



FACULTY OF COMPUTING AND INFORMATICS

DEPARTMENT OF INFORMATICS

**DEVELOPMENT OF A CITIZEN-CENTRIC E-GOVERNMENT MODEL FOR EFFECTIVE SERVICE
DELIVERY IN NAMIBIA**

By

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DECLARATION

I, Karin Fröhlich, student number **216093805**, hereby declare that:

The work in this dissertation is my own work

All sources used or referred to have been documented. I am fully aware of the Namibia University of Science and Technology's policy on plagiarism and I have taken every precaution to comply with the regulations.

This dissertation has not been previously submitted in full or partial fulfilment of the requirements for and equivalent higher qualification at any other recognized institution. Any opinions, findings, conclusions or recommendations expressed in this research are those of the author and do not necessarily reflect the views of the aforementioned institution.

Student's Signature: *KFröhlich*

Date: 25 April 2019

DEDICATION

This research work is dedicated to Namibia Women in Computing (NWI) for uplifting women in Computing.

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ABSTRACT

E-Government is regarded as an important tool to help governments meet their goals. The theory of New Public Management arguably motivated the use of Information Communication Technologies (ICTs) in government with the idea of improving service delivery. However, e-Government use by citizens remains low. On the other hand, government's vision of an inclusive e-Government has to still yield results, as many citizens are still not using the available e-government services. This challenge is common across Africa given the limited resources and other socio-economic challenges that are often given a higher priority over e-Government initiatives. This study used a public value theory to understand expectations of citizens from e-Government as suggested in the literature. The public value theory was adapted to the Namibian context using the available literature. Critical factors for attaining a citizen-centric e-Government were grouped into three main groups namely achievement of socially desirable outcomes, efficiency of public organizations and the delivery of public service. This study went on to identify key supportive factors for a government to achieve citizen-centric e-Government. This included access to ICT infrastructure, ICT skills, citizen's attitude, creating local partnerships and understanding the citizen's information needs. This study is a mixed method approach where qualitative and quantitative data (through questionnaires and interviews) were used as a data collection method. This study was conducted in seven (7) out of the fourteen (14) regions in Namibia. The participants are from seven (7) regional offices and one hundred and eighty-eight (188) respondents, and eight participants who took part in the interviews. The selection was done using the appropriate sampling procedures. Statistical analysis was used to carry out on the data gathered by use of a questionnaire while a content analysis was used on data gathered by use of interviews. The findings show that citizens are ready to embrace e-Government, though a lot still needs to be done in the area of provision of infrastructural facilities. At the end, a citizen-centric e-Government model for effective service delivery in Namibia was developed.

Key words: e-Government, Public Value, ICTs, Citizen-centric

LIST OF PUBLICATIONS

The following publications emanated from the thesis are presented as part of this research

- I. Amukugo, K. & Peters, A. (2016). Citizen-centric e-government services in Namibia: Myth or Reality? *AfriCHI'16. Africa Human Computer Interaction Conference, 21-25 November, Nairobi, Kenya* ACM
- II. Fröhlich, K. (2017). Evaluating the Effects of e-Government Initiatives on Citizen-centric Goals at Selected Namibia Government Ministry. *IST-Africa 2017 Conference, May 31-02 June, Windhoek, Namibia* IEEE
- III. Fröhlich, K. & Peters, A. (2017). E-Government Social Exclusion and Satisfaction Among Namibian Citizens: A Case of a Namibian Government Ministry. *SAICIT'17 Conference, September 26-28, Thaba Nchu, South Africa* ACM
- IV. Fröhlich, K. & Peters, A. (2017). A model for Designing, Implementing and Evaluating Citizen-centric e-Government in Namibia. *AFRICOMM 2017, 9th International Conference, December 11-12, Lagos Nigeria* Springer
- V. Karin Frohlich et al. (2018). Considerations for Co-Designing e-Government Services in Under-Served Communities. *AfriCHI'18. Africa Human Computer Interaction Conference, 3-7 December, Windhoek, Namibia* ACM
- VI. Osakwe Jude et al. (2019). The Imperatives of e-Governance in the education sector a case of the Namibian Education sector. Fourth International Congress on Information and Communication Technology (ICICT 2019) 25-26 February 2019. (Accepted for oral presentation).

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LIST OF ABBREVIATIONS

ASO	Achievement of socially desirable outcome
ANT	Actor Network Theory
CNS	Consistency Standardisation
CRN	Collaboration Networking
DOI	Diffusion of Innovation
DPS	Delivery of Public Service
eGSAP	e-Government Strategic Action Plan
EGDI	e-Government Development Index
EPO	Efficiency of Public Organisations
FAQs	Frequent asked questions
FNS	Foundation Support
HPP	Harambee Prosperity Plan
MOF	Ministry of Finance
MHAI	Ministry of Home Affairs and Immigration
MICT	Ministry of Information Communication Technology
MMR	Mixed Method Research
MTISMED	Ministry of Industrialisation, Trade and SME Development
NUST	Namibia University of Science and Technology
NSA	Namibia Statistics Agency
NPM	New Public Management
ICT	Information Communication Technology
SCOT	Social Construction of Technology
STEM	Science Technology Engineering and Mathematics
SPSS	Statistical Package for Social Science
SADC	Southern Africa Development Community

IT	Information Technology
PUBVAL	Public Value of e-government
PEOU	Perceived of Ease Use
PU	Perceived Usefulness
TAM	Technology Acceptance Model
TER –	Training, Education and Research
UN	United Nation
OMAs	Offices Ministries and Agencies
OPM	Office of the Prime Minister
OP	Office of the President

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CHAPTER 1: RESEARCH INTRODUCTION

1.0 Introduction and Research Background

Namibia is a country in Southwest Africa with a land size of 824 265 square kilometres and a population of approximately 2, 280 716 million inhabitants (NSA, 2012). The country is sparsely populated with approximately 60 per cent of its inhabitants living in the rural areas with sparse infrastructure (NSA, 2012). The development of Information, Communication and Technology (ICT) remains uneven across the country; hence, many citizens who reside in the rural areas face challenges of accessing electronic government (e-Government) services (Stork & Calandro, 2014). Other concerns include the cost of accessing government information due to high Internet costs and a lack of computers and smartphones in rural areas (Stork & Calandro, 2014). However, an increase in the use of mobile phones for accessing the Internet has reduced these costs (Stork & Calandro, 2014).

