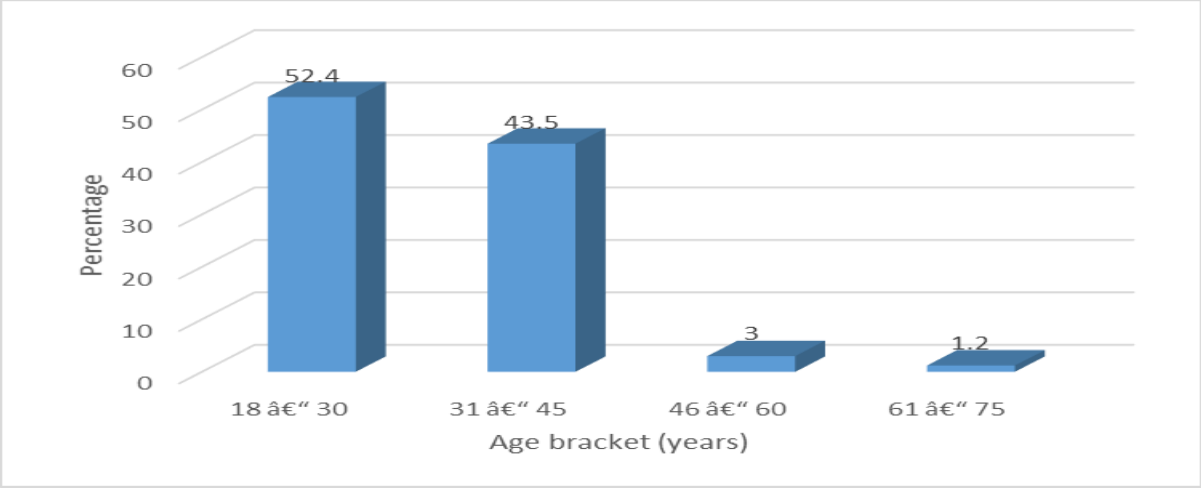

Figure 4.1: Participants' Age

Figure 4.1 shows that 52.4 percent of the respondents are in the age of 18 and 30 years old, according to the findings, 43.5% specified 31 to 45%, 3.0% indicated 46 and 60 years and 1.2% pointed out between 61 and 75 years. This implies that most of the respondents were mature enough to provide substantial responses for inference making. The findings are in line with the findings of Simon (2013) that all staff working in procurement departments in Gambia are mature and competent professionals.

Respondents' Gender

Respondents were asked to identify themselves as male or female. Figure 4.2 shows the final findings.

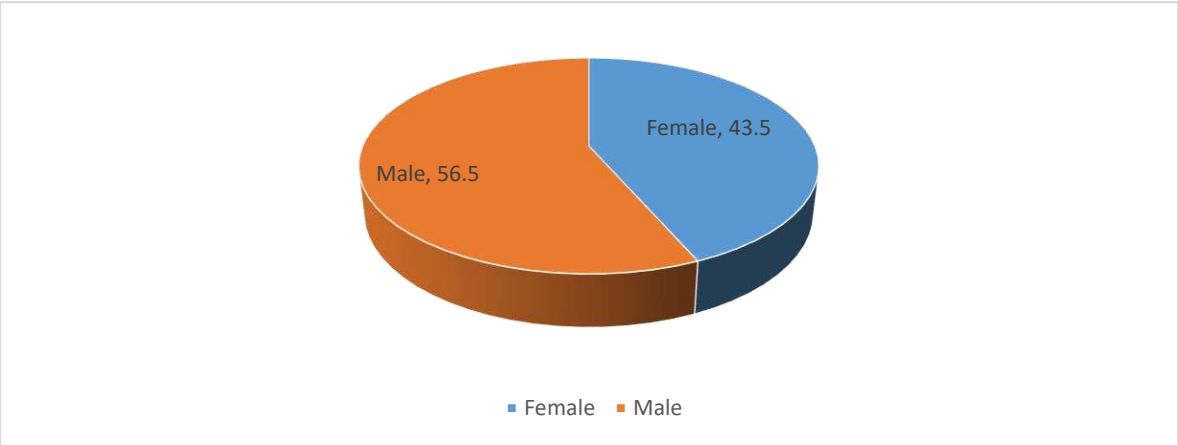

Figure 4.2: Respondents' Gender

The results show that 56.5% of the respondents were male and 43.5% were male. The implication of the results is that most the participants were female. The findings agree with the findings of Bojang & Ceesay (2020) that gender equality is being practiced in Gambia public service.

Area of Residence

Their location of residence was inquired for by the participants. Figure 4.3 displays the findings.

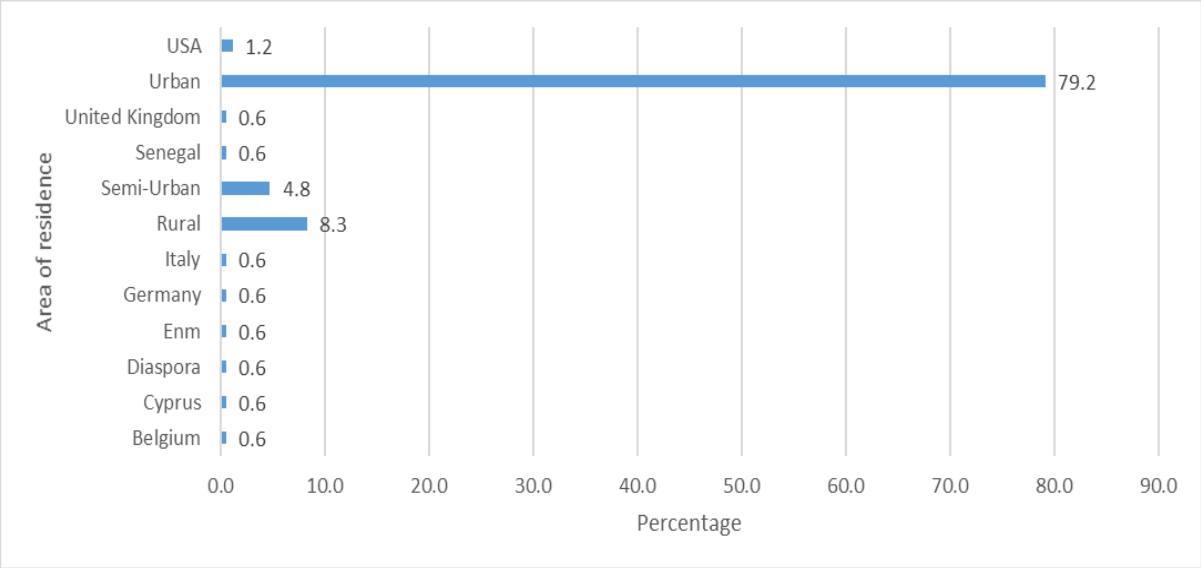

Figure 4.3: Area of Residence

The results revealed that 79.2% of the participants were from urban area, 8.3% indicated rural area, 4.8% specified semi- urban area, 1.2% pointed out USA, 0.6% indicated United Kingdom, and the same percentage specified Senegal, Italy, Germany, Diaspora, Cyprus and Belgium respectively. The findings agree with Bojang (2021) findings that there is high population of people in urban areas as they migrate from rural areas looking for employment opportunities in urban region.

Participants Occupation

The respondents were asked to provide a brief description of their day-to-day jobs. Figure 4.4 depicts the results of their thoughts.