According to Ruhode (2016), most governments have initiated a number of programmes in order to achieve effective social outcomes through improved service delivery. These programmes include e-Government initiatives that are motivated by an increase in citizen awareness and demand for improved service delivery (Chen & Zhang, 2011). e-Government refers to the use of innovative systems and Information and Communication Technologies (ICTs) for the achievement of better service delivery to citizens and the private sector (Hasan et al., 2007). The World Bank (2011) views e-Government as the use of ICT by government agencies that has the ability to transform relations with citizens, visitors and businesses, and all arms of government. Namibia's e-Government initiatives and policies are consistent with African trends and in fact, Namibia is ranked at number 117 globally, but at number eight for the top African countries with an Electronic Government Development Index (EGDI) of 0.4554 (UN, 2018). However, Namibia's e-Government initiatives are mainly focused on publishing services with little effort being put on offering services (UN, 2016).

The foundation of e-Government initiatives in Namibia has been laid through a number of ICT developments that have taken place both within the government and the country as a whole. These initiatives include the e-Government Strategic Action Plan (eGSAP) of the Public Service of Namibia that explains the importance of e-Government and outlines an action plan on how these can be achieved within a timeframe ranging from the years 2014 to 2018 (OPM, 2014).

The Harambee Prosperity Plan (HPP) further emphasises the need to improve service delivery (HPP, 2016). The likely benefits of such initiatives are to improve service delivery to citizens, lower costs of transmitting information and travel, as well as encouraging the use of online services in order to increase citizen participation and satisfaction.

Despite these efforts, there remain areas of concern affecting the implementation of e-Government and associated service delivery. The usability and accessibility of e-Government platforms remain a challenge. Furthermore, very limited service delivery can be attained through the available crop of e-Government platforms. The e-Government readiness model conducted reveals that Namibia scored 2.2 out of 4 in respect of service availability via e-Government platforms (OPM, 2014). Further to that, access to government is skewed towards urban environments. Most rural residences are excluded from access and participation in e-Government due to a lack of access despite the high numbers of mobile phone and mobile phone users (MICT, 2015). A larger part of the population is unable to fully utilise ICTs due to the fact that they live in rural areas that are underserved because they are not seen as economically viable due to high cost of infrastructure deployed or low income of the population (MICT, 2015).

This study focused on addressing the gap between the current e-Government services and citizens. The available initiatives for improving service delivery through e-Government are yet to yield any meaningful benefits. This study focused on the citizen-centricity of e-Government in an effort to address the gap between citizens and the Government of Namibia. The focus is on examining the processes, challenges and benefits of the recent initiative by the Namibian Government at government Offices, Ministries and Agencies (OMAs) that are piloted and currently offering services online. The study also aims to analyse the usability of e-Government services in Namibia. The OMAs selected are Ministry of Home Affairs and Immigration (MHAI) and Ministry of Trade and Industrialisation, SME and Development (MTISMED). These OMAs were selected because of the nature of services they offer to Namibian citizens that involves a lot of data entries and interactions with citizens.

Berntzen (2013) indicated that citizen-centric e-Government is about delivering electronic services focusing on the interests and requirements of the end-users. He further emphasized that involving users is an important measure to ensure that services become citizen-centric.

Leading scholars have urged for new public services where citizens are more than simply passive recipients of public decision service (Denhardt & Denhardt, 2007). Accordingly, citizen-centric is defined in this study as the provision of electronic services through e-Government that are aligned to the needs and aspirations of the citizens. However, for citizens to be engaged in e-Government, it requires some interactive steps with integrated planning and design processes such as foundational support, impact and visibility, appropriate content, services that can meet the citizen needs, usability, functionality and accessibility testing (OPM, 2014).

The promise of government is to engage citizens in e-Government services in a citizen-centric approach, to enhance efficient and effective public service delivery through ICTs (OPM, 2014). Citizen-centric e-Government suggests that governments will provide services and resources tailored towards the needs of citizens in a timely and quality manner (Karim, 2015). The main problem has always been the ability to develop citizen-centric e-Government services that achieve cost savings, understanding of citizens' needs for e-government, wanting to meet citizen expectations and needs, and actively seek to discover what citizens want from e-government. Such practices remain rare within a government context (Heeks & Bailur, 2007).

1.2. Problem Statement

A background overview by Ochara (2008) and Ochara and Mawela (2013) showed that African e-Government systems are often resulting in social exclusion in its effort to promote an all-inclusive citizen engagement. Another study by Ochara (2012: 43) concluded "the concept of e-governance remains solid in Africa, but may be dispensable because grassroots actors are weakly mobilised. The disaggregating nature of the e-governance policy and e-Government implementation implies that the process has failed to nurture the heterogeneity of actors that is required for effective e-governance". This implies that the e-Government platforms do not seem to focus on the needs and aspirations of the citizens, but rather seem to be driven still from Government's perspective (Dombeu & Rannyai, 2014). Due to this disparity, Ochara (2008) raised a concern over the social exclusion in current e-Government set-ups and suggest a need to re-conceptualise e-Government that adheres to "the local contexts of African governments" (p. 24).