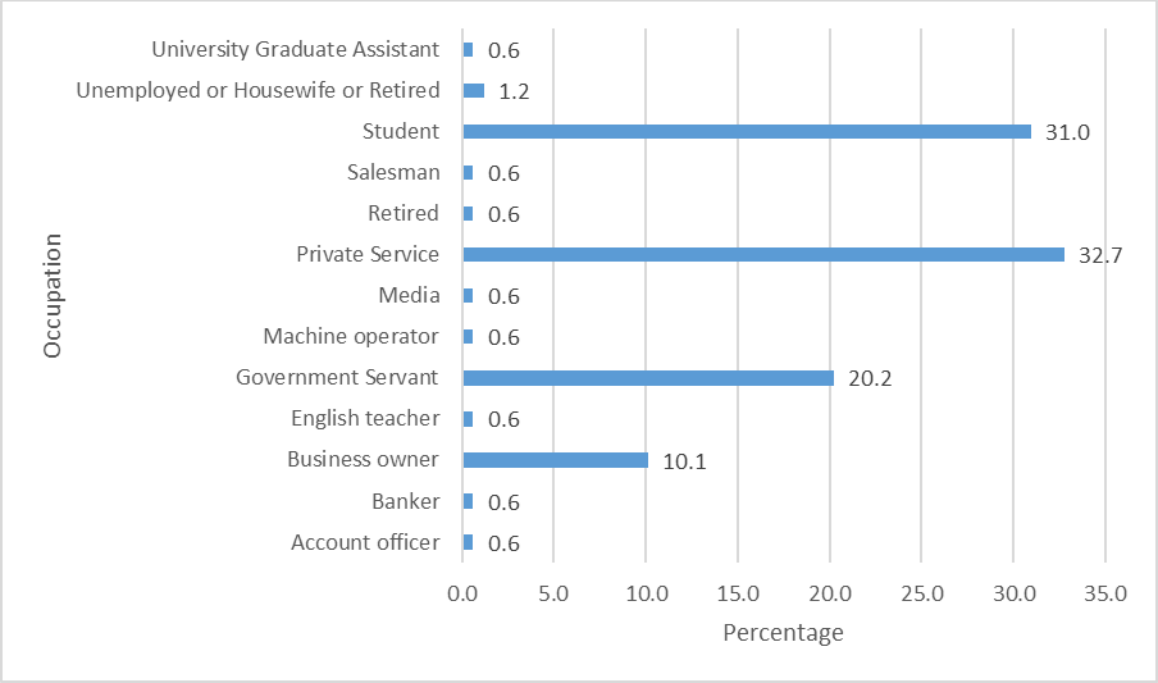

Figure 4.4: Respondents' Occupation

The results show that 32.7% of the respondents were working in private services, 31.0% indicated they were students, 20.2% pointed out they are civil servants, 10.1% indicated they are entrepreneurs, 0.6% pointed out that they are university graduate assistant, the same percentage indicated they are marketers, machine operator, English teacher, banker and account officer. Another 0.6% pointed out they were retired. The findings agree with Chaushi, Chaushi & Ismaili (2016) that private sector create employment opportunities to Gambian citizen compared to public sector which account for 2% of job creation.

Academic Level

In addition, respondents were asked to specify their degree of schooling. Figure 4.5 shows the findings.

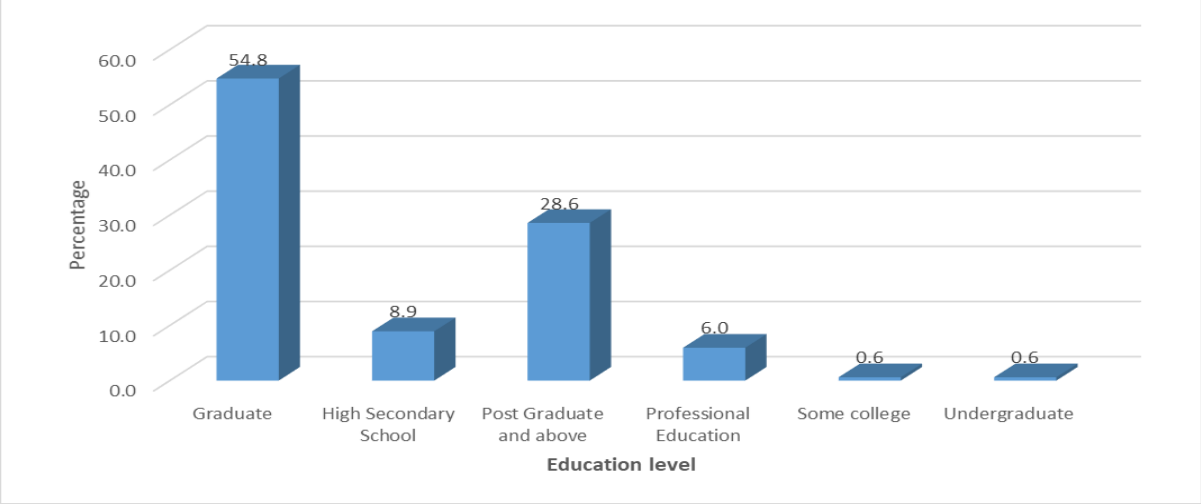

Figure 4.5: Academic Level

The results revealed that 54.8% of the respondents were graduate, 28.6% specified post graduate and above, 8.2% indicated high secondary school, 6.0% pointed out professional education, 0.6% specified college level and the same percentage indicate they were undergraduates. This implies that most respondents were literate enough to respond to the research questions accordingly. The findings are in line with Heeks (2015) that literacy level in Gambia is at 54.1% as a result of establishment of public schools.

Monthly Income

All of the participants were asked to provide a monthly salary figure. Figure 4.5 shows the findings.

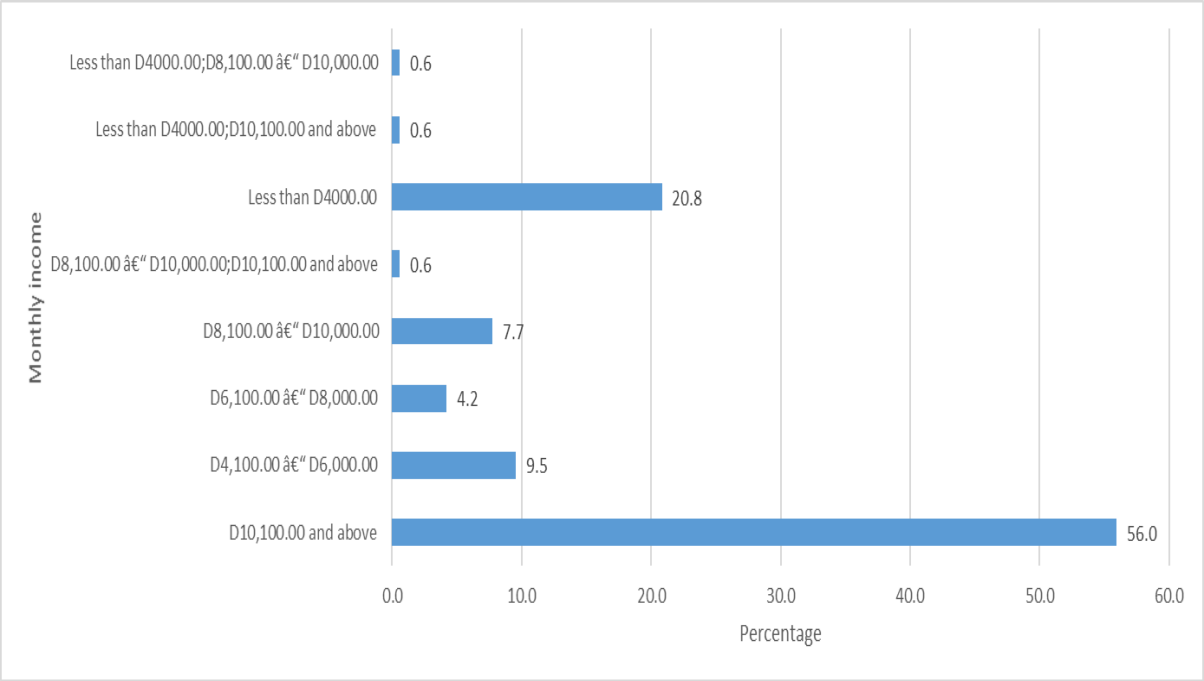

Figure 4.6: Monthly Income

The results show that 56.0% of the respondents were earning D 10,000 in a month and above, 20.8% indicated less than D4, 000.00, 9.5% specified the earn monthly income of D 4,100.00 to D 6,000.00, 7.7% pointed out between D8, 100.00 and D 10,000.00, 4.2% indicated their monthly income was between D 6,100.00 and D 8,000.00, 0.6% specified less than D 4,000.00, the same percentage pointed out less than D 4, 100.00, D 8,100.00 and D 10,000.00 respectively. Another 0.6% indicated they were earning between D 8,100.00 and D 10,000.00 respectively. The implication of the result is that most respondents were high income earners. The findings contradict Schuppan (2009) that most people in developing countries are low-income earners due to poor economic condition in their states.

Internet Access Platforms

The participants were requested to indicate the platforms they use to access the internet. The results were as depicted in Figure 4.7.