A preliminary study conducted by Amukugo and Peters (2016) at the Namibian Ministry of Home Affairs affirm concerns raised by Ochara (2008). For instance, not all citizens were

aware of the available online services. In some instances, citizens who were aware described it as pointless to engage in some online transactions when there was limited online interactivity or the online transactions were too complex. In addition, the cost of Internet and SMS services remained expensive for an average user while limited ICT infrastructures in rural areas reduced the services' availability. Besides, the design of current e-Government platforms was not compatible with technologies commonly used by Namibian citizens for accessing the Internet. E-Government models that are not aligned to the current rural set-up also exacerbate the situation. It is important to realise that whilst Western approaches to e-Government appear to be working well due to a well-established ICT infrastructure and social supporting environments, such models may not be viable in the African context given a different cultural context, levels of democracy and availability resources. As such, this research aims to develop a model for government agencies toward citizen-centricity of e-Government services delivery in Namibia.

1.3 Research Objectives

The main objective of this study is to develop a model for OMAs that will guide the government towards citizen-centric e-Government services in Namibia.

To meet the main objective, the following sub-objectives were identified:

- To establish if e-Government services are aligned to citizens expectations. This objective seeks to establish the services that Namibia citizens get from the government and the services Namibian citizens expect from Government. This would include those based on e-Government platforms and those being done at the government offices.
- To establish characteristics of effectiveness of e-Government services in Namibia. This objective aims to identify measures that could be considered when enhancing the effectiveness of e-Government services for the Namibian citizens. Challenges and gains were also evaluated.

- Explore alternative infrastructural requirements to enhance the accessibility of e-Government services in Namibia. If e-Government services are to be utilised, they have to be supported by an infrastructure that ensure their accessibility. Accordingly, the objective aims to establish the extent to which the designs of e-Government platforms are compatible with the infrastructure used citizens to access the services.
- Develop a citizen-centric e-Government model for Namibia. Several e-Government models exist already and have been deployed throughout the world. This objective aims to evaluate existing e-Government models for a best-fit and focus on citizen-centricity or in the absence of any, modify or develop a model for Namibia.

1.4 Research Questions

The main research question for this study is as follows:

How can Namibian e-Government service delivery be more citizen-centric?

The following research sub-questions were identified:

- What services do Namibian citizens desire from the governmental Ministries identified for this research?
- What are factors contributing to the effectiveness of e-Government services in Namibia?
- What are the necessary alternative infrastructural requirements to enhance the accessibility of e-Government services in Namibia?
- What would the ideal citizen centric e-Government service model look like?

1.5 Literature Review

There is a growing interest in the adoption and use of ICTs by government. Governments are following developments in the private sector of adopting and using the technology. This trend applies to both governments in economically developing and developed countries. E-Government is highly regarded by influential national institutions and governing bodies that develop instruments, tools and frameworks for promoting good government practices such

as the United Nations (UN) and the World Bank. In addition, research and leading institutions have since proposed e-Government maturity models to help guide the adoption and use of e-Government (Sigwejo, 2015). The implementation of e-Government could assume a Government-to-Government (G2G), Government-to-Business (G2B) and Government-to-Citizen (G2C) model depending on the receiver of government services. This study focused on the G2C e-Government model since it focuses on citizen-centricity.

1.5.2 Approaches To E-Government Service Design

Research on e-Government suggest user satisfaction, promote the adoption and use of e-Government services. Leading institutions, countries and researchers proposed guidelines that show the levels of complication (service) an e-Government can assume. These include maturity models proposed by the World Bank, United Nations, the European Union and one proposed by the United Kingdom and those of researchers such as the one proposed by Joshi and Islam (2018). All the models considered suggest that displaying information is the least service e-Government can offer while internetworking of government agencies and facilitating transactions online as an advanced and most desirable level of e-Government. On this subject, the general picture is that African e-Government platforms are on the extreme left with little to no facilities for transacting government service.

1.5.3 Models of Citizen-Centric e-Government and e-Government Initiatives

The literature shows a number of models and frameworks on promoting citizen-centric e-government (Chaopanon, 2015; Al-Haddad, 2013; Sigwejo, 2015). A model by Karunasena and Deng (2011) was adapted for this study. Their proposed model focuses on creating value for citizens through e-Government. As such, this study used the model to establish ways through which e-Government could create value for the Namibian citizens.

Ruhode (2016) indicates that many African countries especially in the Southern Africa Development Community (SADC) have similar characteristics. Namibia, like Zimbabwe and Kenya, is one of the few African countries with standalone Ministries of ICT (Ruhode, 2016). Namibia proposed an e-Government Strategic Action Plan for the years 2014 to 2018 with a vision “to improve the quality of life of the people of Namibia to the level of their counterparts in the development world, by 2030” (Office of the President, 2014). The proposed frameworks of e-Government clearly indicate that Namibia and other African countries do acknowledge

the need to improve e-Government but the implementation is frustrated by a number of social, political and economic factors (Ruhode, 2016). These factors have a direct influence of capital projects including e-Government. Furthermore, costs of accessing ICTs and a lack of e-Government skills have been some of the major impeding challenges (Karim, 2015; Hossan, 2011).

1.5.4 Theoretical Frameworks for IT Adoption and Use

This study used the New Public Management (NPM), joined up governments and the public value theory to explain how the public sector is often organised according to these theories. These theories saw the introduction of IT with the aims of improving the efficiency of the public sector in its role of service delivery. The study went on to use the public value theory to explain how value is created within the public sector. This theory guided the foundation of the study in an attempt to propose a citizen-centric model of e-Government. The use of the public value theory was motivated by the fact that, unlike private organisation that operate in order to generate a profit, public sector seeks to generate public value. Hence, this study sought to understand the value that is expected by Namibian citizens from using e-Government.

1.6. Research Methodology

Research presents different research philosophies and respective methodologies (Creswell & Clark, 2011). This study uses mixed methods for its data collection and analysis. Feilzer (2009) noted that mixed methods aim to integrate quantitative and qualitative research methodologies. Feilzer (2009) argues that research paradigms can be broadly split into two major categories namely the positivism and interpretivism. However, mixed methods do not entirely fall into any of these two categories rather it is in between these two paradigms. Thus, it borrows from both the quantitative and qualitative research paradigm. Overly, the study will assume the pragmatism philosophy that would underpin the qualitative and quantitative research paradigms.