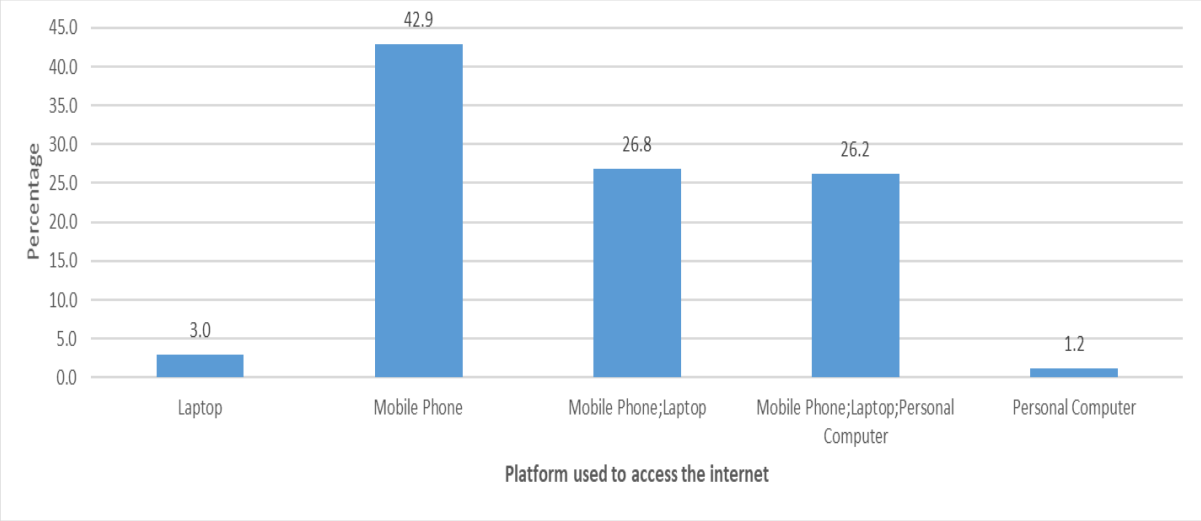

Figure 4.7: Platform used to Access the Internet

The results show that 42.9% of the respondents used mobile phones to access the internet, 26.8% specified they use mobile phones and laptops, 26.2% indicated mobile phones, laptops and personal computers, 3.0% pointed out laptops and 1.2% specified they use personal computers. This implies that mobile phones is the most used platform to access the internet among the respondents. The finding agrees with Hooda Nandal & Singla (2019) findings that since the advent of smartphone internet accessibility has improved in Gambia.

Frequency of Accessing the Internet

The respondents were asked to specify how frequent they access the internet. The results were as shown in Figure 4.8.

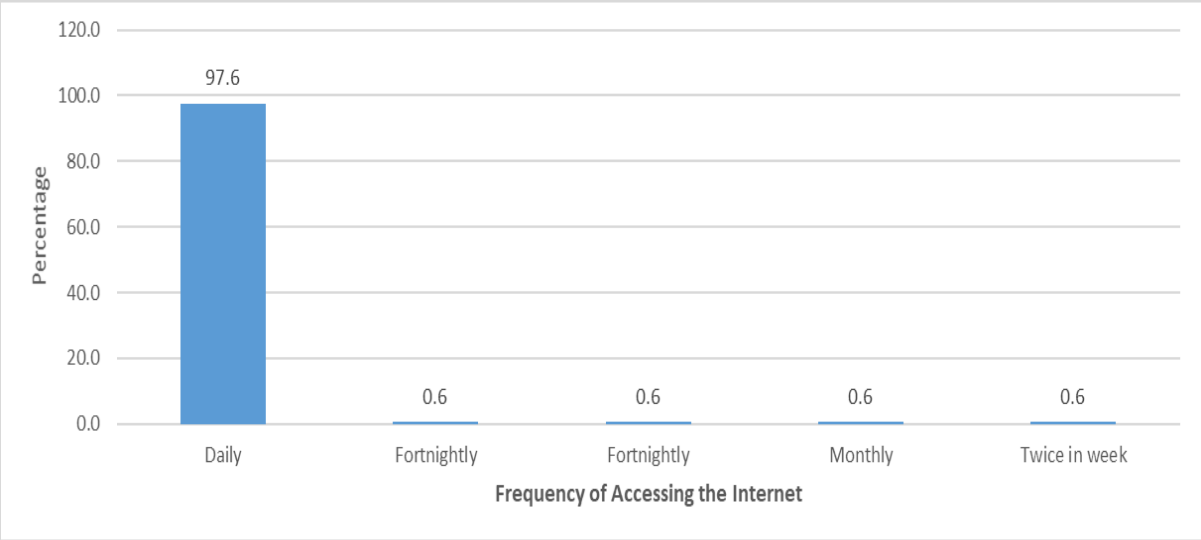

Figure 4.8: Frequency of Accessing the Internet

Results showed that 97.6% of those polled used the internet daily, while just 0.6% said they did so every two weeks, and the same number said they did so every two weeks and monthly. This implies that most respondents access internet on a daily basis. The findings agree with Dahiya (2019) findings that most people access e-government services on daily basis using smartphones.

Awareness on Provision of Gambian e-government Projects

The participants were asked to indicate their awareness on e-government projects offered by Gambian government. The results were show in Figure in 4.9.

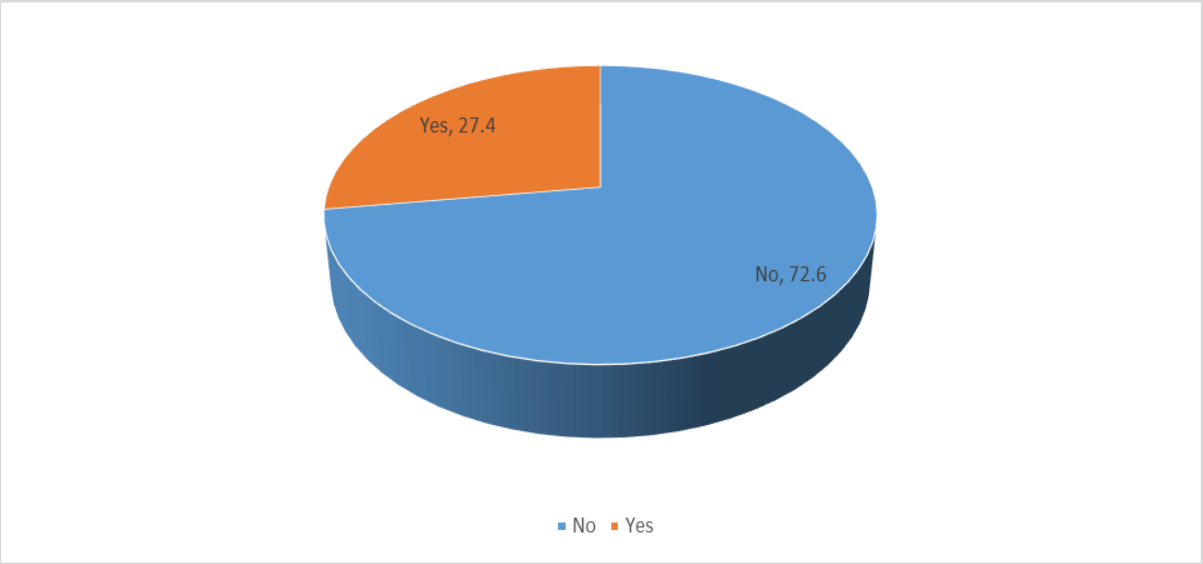

Figure 4.9: Awareness on Provision of Gambian e-government Projects

The survey found that 72.6 percent of respondents were unaware of Gambian e-government programs, while just 27.4 percent were knowledgeable about them. This implies that most Gambian were unaware of the Gambian e-government projects offered. The findings agree with García-Sánchez et al (2014) findings that lack of awareness creation makes people unconversant with e-government activities.

Awareness on the National E-government Plan

If they had any knowledge of the national electronic government strategy, they were asked to indicate this in the survey responses. Figure 4.10 shows the findings.

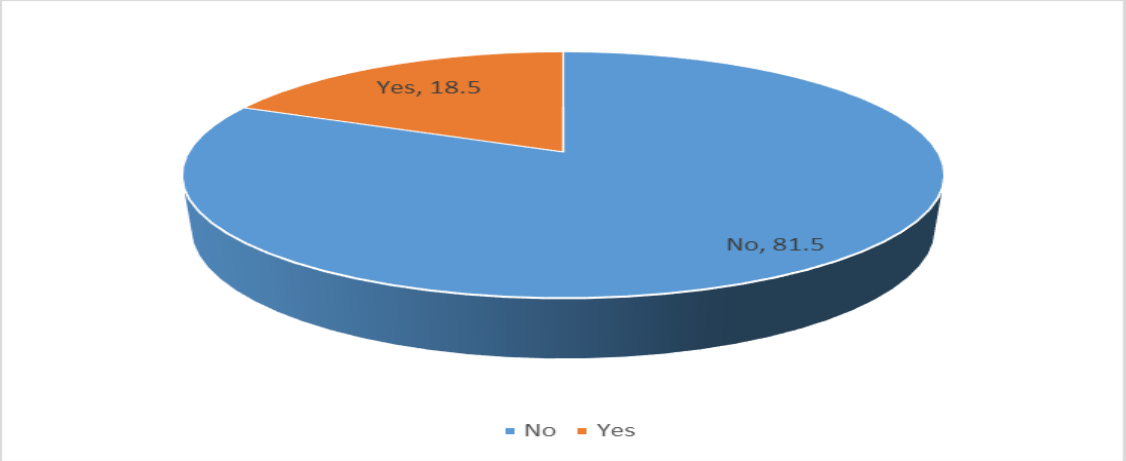

Figure 4.10: Awareness on the National E-Government Plan

According to the findings, 81.5% of those polled had no idea of the nationwide e-government initiative, while 18.5% seemed aware of it. This study's findings suggest that the majority of respondents were not aware of the federal government's long-term strategy for electronic governance.

Trusting online Services

The participants were also asked whether they had faith in internet service providers. Figure 4.11 depicts the findings.

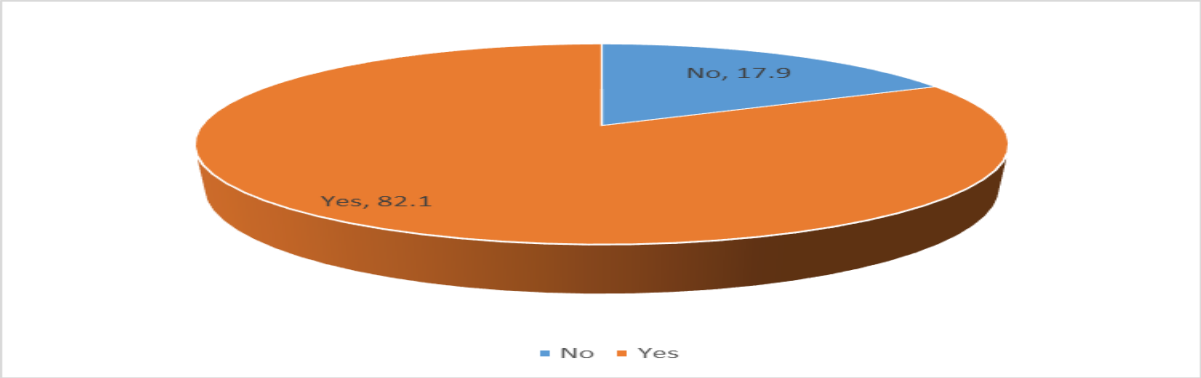

Figure 4. 11: Trusting online Services

The results revealed that 82.1% of the respondents specified that they trusted online services while 17.9% indicated no. This implies that most respondents have trust on online services.

Perception on Re-designing Current Government Process

The respondents were asked to share their view whether the current government process should be re-design. Figure 4.12 shows the findings.

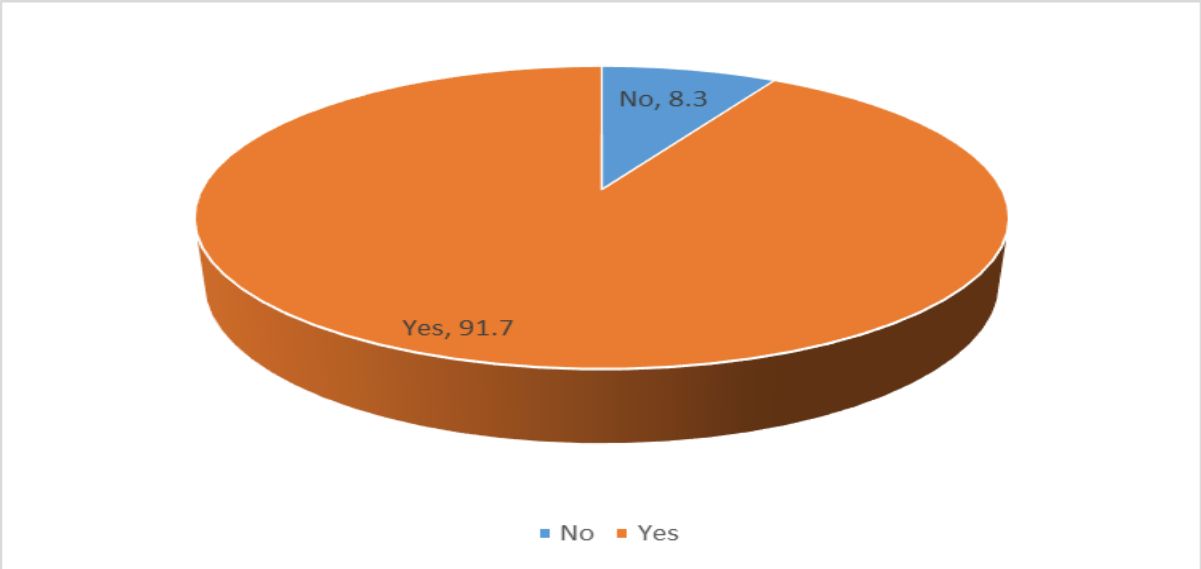

Figure 4.12: Perception on Re-designing Current Government Processes

The results show that 91.7% of the respondents were of the opinion that the current government processes should be re-designed while 8.3% indicated no. This implies that there is need for re-designing the current government process.

Checking Website before Obtaining Government Services

The respondents were requested to indicate whether they check website of concerned department before obtaining any government services. Figure 4.13 depicts the outcomes of the experiment.

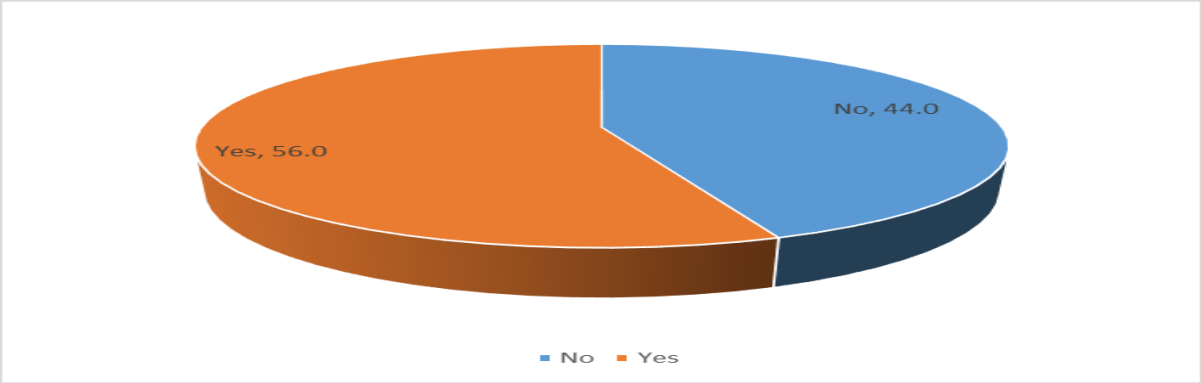

Figure 4.13: Checking Website before Obtaining Government Services

The results revealed that 56.0% of the respondents specified that they check website of concerned department before accessing any government services while 44.0% indicated they do not check website. This implies that most respondents check website before obtaining government service.

The E-Government Role in the Reduction of Corruption

The participants were requested to indicate whether e-government has reduced corruption. Figure 4.14 shows the final findings.

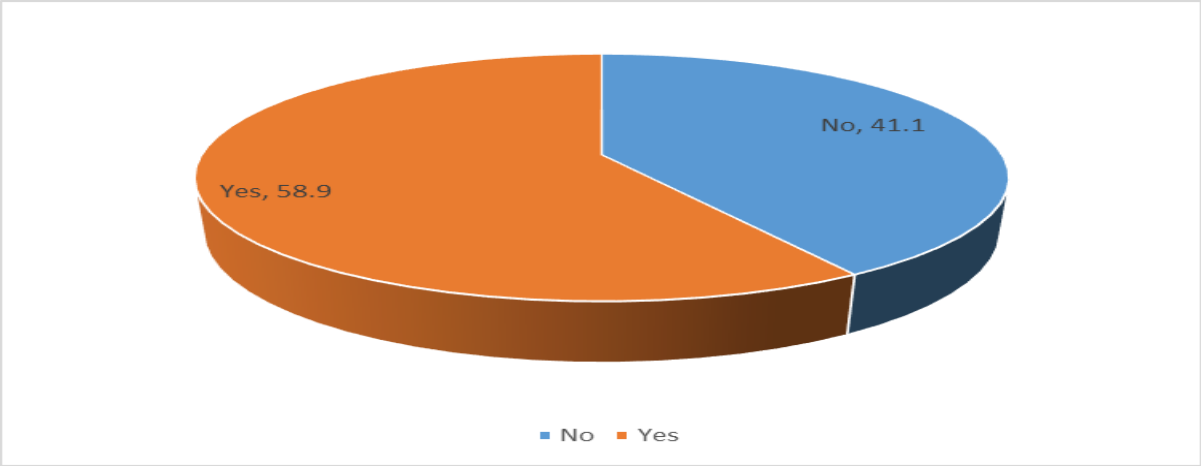

Figure 4.14: The role of e-government in Corruption in Reduction

The results show that 58.9% of the participants specified that e-government reduce corruption and 41.1% pointed out no. Electronic governance has an important role to play in the fight against corruption. Provision of Error-free Transaction by E-government the respondents were requested to specify whether the e-government offer error-free transaction. Figure 4.15 depicts the outcomes of the experiment.