Johnson et al. (2007: 123) in Creswell and Clark (2011: 4) goes on to define mixed methods as a “type of research in which a researcher or team of researchers combines elements of qualitative and quantitative research approaches (e.g. use of qualitative and quantitative viewpoints, data collection, analysis inference techniques) for the purpose of breadth and

depth of understanding and corroboration.” The study’s use of mixed methods is motivated by the fact that combining qualitative and quantitative methods in one study can help compensate limitations of each methodology. The study attempts to understand the problem of e-Government within its context something that can best be done by qualitative research methods. However, the need to generalise the research findings to a greater scale calls for quantitative research methods. Hence, a combined use of the two methodologies can enhance the quality of the study findings. A prototype was designed using findings from data collection and analysis. The prototype was based on a mobile application and tested by participants in Katutura Windhoek. Opinions of participants on the prototype was used to evaluate the proposed model of citizen-centric e-Government.

1.6.1 Data collection techniques

The study used data collection techniques aligned to qualitative and quantitative research methods. For quantitative techniques, the study used a structured questionnaire for data collection. In particular to qualitative research, this study sought to understand a given research problem or topic from the perspective of the local population. As such, detailed information like cultural values, opinions, behaviours, and social contexts of a particular population (Elstein, 2008) can easily be gathered. A triangulation of different data collection techniques shall be used to collect qualitative data. Interviews, observations and document analysis were used in this study for primary data collection. In addition, these techniques were used during testing of the prototype that was used to evaluate the proposed model.

1.6.2 Target population

The target population constituted of government officials in OMAs and citizens in different regions of Namibia. OMAs comprise of staff in leadership position and operational position. According to the staff establishment consists of Permanent Secretary, Deputy permanent Secretaries, Directors, Deputy Directors, Chiefs, and Operational staff.

1.6.2.1 Sample and sampling method

A sample is a subsection of the population considered for inclusion in the study (De Vos, Strydom, Fouche & Delport, 2015). A purposive sampling method was used for selecting participants for the interviews. The sample size was determined by the saturation of the data. In addition, respondents for the survey questionnaire were randomly selected.

1.6.3 Data analysis

Quantitative data was analysed using statistical techniques. The research methodology chapter (chapter 3) gave a detailed overview of data analysis techniques used on quantitative data.

Qualitative data was analysed using content analysis and coding. Data in tape records was transcribed and reduced into themes and sub-themes through open coding and summarisation of codes, which were converted into text for discussions. Chapter 3 gives further details on data analysis for this study.

1.7 Study Limitations

The study was not able to cover the whole of Namibia and all its cultural diversities. However, efforts were made to cover at least 7 regional headquarters. These included rural and urban based radiational (provinces) offices of the selected OMAs. This improved the representation of the sample by considering most of Namibia's eleven ethnic groups.

1.8. Study Contribution

This research contributed to the body of knowledge on citizen-centric e-Government by adding the experiences and a model for Namibia. Findings from the study shall contribute to e-Government policy framework development of citizen-centric e-Government platforms. Further to that, by focusing on citizen-centric e-Government, the study sought to propose usable e-Government platform that is relevant to developing countries.

1.9. Ethical Consideration

Permission sought from the Ethical Research Committee at NUST. In addition, permission was secured from the relevant OMAs to pursue the research and collect data within their jurisdiction. A letter of consent was issued to all respondents and participants for them to familiarise with the study and sign in acknowledgement of their willingness to participate in the study. The participants were given information about the research that the research was being carried out for academic purposes only and to improve the quality of service delivery. Anonymity and confidentiality were maintained throughout the study

1.10 The study outline

Chapters in the thesis are outlined as follows:

Chapter 1: This chapter introduces the entire study. This includes background information, research objectives, and problem statement.

Chapter 2: This chapter presents the literature review. Theoretical frameworks of the public sector are presented followed by a focus on e-Government. Namibia's initiatives towards e-Government were included.

Chapter 3: This chapter proposed the study's conceptual model. The model was informed by the literature review of chapter 2.

Chapter 4: Presents the study's research methodology. This study followed a mixed research methodology.

Chapter 5: Outlays results from data collection using a methodology presented in chapter 4. Results in this chapter were used to evaluate a proposed model in chapter 3.

Chapter 6: This chapter discussed findings from data analysis. Findings for this study were compared to those in the literature.

Chapter 7: Goes through an evaluation of the proposed model using a prototype that was designed for this study. Findings from Chapter 6 were used to inform the design of a mobile government (m-Government) application (app.) that was used to extract participants views on e-Government and factors in the proposed model. The proposed model in Chapter 3 was modified to reflect findings from evaluation.

Chapter 8: This chapter presents summary, conclusions and recommendations.

1.11 Conclusion

This chapter gave an introduction of the research. The chapter argues that the current Namibian e-Government platforms are not citizen-centric based on a preliminary literature review and studies at two government Ministries in Namibia. Indeed, Ochara's (2008) background overview shows that African e-Government platforms often result in social exclusion. Simply adopting Western approaches and models for e-Government might not be ideal for an African context such as Namibia. As such, this study aims to develop a citizen-centric model for e-Government in Namibia. This chapter went on to indicate that a mixed methods research was used. The mixed methods research was used to enhance the

understanding of citizen-centric e-Government in Namibia as its success is complex and enshrined in contextual factors.

The next chapter presents a literature review of this study.

CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

The practice and implementations of e-Government has evolved drastically over the last decade. The first wave of e-Government focused on service delivery guided by the principles of New Public Management (NPM) (Chadwick & May, 2003; Mergel, 2013). A recent move towards open government that promote citizen participation, collaboration and transparency suggests a shift in the roles of e-Government (Mergel, 2013) from being government centred to being citizen centred. These developments on e-Government complement the growing interest in promoting electronic participation (e-Participation). It appears that there is a shift towards citizen-centric as some governments come up with tailor made models/solutions to engage citizens using technologies that are currently popular and easy to use among citizens.

This chapter discusses the study's view on citizen-centred e-Government and goes on to explain public sector reform theories. The implications of the public sector reform theories are also discussed indicating their influence on e-Government. The chapter also explores studies that promote citizen-centric e-Government as well as modern technologies that can be used in e-Government. The chapter concludes with an overview of Namibia and its e-Government initiatives.

2.1 Citizen-centric e-Government

e-Government platforms have many stakeholders with different interests and objectives. This is clearly shown in the literature where the conceptualisation of e-Government has been mainly from one particular stakeholder, that is the government's point of view with topics of improving public service delivery, accountability, efficiency and transparency taking the centre stage (Karunasena & Deng, 2012; Sigwejo & Pather, 2016). This focus on government centred e-Government can be attributed to different public sector reform theories that a government can adopt. However, the popularity of government centred e-Government has created a shortage of holistic models and theoretical frameworks for evaluating e-Government from other stakeholders' perspectives with citizens in particular. This is important given that these stakeholders face unique challenges in relation to their adoption

and use of e-Government. Jaeger and Bertot (2010b), in reference to the Obama administration, pointed out that a government's commitment towards transparency through e-Government does not translate to increased citizen engagement or participation. More so, citizens constitute the most significant stakeholders of e-Government services hence their involvement is key to the success of e-Government (Jaeger & Bertot, 2010a; Sorn-in, Tuamsuk & Chaopanon, 2015). Authors are now motivating for a shift in focus of service provision on e-Government platforms from a government centred perspective to a citizen centred perspective (Karunasena & Deng, 2012; Sorn-in et al., 2015; Sigwejo & Pather, 2016; Osman, Anouze, Irani, Al-Ayoubi, Lee & Balc, Medeni & Weerakkody, 2014). By focusing on the interests, aspirations and the technology used by the citizens, resultant e-Government platforms are expected to create public value that is widely regarded and expected by the citizens (Karunasena & Deng, 2012; Sigwejo & Pather, 2016). The next section uses public sector reform theories to explain how investments in e-Government can end up being either government centred or citizen-centric.

2.2 Public sector reform theories

Theories or paradigms that define the way governments operate can be divided according to New Public Management (NPM) defining government and public value (Karunasena & Deng, 2012). According to Karunasena and Deng (2012), these public sector reform theories determine the way a government invests in e-Government. Interestingly, these theories relate to the three models of managerial, consultative and participatory involvement that explains how a government and its citizens interact through e-Government (Chadwick & May, 2003). Further to that, NPM and public value assume different principles, which imply that the drivers and evaluation of e-Government under these theories are different. As already stated by Chadwick and May (2003), the popularity of Internet use by government is no longer a question of whether the government is online, "but in what form and with what consequences." Accordingly, the next section discusses the way government operate according to NPM, integrating government and public value in order to anticipate a government's investments in ICT and respective consequences to citizens.

2.2.1 NPM and government participation

The principles that underline the NPM theory were copied from the private sector and adopted in some governments with the idea of making governments efficient, effective and accountable (Chadwick & May, 2003). According to Karunasena and Deng (2012), each government is therefore expected to streamline its operations into 'silos' with citizens viewed like customers just like in the private sector. This is expected to make governments "more responsive, accountable, transparent, and results-driven, as well as decentralized, efficient, and customer-oriented" (Karunasena & Deng, 2012). As such, technology investments under NPM would see the government focusing on meeting these goals of being more responsive, accountable, transparent, and results-driven, as well as decentralized, efficient, and customer-oriented.

In addition to NPM, there is another public sector reform theory that is closely related to NPM called joined-up government (Chadwick & May, 2003; Karunasena & Deng, 2012). The introduction of joined-up government saw a slight shift from NPM public sector reform theory that had more focus on "structural devolution, disaggregation, and single-purpose organizations, to propose a joined-up approach, which treats government as an integrated" unit (Karunasena & Deng, 2012). The British Labour administration is one of the front-runners in promoting joined-up government public reforms (Chadwick & May, 2003). The joined-up government public reform focuses on reducing challenges associated with fragmented government structures. However, both the NPM and joined-up government remain closely related with a focus on effectiveness and efficiency though joined-up government advocate for coordination among different government units. In fact, joined-up governments public service reforms promote horizontal and vertical integration of public sector units with the aim of avoiding conflicts between government units through fostering cooperation in public service delivery (Karunasena & Deng, 2012).

Karunasena and Deng (2012) indicated that it is important to understand the relationship between public sector reforms theory and ICT investments as these reforms steer and shape the investment in ICTs for public sector use. Chadwick and May (2003) went on to suggest that governments that assume NPM and joined-up government often adopt the managerial model for interacting with citizens. The managerial model assumes that e-Government will

focus on the efficiency and effectiveness of service delivery by the government. Karunasena and Deng (2012) agree to these views by indicating that, under NPM and joined-up government, ICTs are considered as a tool to support the administrative role increasing effectiveness, efficiency, transparency and improving the coordination of public sector units. The idea is to improve vertical communication to citizens, cutting costs and improve horizontal communication across governments departments. President Bill Clinton and George W. Bush's administration are some of the administrations that used ICTs for managerial purposes that promoted the NPM theory. Furthermore, a survey by Criado and Gil-García (2013) on e-Government trends in Latin America found that, governments in this region adopted e-Government policies that aim to promote the managerial and administrative roles of the public sector. Principles in the e-Government policies are reflected by government portals that focus on facilitating electronic access to government services by citizens and companies.