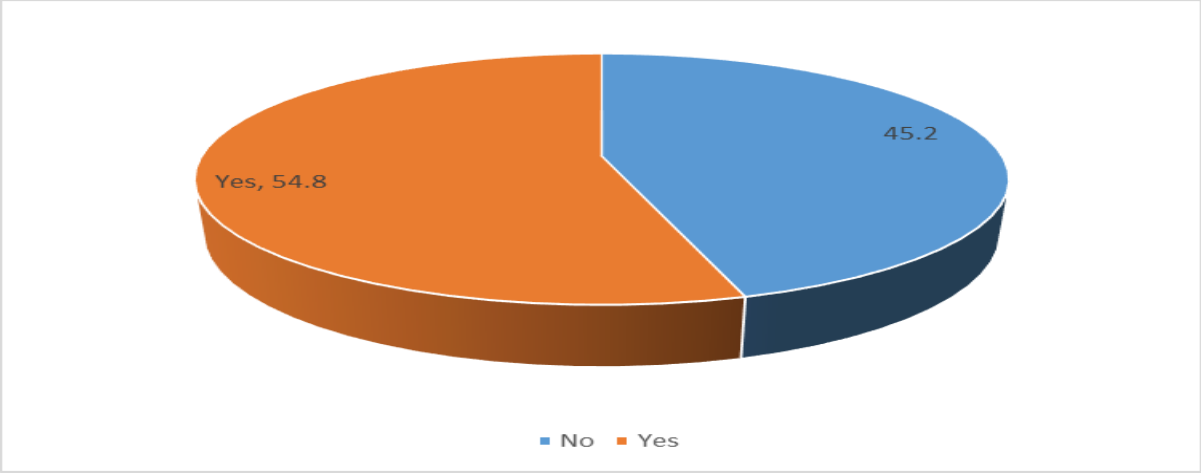

Figure 4. 15: Provision of Error-free Transaction by e-government

As depicted in Figure 4.15, 54.8% of the respondents pointed out that e-government offer error free transition while 45.2% indicated it does not offer error free transition. This implies that transaction through e-government is free from error.

Reduction of Visit in Offices by E-government

The respondents were requested to indicate whether e-government reduce the number of visits in government offices. Figure 4.16 shows the findings.

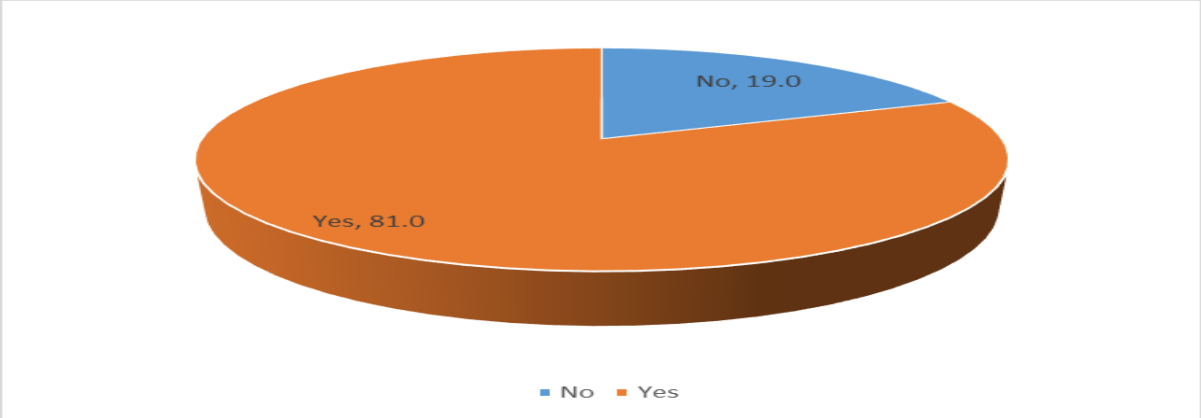

Figure 4.16: Reduction of Visit in Offices by E-government

According to the results, 81.0% of the respondents specified that e-government reduce the frequency of visits in government offices and 19.0% indicated it does not reduce. The implication of the results is that e-government reduce the number of visits in public offices.

Factor Analysis

In order to determine the most important factor of government services and measuring effectiveness of any government services, the psychometric properties of measuring scales, factorial analysis and reporting was adopted. In addition, the research will include the establishment of hypotheses, discussion of the findings, and implications of the findings.

A critical component of any government program

Psychometric qualities of measurement scales

Table 4.1: KMO and Bartlett's Test: A Crucial Aspect of Government Services

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.805
Bartlett's Test of Sphericity	Approx. Chi-Square	888.609
	df	10
	Sig.	.000

If the KMO sampling adequacy score is below or equal to 0.5, it is regarded acceptable for a valid factor loading. Kaiser (1974) specified a minimum acceptable value of 0.5 for KMO (number for KMO). Good is defined as being in the center of this range, while exceptional is defined as being over 0.9. An acceptable KMO value is shown in Table 4.1 as 0.805, which is over 0.5.

There is really no one-size-fits-all solution for the sample of users required for factor analysis since techniques vary. It is recommended that researchers strive for a minimum of ten participants for each variable. According to Shrestha, the current research includes 168 replies that are clearly eligible for sampling (2021). There is a strong consensus among scientists in this field that factor analysis ought not to be done on datasets with an overall population of less than 50.

Bartlett's test is the other method for determining how strongly two variables are related together. A correlation analysis is a correlation matrix only if the null hypothesis is true. On the diagonal, all values are equal to 1 whereas off-diagonal values are near to 0 (Table 4.1). (As stated above). The primary goal is to reject the null hypothesis. Bartlett's sphericity test may be viewed in the very same table as its importance. In other words, a p-value of 0.000 is smaller than a p-value of 0.05. Significant enough to rule out the null hypothesis, in actuality. In other words, the correlation analysis is not a one-to-one correspondence matrix.

Total Variance Explained

In order to determine the total variance explained, a five-point scale was used to categorize the elements in data collection tool whereby 1 represents trustworthy, 2 denotes transparent, 3 represents time service delivery, 4 denotes speed service delivery and 5 represents 24/7 availability of service. The results were as shown in Table 4.2.

Table 4.2: Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.044	80.874	80.874	4.044	80.874	80.874
2	.426	8.514	89.388			
3	.353	7.061	96.449			
4	.110	2.207	98.655			
5	.067	1.345	100.000			

Extraction Method: Principal Component Analysis.

Eigenvalue doesn't indicate the components found by factor analysis; instead, it reflects the number of factors found inside the data. We've included the eigenvectors for all elements that may be derived from the study. There are three types of Eigenvalues: initial Eigenvalues, the sum squared load, and the rotations of squared loads. 'Eigenvalue' For the sake of our study, we will stop with just these two variables. The existence of eigenvalues greater than one is necessary for determining the components or factors suggested by a collection of variables. For the first, second, and third components, the values are, in accordance with those in Table 4.2, each greater than or equal to one. As a result, the 5-variable set has five components. Consequently, based on the stated observations, 80.874 % of the variation characteristics are attributed to the first component, 8.514 percent are attributable to component 2, 7.061% are attributable to component 3, 2.207 percent are all attributable to component 4, and 1.345 percent are all attributable to component 5. (Table 4.2). As a consequence, just one component is required to represent the five variables listed above. They have eigenvalues

greater than the sum of their individual values. A single component accounted for 80.874 %. Where there is a 19.2 percent difference that has not been explained.

Therefore, the study established that the most important factor when considering government services is ***trustworthy, followed by transparent, timely service delivery, speed of delivery service and 24/7 service availability***.

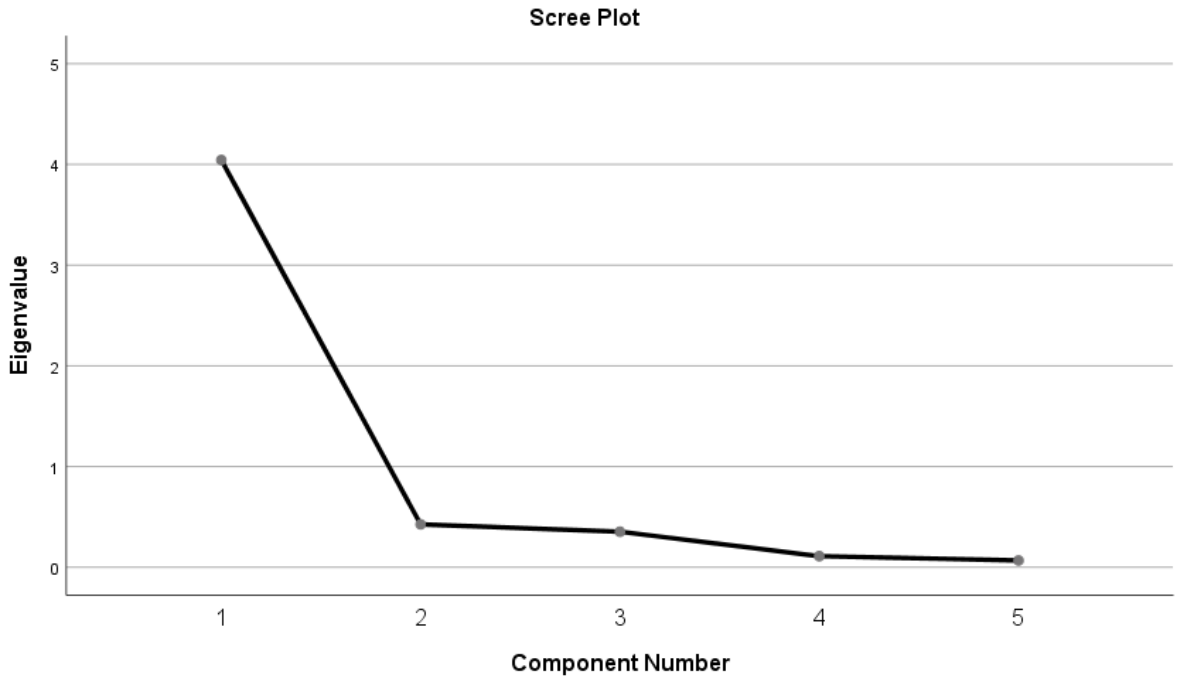

Figure 4.1: Screen Plot

For each variable, the Scree plot depicts the Eigenvalues in relation to their respective values. The graph depicts how many factors were most important. The action takes place when the curve starts to flatten. The slope begins to level out at factors 2 and 3. Furthermore, the eigenvector of components 2 and upwards are less than one, indicating that just one component has been retained.

Measuring Effectiveness of Any government Services

Table 4.3: KMO and Bartlett's Test: Measuring Effectiveness of any government Services

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.821
Bartlett's Test of Sphericity	Approx. Chi-Square	1821.826
	df	153
	Sig.	.000

If the KMO sampling adequacy score is below or equal to 0.5, it is regarded acceptable for a viable factor analysis. Kaiser (1974) specified a minimum acceptable value of 0.5 for KMO (number for KMO). Good is defined as being in the center of this range, while exceptional is defined as being over 0.9. According to Table 4.3, the KMO value is 0.821, which is more than 0.5 and hence acceptable.

Cronbach's alpha coefficient is another method for determining how strongly two variables are related together. An autocorrelation is a correlation matrix only if the null hypothesis is true. All diagonal members are equal to 1 and the off-diagonal values are close to zero in the identity matrix shown in Table 4.3 (as stated above). Bartlett's sphericity test is apparent in same table. The p-value of 0.000 is below 0.05, in other words. Significant enough to rule out the null hypothesis, in actuality. In other words, the correlation is not a one-to-one correspondence matrix.

Total Variance Explained

In order to determine the total variance explained, 18 factors relating to measurement of effectiveness of any government service. The outcomes are presented in Table 4.4.

Table 4. 4: Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.444	30.243	30.243	5.444	30.243	30.243	4.850	26.945	26.945
2	2.677	14.873	45.116	2.677	14.873	45.116	3.094	17.191	44.136
3	2.373	13.183	58.299	2.373	13.183	58.299	2.390	13.278	57.414
4	2.046	11.365	69.664	2.046	11.365	69.664	2.144	11.911	69.325
5	1.111	6.172	75.837	1.111	6.172	75.837	1.172	6.511	75.837
6	.628	3.491	79.327						
7	.594	3.298	82.625						
8	.524	2.913	85.538						
9	.448	2.487	88.025						
10	.413	2.292	90.317						
11	.310	1.722	92.039						
12	.270	1.502	93.541						
13	.251	1.393	94.934						
14	.221	1.226	96.160						
15	.202	1.121	97.281						
16	.171	.951	98.231						
17	.167	.930	99.161						
18	.151	.839	100.000						

Extraction Method: Principal Component Analysis.

Eigenvalue doesn't indicate the components found by factor analysis; instead, it reflects the number of factors found inside the data. We've included the eigenvectors for all of the elements that may be derived from the study. Initial Eigenvalues, Extracted Summation of Squared Loads, and Rotation of Squared Loads. There is no need to extend our study or interpretation beyond these two variables. The existence of eigenvalues greater than one is required to determine the components or factors suggested by a collection of variables. According to the findings of Table 4.4, the first component has a value of 5.444> 1, the second

element has a value of 2.677 > 1, the third component has a value of 2.373> 1, the fourth element has a value of 2.2046 > 1, as well as the fifth component has a value of 1.111>1. As a result, the 18-variable set has 5 components. Derivatives are used to summation squared percentage of variance (SSPV) for a set of data (Table 4.4). A total of 18 elements may be described by only five components, as a consequence. Five elements have eigenvalues greater than one. Five variables accounted for 75.837 %. Where there is an inexplicable 24.17 percent variation. As a result, the research determined that the most relevant metrics of the efficacy of the any government service are quality of service, transparency in operations, trustworthiness if it is available online, and speed of service delivery.

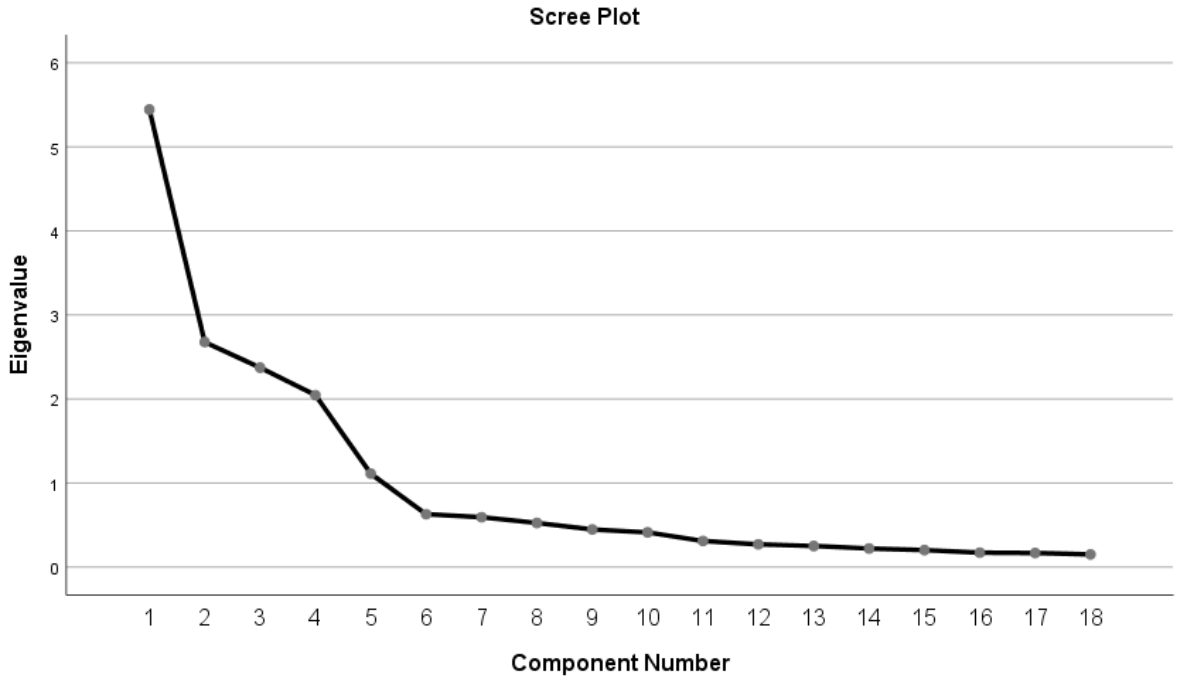

Figure 4.2: Screen Plot

Eigenvalues are shown on the screen plot in relation to each variable. The graph illustrates just how many different factors came into play. The action takes place at the point when the curve starts to flatten. Components 6 and 7 mark the point at which the curve begins to flatten. Six and higher factors have eigenvalues < 1, hence only five factors have been retained.

Table 4.5: KMO and Bartlett's Test: Measuring Effectiveness of Gambia Government Services

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.850
Bartlett's Test of Sphericity	Approx. Chi-Square	979.121
	df	78
	Sig.	.000

If the KMO sampling adequacy score is below or equal to 0.5, it is regarded acceptable for a valid factor analysis. Kaiser (1974) specified a minimum acceptable value of 0.5 for KMO (number for KMO). Good is defined as being in the center of this range, while exceptional is defined as being over 0.9. According to Table 4.5, the Value of KMO is 0.850, which is more than 0.5 and thus acceptable.

Cronbach's alpha coefficient is another method for determining how strongly two variables are related together. A correlation analysis is a correlation matrix only if the null hypothesis is true. Table 4.5 depicts an identity matrix in which all diagonal members are equal to 1 and all the off-diagonal values are close to 0 (as stated above). Bartlett's sphericity test is evident in same table. The p-value of 0.000 is below 0.05, in other words. Significant enough to rule out the null hypothesis, in actuality. In other words, the correlation analysis is not a one-to-one correspondence matrix.

Total Variance Explained

In order to determine the total variance explained, 12 factors relating to measurement of effectiveness of Gambia government services. Those findings are presented in Table 4.6.