2.2.2 Public value public sector reform

Moore introduced the concept of public value in 1995 (Karunasena & Deng, 2011; Karunasena & Deng, 2012; Cordella & Bonina, 2012). Researchers pointed out that there is no universal definition of what public value is given that it is driven by contextual factors (Karunasena & Deng, 2011; Cordella & Bonina, 2012). Cordella and Bonina (2012) gave an example of what could constitute public value based on the following statement by President Obama on his inauguration:

"The question we ask today is not whether our government is too big or too small, but whether it works, whether it helps families find jobs at a decent wage, care they can afford, a retirement that is dignified."

In addition, Karunasena and Deng (2012) identified different kinds of public value as the government create value for citizens that included operating public organisations effectively and efficiently, promoting "equity, democracy, openness, transparency, confidentiality, responsiveness, environmental sustainability, citizen's self-development, user orientation, quality services." Despite the lack of a universal definition of what is public value, the public value concept is gaining popularity since its inception as a better paradigm for ascertaining citizen-centric e-Government (Karunasena & Deng, 2011).

The public value concept argues that governments do not operate like private companies as assumed by NPM. As such, the public value paradigm attempts to define the role of the state, the role of public managers and the role of citizens in a society during the creation of public value (Cordella & Bonina, 2012). It is believed that “citizens derive value from the consumption of public services” (Kelly et al. 2002 in Karunasena & Deng, 2011) hence the state should be guided by principles of public value in its delivery of public service (Karunasena & Deng, 2011). The public value concept therefore implies that the use of ICTs is not meant to derive benefits to the state alone as suggested by NPM and joined-up government theories but rather help the state create and deliver value to the citizens. On the other hand, “citizens decide together via elected representatives what they value as a collective and these collective preferences reflect what is valuable when government's action is concerned” (Cordella & Bonina, 2012). The public value concept argues that, when it comes to the creation and consumption of public goods, citizens do not behave like customers that focus on individual gains rather aim at advancing visions, goals and aspirations of the society as a whole. For instance, the concept of public value can be traced back to the traditional ways of participating in African democratic governments as reflected in “public baraza (East African term) or indaba (Southern African term)” where matters of public value are deliberated at councils (Ochara, 2012).

The public value paradigm suggests that the use of ICT in government should not aim at economic gains alone as is the case in the private sector and suggested by NPM. Besides, some subjects that relate to public value like fairness, equity, and equality cannot be measured using economic returns that are common in most NPM derived e-Government models (Cordella & Bonina, 2012). Cordella (2007) in Cordella and Bonina (2012) argue that e-Government reforms aimed at deriving economic gains risk promoting inequality among citizens. Thus, such e-Government initiatives create disparities between citizens that can gain access over those who cannot. For example, Jaeger and Bertot (2010) noted that a lack of equal Internet access and IT skills are some of the factors negatively affecting a move towards a transparent government during the Obama administration era. Similarly, Ochara (2008) laments the growth of social exclusion in the current e-Government set-ups within the African context. As such, there is a need to understand that the public sector operates differently from the private sector hence the use of ICTs is expected to pursue multiple objectives.

Accordingly, calls are being made to view e-Government from the citizens' perspective (Karunasena & Deng, 2012) where principles driven by the public value concept are highly regarded (Cordella & Bonina, 2012).

Even though the public value paradigm has a potential of explaining e-Government, it is important to realise that the use of the public value paradigm for explaining e-Government remains low (Cordella & Bonina, 2012; Karunasena & Deng, 2012). Nevertheless, the next section discusses selected studies that can help explain e-Government from a citizen-centric point of view. The selected studies were conducted in different countries to enhance the understanding and conceptualisation of e-Government that is citizen-centric.

Jaeger and Bertot's (2010a) Study on Designing, Implementing, and Evaluating User-Centered and Citizen-Centered E-Government

Jaeger and Bertot (2010a) argued that, the e-Government have different stakeholders with unique challenges. Citizens form an important category of e-Government's stakeholders. While Jaeger and Bertot (2010a) acknowledge the existence of a digital divide among the US citizens in particular to ICTs access and skills, they also noted that citizens with good internet speed prefer face-to-face and over the phone interactions when looking for government information. This is so despite various measures and instruments put in place by the US government with the aims of promoting e-Government (Chadwick & May, 2003; Mergel, 2012; Jaeger & Bertot, 2010b). This finding suggests a need to understand e-Government from citizens' perspective. Jaeger and Bertot (2010a) went on to propose the following seven strategies for developing and implementing citizen-centred e-Government:

Comprehensive planning for citizen-centred design. Jaeger and Bertot (2010a) suggested that e-Government designing should define the aims of the envisaged services, pay attention to the ways such e-Government services would support government goals, identify relevant management structures for e-Government, have an understanding of the targeted audience, pay attention to citizens' information needs, allocated resources and should device measures to evaluate the service. All these actions would ensure that e-Government services meet the goals of citizens.

Citizen information needs assessments. e-Government implementers need to understand the strategies used by citizens when looking for information. Further to that, it is important to understand how such information is used. Studies have shown that when citizens get information from a public website, for instance about health outbreaks, they often use Google to find out more details instead of referring to the public for more details (Schein, Wilson & Keelan, 2010). As a result, such details can help the government decide on how it can maintain its presence on the Internet.

ICTs availability, expertise and preference. Jaeger and Bertot (2010a) suggest, “that a Web-based e-Government service that requires a broadband connection, high-end computer, and advanced technology competencies will immediately exclude a segment, or multiple segments, of the intended service population”. Several studies have reported on how e-Government has resulted in social exclusion (Jaeger & Bertot 2010b; Ochara, 2008; Ochara & Mawela, 2013). In particular to Africa, it is important to realise that the majority of citizens use social media and access the Internet via mobile phones (Mergel, 2012; Stork, Calandro & Gillwald, 2013) hence policies and models that would engage such technology can promote the use of e-Government.