Table 4.6: Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.444	30.243	30.243	5.444	30.243	30.243	4.850	26.945	26.945
2	2.677	14.873	45.116	2.677	14.873	45.116	3.094	17.191	44.136
3	2.373	13.183	58.299	2.373	13.183	58.299	2.390	13.278	57.414
4	2.046	11.365	69.664	2.046	11.365	69.664	2.144	11.911	69.325
5	1.111	6.172	75.837	1.111	6.172	75.837	1.172	6.511	75.837
6	.628	3.491	79.327						
7	.594	3.298	82.625						
8	.524	2.913	85.538						
9	.448	2.487	88.025						
10	.413	2.292	90.317						
11	.310	1.722	92.039						
12	.270	1.502	93.541						

Eigenvalue doesn't indicate the components found by factor analysis; instead, it reflects the number of factors found inside the data. We've included the eigenvectors for all of the elements that may be derived from the study. Initial Eigenvalues, Extracted Sum of Squared Loads, and Rotation of Squared Loads. For the sake of our study, we will stop with just these two variables. The existence of eigenvalues greater than one is necessary for determining the components or factors suggested by a collection of variables. A look at Table 4.4 shows the first component is 5.444> 1, the second element is 2.677> 1, and the third component is 2.373> 1. The fourth element's value is 2.2046> 1, and the fifth element's value is 1.111>1. As a result, the 12-variable set has five components. Derivatives are used to sum of the squares squared holding % of variance (SSPV) for a set of data (Table 4.6). As a consequence, just five components are required to express the aforementioned 12 variables. They have eigenvalues greater than the sum of their individual values. An astounding 75.837 % may be attributed to

only five different causes. 24.17 % of the variance is unaccounted for. To sum up, this research found that the most relevant metrics of e-government service efficiency in Gambia should be security of transaction, enhancement of government services and decrease in the cost of e-government operations.

Figure 4.3: Screen Plot

Eigenvalues are shown on the screen plot in relation to each variable. The graph illustrates just how many different factors came into play. The action takes place at the point when the curve starts to flatten. Factors 6 and 7 mark the point at which the curve begins to flatten. There are only five factors since the eigenvectors of elements 6 and higher fall below 1.

Summary

The study established that mobile phones is the most used platform to access internet. The results also show that laptops and personal computers were used less often. The study found that most Gambians access internet on a daily basis. The findings are in line with World Bank Report (2022) that mobile phones are used on daily basis to access internet in Gambia.

Moreover, the study established that most Gambians citizens were unaware of the Gambian e-government projects offered. They were also unaware of the national e-government plan. The findings are in agreement with the findings of Bojang (2021) that the main factors affecting implementation of e-government service in Gambia are lack of awareness on e-government projects and nation government plan.

The study established that Gambians have trust on e-government services. The study found that transaction through e-government is error free. The findings also indicate that e-government reduce the number of visits in Gambia public offices. The findings agree with Lin,Fofanah and Liang (2021) findings that E-Government has been identified as a critical

aspect in providing government services, free from transaction error and making information more available to individual hence reduce public offices visit as well as building trust in e-government services.

The study established that there was need for redesigning the current government process. Stakeholders have high hopes for the adoption of e-Government since it would have a profound impact on almost every aspect of the government process and the operations of the business sector. In the long run, it also has the potential to be a strong accelerator and booster of all online transactional processes. Appropriate and well-coordinated action is required to keep progress moving forward (Ceesay & Bojang, 2020).

The results revealed that Gambians check website before seeking government services. The study found that e-government plays a key role in eradication of corruption. According to the findings of Jamshed (2021), corruption seems to be decreasing as ICT-related e-government use rises.

The study established that the most important factor when considering government services is trustworthy, followed by transparent, timely service delivery, speed service delivery and 24/7 availability of service respectively. The findings contradict Jallow (2018) findings that that strategic location, institutional considerations, and management practices were shown to be the most important variables in delivering successful service. However, strategic decision-making had a detrimental impact on service quality.

The study found out that the most appropriate measures of effectiveness of any government services are quality of service is required, transparent in operations are necessary, trustworthy if its online and speed of delivery of service. The findings are in line with Obedait, Youssef and Ljepava (2019) argue that openness in government communications and information availability are the most important factors in determining government performance.

Further, the study established that the most appropriate measures of effectiveness of Gambia e-government services are security of transaction, increment in citizen empowerment, improvement in government services, reduction in cost delivery service and cost of e-government involved. The findings agree with Sachan, Kumar & Kumar (2018) that the technical skills contained in government website procedures have a significant role in defining the quality of e-government services and, ultimately, e-government user satisfaction.

CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

Introduction

The emphasis of this part is on the presentation of the overall results, suggestions, mistakes and limits, as well as proposals for additional research and investigation. Conclusions are also presented in this chapter about the improvement of service quality after the deployment of e-government, as well as on the efficiency of the existing e-government model (ICT4D) for strengthening information system management in The Gambia.

General Conclusions

According to the findings, trustworthiness is the most crucial criterion to consider when looking at government services, followed by transparency, timeliness, speed, and 24-hour accessibility. Quality of service, operational transparency, online trustworthiness, and service delivery speed were all identified to be important indicators of government service performance in this research. It was also discovered by researchers in Gambia that security, citizen empowerment, government efficiency, and cost of e-government involvement are best markers of e-government service's efficacy in the Gambia.

Research Question conclusions

Has the service quality enhanced after implementation of the e-government?

A recent survey found that mobile phones are the most often utilized platform for accessing the Internet. Laptops and personal computers were also found to be less often utilized, according to the statistics. Most Gambians, according to the findings of the survey, use the internet on a regular basis. Those results correspond to those of a World Bank report published in 2020, which found that in Gambia, mobile phones are utilized on a regular basis for web browsing and communication.

The survey also discovered that most Gambians were uninformed of the many e-government programs available in the country, which was a significant finding. The idea for electronic government was not known to them either. The results are consistent with those of Bojang (2021), who found that the most significant obstacles impeding the deployment of e-government services in Gambia are a lack of knowledge of e-government initiatives and a lack of a national government strategy and strategy.

How effective is the current e-government model (ICT4D) used in improving information system management in The Gambia?

According to the findings of the survey, Gambian citizens have confidence in e-government services and institutions. Using e-government, the researchers discovered that transactions are completely error-free. As a result of using e-government, the researchers discovered that the number of visits to official offices in the Gambia has decreased. Those findings are in agreement with those of Lin, Fofana, and Liang (2021), who found that e-government has been identified as a critical aspect in providing government services that is free of transaction errors and makes information more accessible to individuals, thereby reducing the number of visits to public offices and increasing trust in e-government services.

E-government offers a unique potential to increase the efficiency and effectiveness of government operations. It has the potential to provide significant advantages for people and other stakeholders. As a result, governments must monitor the quality of their services in order to gain more control and make improvements. However, assessing service quality is problematic since it is dependent on people' perceptions. As a result, numerous measures to assess e-government service quality have been developed based on diverse areas of study to assess service quality. The purpose of this work is to define its own e-service quality dimensions, which are based on existing literature. It is possible to use these parameters as a scale for evaluating e-government services.

According to the findings of the research, the present government procedure needed to be redesigned. As a result, stakeholders have high expectations for the implementation of e-Government, which they believe will have a significant influence on practically every area of government processes as well as commercial operations. The potential for it to be a powerful accelerator and booster of all online transactional processes exists in the long term, as well. Maintaining momentum requires appropriate and well-coordinated activity on all fronts (Ceesay & Bojang, 2020).

Results indicated that Gambians use websites before requesting government services from the authorities. E-government, according to the findings of the research, is critical in the fight against corruption. A study conducted by Jamshed (2021) found that corruption seems to be diminishing as ICT-related e-government use increases. According to the findings of the survey, the most significant aspect to consider when contemplating government services is trustworthiness, which is followed by transparency, prompt service delivery, speed of service delivery, and availability of service around the clock, in that order of importance. However, the results are in direct opposition to those of Jallow (2018), who found that strategic location, institutional considerations, and managerial techniques were the most critical elements in providing excellent service. In contrast, the quality of service was negatively affected by strategic decision-making.

After conducting research, it was discovered that quality of service is required, transparency in operations is required, trustworthiness is required if the service is provided online, and the speed with which the service is delivered are the most appropriate measures of effectiveness of any government services. The results are consistent with those of Obedait, Youssef, and Ljepava (2019), who suggest that openness in government communications and information availability are the most critical elements in influencing government performance and effectiveness.

A further finding of the study was that the most appropriate measures for the effectiveness of Gambia e-government services are the security of transactions, the expansion of citizen empowerment, the improvement of government services, the reduction of delivery service costs, and the cost of e-government itself. Sachan, Kumar, and Kumar (2018) found that the technical skills included in government website processes have a key part in defining the quality of e-government services and, ultimately, e-government user satisfaction. The results are in agreement with this assertion.

For this reason, our data show that higher expenditure on e-government is associated with a decrease in corruption in our sample. The use of information and communications technology (ICT) to combat corruption in both developed and developing nations seems to be promising. As a result of our empirical investigation, we have made a significant contribution. In the first place, while previous researchers have looked at the link between corruption and e-government, this is the first time this has been done.

Aside from that, our emphasis on using e-government to combat corruption is pertinent given the present global backdrop, which includes greater interest in narrowing the economic disparity both within and between nations, as well as the promotion of sound governance and social responsibility. As a result, the paper's contribution is crucial in this context since there is growing acknowledgment that issues, particularly in the developing world, can only be addressed by the application of comparable disciplinary views to the situation at hand The idea that corruption is a barrier to economic progress and, as a result, must be tackled, particularly in developing countries, is supported by economic viewpoints. Analysis of good governance, as well as the role of public institutions and policies, is required in order to comprehend the underlying forces that enable and sustain corruption. Corruption may be minimized by transparent and accountable policies, as shown in this work. The methodology examined in this paper can be applied to other areas of research. As a result of this paradigm, it brings to light

the crucial role that government and other public institutions play in removing the causes that keep corruption alive.

Despite the fact that research has been conducted on citizen adoption of e-government services, there has been little study conducted on the effects of trust and risk on e-government acceptance. It is becoming more important to understand the elements that influence the adoption of electronic government services in a cross-country context, given the growing collaboration between government agencies from various nations and the worldwide presence of people in other countries. Because of the low acceptance rate of electronic government services and the lack of public engagement in such efforts, it seems doubtful that the full revolutionary potential of electronic government services will be achieved. As a result, the Gambia provides a striking example of this argument.

Recommendations

Creating Awareness of e-government

Insights on the implications for clinical practice and the likelihood that citizens will utilize e-government services in their everyday life increases if they perceive that these services are helpful. According to the findings of this study, if e-government provides extra benefits, such as fast access and swift service, in contrast to traditional means, then this technological advancement will be made available to the general people throughout society. When one considers the significance of this concept, it is critical that local governments in the Gambia educate citizens, particularly those from lower socio-economic classes, about the advantages of such services. When it comes to the adoption of e-government services, the awareness of citizens about e-government systems and the advantages they give is important to success.

Individuals must first and foremost be made aware of the availability of e-government services in order to fully appreciate the relative advantages of this mode of delivery. This information must be provided in a clear and understandable manner. The government should

conduct a countrywide e-government awareness campaign to increase knowledge of the new and improved services that are now available, as well as the benefits that come with these new and improved services. In order to ensure that citizens recognize the value and utility of e-government platforms in the public service, the government should concentrate its efforts on initiatives and strategies, particularly at the grassroots level, that provide services that are more valuable to residents than those that are available through traditional modes of service delivery. Issues such as the speed, efficiency, and effectiveness of the e-services provided are all critical considerations from the standpoint of performance improvement and cost savings for the government, as well as from the standpoint of citizen convenience.

In this research, the data highlight the critical role that electronic government plays in keeping governments and administrative agencies in contact with their constituents. According to our findings, a strong relationship between the administrative system and the government might have a significant influence on government and administration operations. E-government also has the potential to increase the efficiency of government administration while simultaneously increasing the government's capacity to fight corruption at all three levels of government by encouraging public engagement in governance at all levels. When ICT4Ds are used as part of a nation's e-government efforts, accountability and transparency in management can be improved. These technologies also have the potential to supplement existing e-government efforts. Our advice is that legislators in a country recognize the importance of ICT4Ds in boosting the benefits of e-government and take appropriate initiatives (such as lowering Internet fees) to encourage the expansion of ICT4Ds across the country. First and first, a government must admit the existence of the systemic problem of corruption in order to address it.

Policy Makers

Researchers discovered that policymakers are using marketing strategies to boost public

trust and awareness of e-government services, according to the study's results. It is necessary for policymakers to design a marketing plan that emphasizes the advantages of utilizing e-government services, such as the rising usage of computers and high-speed Internet access, as well as information on security and privacy. In addition, public education on safe internet behaviours should be promoted via the use of mainstream media marketing to get the word out to the public.

The fact that customers believe in their own autonomy and capacity leads to them having larger expectations of the product itself. Policymakers can only improve users' happiness with e-government services by making it simpler for them to use them by providing them with the required training and resources. Users that get training may be able to make greater use of e-government services as a result of increased knowledge, talents, and independence. The Revenue Department's tutorials, seminars, and on-site support should aid individuals in becoming more acquainted with the use of an e-government platform, according to the department. The government's websites and other media channels must thus give accurate and up-to-date information regarding electronic government services in order for the government to be regarded seriously. People who are hesitant to utilize the service may be persuaded to give it a try if they witness a genuine or trustworthy user experience via the service. Providing consumers with incentives to utilize a service is a frequent marketing strategy that might encourage them to take use of the service.

According to the findings of the research, e-government apps should be made more user-friendly in order to enhance awareness of the relevance of these services and urge individuals to take advantage of their offerings. In order to do this, the government should also improve the general curriculum for information and communications technology (ICT). Providing consumer coordination and integration services in connection with citizen registration and integration services in connection with business and professional life changes

as well as automotive sales is critical in order to maintain public confidence in e-government.

Recommendations for further study

Ethnic background is a critical driver of online users' use of government websites, according to Choi, Lee, and Hwang (2018), who argue that evidence supports their hypothesis that ethnic background is a vital factor of web users' use of government websites. According to the data, residents and those with higher levels of education have higher rates of consumption than the general population at large. It is possible that future studies may look at the effects of this division on the adoption of e-government in the Gambia. Furthermore, future study might include control variables such as socioeconomic status into a more comprehensive model of e-government adoption, which would be very beneficial. It may also be possible to investigate how changes in the technology or system, such as the implementation of an e-government web site, will affect adoption in the future. Future research should incorporate the antecedents of perceived usefulness as well as trust, among other aspects, in order to provide a more comprehensive model of electronic government uptake. By Santa, MacDonald, and Ferrer, it has been suggested that future studies should pay more attention to the variables that influence relative advantage in order to improve their findings (2019). The literature has also suggested that there are other factors to consider, such as social influence (Jorge-Pagán et al., 2020). Efforts should be made in the future to integrate new indirect and direct predictors of e-government adoption into the model. Furthermore, future research may broaden the definition of what constitutes trust. According to Jallow (2018), one of the four aspects of believability is the ability to inspire confidence in others. Sincerity, dependability, and dependability are some of the characteristics that they claim contribute to trustworthiness, as are honesty and dependability. Rotter's (1967) conservative, but tenacious, idea of trustworthiness as an expectation that a person's or group's vow can be relied upon forms the foundation of the

current investigation. Further investigation into the many different characteristics of trust might be undertaken by future researchers, thereby expanding the scope of the current model. Furthermore, when it comes to trust, researchers may want to look into the relationship between social media sites such as Facebook and Twitter. When it comes to social networks, the strength of connections is a property of the network that is defined by an extraordinary level of trust. These variables include, for example, the length of time that two performers spend together and how often they speak, to give a few of examples. A study of the role of trust in electronic public participation, in particular as an adjunct to the previously mentioned research routes, would be beneficial.

Internet access is still not evenly distributed across ethnic, regional, and socioeconomic borders as it was in the past when it comes to general internet connectivity, according to the report. Globally, 60 percent of Gambia's homes have internet connectivity in 2017, according to Jamshed (2021), whereas the World Bank estimates that 40 percent of households were not online in 2017. Households with wages between $5,000 and $7,500 had an internet connection at a rate equivalent to that of homes with earnings between $2,000 and $5,000, but only 20 percent had an online connection at that level. A study by Zahid et al. (2022) discovered that, among online users, ethnicity and educational attainment are important predictors for predicting the usage of government web sites, among other findings. In comparison to other groups of people, white residents and those with a high degree of education are more likely to consume marijuana. Future study might examine at the consequences of this division on the adoption of e-government in the Gambia in the near future.

Errors and limitations

As a result of the strategic importance put by the Gambian government on the digitization of public services, as well as the steady rise in internet access over the past few years, e-Government has the potential to be a technical application with immense potential in

the country. A significant research opportunity exists in Gambia as a result of the country's present level of growth in e-Government. There might be significant repercussions for the proliferation of internet technologies and user acceptance in public services in the Gambia if the conclusions of this study are proven correct. Many challenges must be addressed before the Gambia's e-Government websites can be fully functional. The average age of customers is the first and most critical barrier to overcome. Considering that the majority of respondents in the present poll are under the age of 35, this shows that only younger individuals are interested in engaging in digital government, and that e-Government portals must develop methods to entice mid- and senior-level users, too. Furthermore, worries about service quality may have a detrimental impact on the ability to continue to use the portals in the future. A great amount of work and money has been invested, and will continue to be invested, in the creation and deployment of e-government portals. To achieve the aims of excellent administration while also assuring a return on investment in these systems, the government must aggressively encourage users to make use of e-Government portals, which is not always easy. The quality of the services supplied must be improved in order to increase the number of new users and the regularity with which existing users return to e-Government portals, among other things. In order to succeed in this environment, it is vital to understand client requirements and to keep up to current on those expectations.

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