Citizen engagement. Jaeger and Bertot (2010a) suggest that it is important to define the nature of citizen engagement that would not result in complex systems. Mergel (2012) noted that e-Government to citizen engagement can involve three models of communication namely the top-down, bottom-up and horizontal communication.

Iterative evaluation for continual improvement. e-Government platforms need to be constantly evaluated to incorporate new suggestions that would contribute to the overall improvement of the platform.

Karunasena and Deng’s (2011) Conceptual framework for evaluating public value in e-Government. Karunasena and Deng (2011) developed a framework for evaluating public value in e-Government. Their model was evaluated through data collection and subsequent analysis in Sri Lanka. Sri Lanka is one of the early e-Government adopters among developing countries. Sri Lanka’s e-Government interests were signalled by the launch of the e-Sri Lanka program

in 2002 that focused on the transparency, effectiveness and efficiency of the public services (Karunasena & Deng, 2011). Their framework concedes that e-Government can create public value through the “delivery of public services (DPS), the efficiency of public organizations (EPO), and achievement of socially desirable outcomes (ASO)” (Karunasena & Deng, 2011). Figure 1 shows Karunasena and Deng’s (2011) conceptual framework. Three factors determine DPS from a citizen’s point of view namely the quality of information, the quality of e-Government service (two way communications) and the extent to which the e-Government platform is user-oriented. EPO is determined by the efficiency of the public office through e-Government and its openness as determined by transparency. Lastly, factors contributing to ASO equity, self-development, trust in the government and environment sustainability. Karunasena and Deng (2011) conceded that the e-Government’s compatibility to disabled citizens, use of native language and its available in rural areas promote the equity of e-Government. The possibility of learning and advance skills through e-Government herein defines self-development.

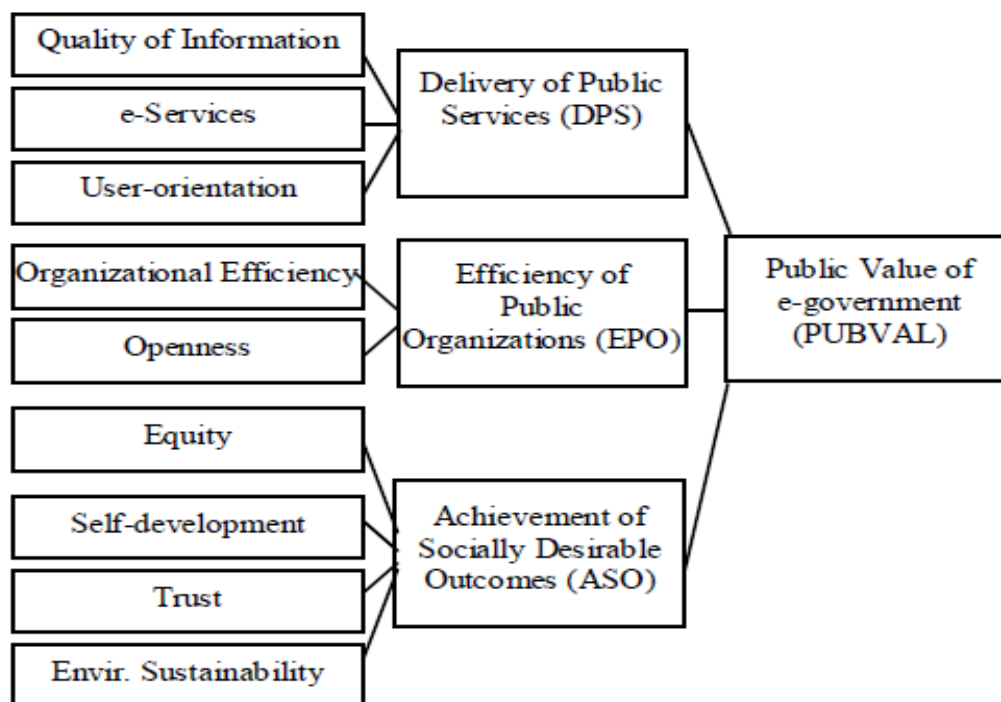


Figure 1. A conceptual framework for evaluating public value of e-Government (Karunasena & Deng, 2011, p. 11).

Ochara and Mawela's (2013) study on Enabling Social Sustainability of E-Participation through Mobile Technology

Ochara and Mawela (2013) researched on factors contributing to the sustainability of e-Government through mobile technology. In other words, they researched the role of mobile phone in fostering citizen-centric e-Government. Ochara and Mawela (2013) argued that the socially excluded citizens in Africa access the Internet using mobile phone. Africa is the leading continent in terms of growth in the adoption of mobile phones (Stork et al., 2013). Therefore, e-Government services that are compatible to mobile phones can help reduce the digital divide. Ochara and Mawela (2013) are of the view that; by aligning with local traditions, engaging marginalised communities and sharing goals among communities; e-Government can promote socially desirable goals that includes improving the quality of life. As such, failure to access e-Government would subsequently cut off citizens from government services and the overall governmental goals will not be met. Hence, Ochara and Mawela (2013) followed Klecun (2008) and conceded that citizens' participation in e-Government depends "on access, skills and attitude toward mobile technology use for e-Government services".

Ochara and Mawela (2013) collected data from urban settlement and evaluated the role of access, skills and attitude towards mobile government (m-Government). They found that socially excluded citizens are open to the idea of using mobile phones for accessing e-Government service despite a lack of formal structures and policies supporting m-Government in South Africa. It was also found that the ICT skills and attitude of citizens are important to the acceptance of m-Government. These findings suggest that access to ICT was not a critical factor for m-Government. This could be down to the fact that their data collection was limited to urban settlement (Ochara & Mawela, 2013). Ochara and Mawela (2013) went on to recommend that m-Government be aligned to local informal organisations in order to fast track the acceptance of e-Government and propel e-participation. Ochara (2008) shared a vision and need to take ideas from Western nations and re-conceptualise e-Government so that it aligns to the contextual environments of African governments.

2.3 Emerging ICTs and e-Government

There are different new ICTs that have emerged in the 21st century that can attract the interests of the populace such as Web 2.0, Web 3.0, social media, smart phones with 3rd and 4th generation capabilities. Likewise, the literature proposes different e-Government solutions that engage the use of such cutting-edge technology. These technologies are used in e-Government with the aim of promoting citizen-centric e-Government platforms. As already noted that citizen-centric e-Government is about delivering electronic services focusing on the interests and requirements of the citizens (Berntzen, 2013). Berntzen (2013) emphasized that involving users is an important measure to ensure that services become citizen-centric. This study's focus of e-Government is limited to the Government to Citizens (G2C) model of e-Government. As such, this section conducts a literature review of different emerging ICT technologies used to promote citizen-centric by governments.

Ochara and Mawela (2013); Misuraca (2009) noted the potential for mobile government (m-Government) as one of the channels for extending e-Government. Mengistu, Zo and Rho (2009) researched on opportunities and challenges associated with m-Government in developing countries. Their study concluded that m-Government should be implemented as an integral part of e-Government. In addition, Hung, Chang and Kuo (2013) are also of the opinion that m-Government can play an important role in citizens to government communication. They are of the opinion factors of m-Government use need to be identified if m-Government is to be successful. As such, Hung, Chang and Kuo (2013) used the Theory of Planned Behaviour to establish factors of acceptance use of m-Government. High external influence and interpersonal influence were found to positively influence the subjective norm. Self-efficacy and facilitating conditions are the necessary behavioural control factors needed for the successful use of m-Government (Hung et al., 2013).

In addition to studies on m-Government, there is a growing literature on how governments can incorporate the use of social networks in e-Government (Bertot, Jaeger, & Grimes, 2010; Picazo-Vela, Gutierrez-Martinez, & Luna-Reyes, 2012; Khasawneh, & Abu-Shanab, 2013; Mergel, 2012). Given that the majority of Internet users are using social media sites like twitter and Facebook, governments are trying to engage this technology among their e-Government initiatives. For example, governments in the USA, China and Mexico have taken leading roles in adopting and using social media sites as an alternative to normal government

websites in their e-Government initiatives (Bertot et al., 2010; Khasawneh, & Abu-Shanab, 2013; Mergel, 2012). Due to security concerns, China blocked international social media sites such as Twitter and Facebook and promoted the development of local social media sites that they have engaged in their e-Government policy. Using the USA as a case study, Mergel (2012) proposed different useful tools of using social media networks as platforms for e-Government. These tools include a policy framework, strategic guidelines, frameworks and architectures for implementing social media sites in government. The associated challenges and risks of engaging social media networks have also been investigated (Bertot et al., 2010; Picazo-Vela et al., 2012).

Another approach to e-Government besides using m-Government and social media sites is the use of government websites. Studies have since been done with the aim of promoting citizen-centric services through e-Government web platforms (Wang, Bretschneider & Gant, 2005; Gomez-Reynoso, & Sandoval-Almazan, 2013). Gomez-Reynoso and Sandoval-Almazan (2013) identified factors that should be considered if government web-platforms are to be adopted and used for e-Government. They also considered that in addition to the service provisions on the websites, there is need for creating awareness in order to promote citizen-centric e-Government.

2.4 The European perspective on e-Government

Europe is one of the leading continents in e-Government implementation dating back to the year 2001 (Ziemba & Papaj, 2013). The European Union developed a reference model that defines levels of e-Government complexities in terms of its ability to facilitate service delivery. The model, named: European Union Maturity Model of e-Government, is used to guide the implementation of e-Government by the European Union member states. This study acknowledges that there are other different e-Government maturity models that could be used by European Union member states such as those developed by the World Bank, Deloitte and United Nations, just to mention a few. Other European countries such as the United Kingdom (UK) developed their own version of the e-Government maturity model (Fath-Allah, Al-Qutaish & Idri, 2014). The UK Maturity model stipulate that e-Government adoption can be categorised into five stages as follows:

1st stage: basic site with basic information such as information about the government agency,

2nd stage: electronic publishing constitutes of a website with many pages showing services under provision.

3rd stage: electronic publishing involves a two-way communication e-Government that allows for the downloading and submission of files.

4th stage: the transactional stage involves the e-Government platform having the facilities to accommodate electronical transactions.

5th stage: joined up e-Government that is characterised by one stop shop. Government agencies are interlinked vertically and horizontally to facilitate the flow information during the facilitation of services (Fath-Allah, Al-Qutaish & Idri, 2014).

The UK Maturity Model is comparable to the European Union Maturity Model of e-Government. The European Union Maturity Model of e-Government has five levels that spell different characteristics of e-Government as follows:

Level 1 (information): is characterised by websites of government agencies or departments that mainly shows what one has to do in order to secure a government service. Thus, such websites are highly informational.

Level 2 (one-way interaction): e-Government at level 2 has a website with downloadable forms for applying for different government services. However, the actual application is a manual process that would see one download the forms, complete it and submit it at a government agency or department.

Level 3 (two-way interaction): this level of e-Government adoption involves electronic forms (e-forms) that can be completed and submitted electronically or online when one is applying for a government service. Ziembra and Papaj, (2013) explains that “application forms and e-forms, represents the possibility of taking forms electronically in order to obtain government services. However, the delivery of government documents, certificates, receiving decisions, decrees and the fees all take place in the traditional way” (p. 562). Everything thing is done online but one has to visit the respective government agency to collect the certificate or any requested service.;

Level 4 (transaction): this level is composed of e-Government were all activities of acquiring a service can be done electronically. For instants, the e-forms are completed and submitted electronically together with the payment for the service.

Level 5 (personalization): this level has pro-active and automated mechanisms to facilitate government service. “There is no need for citizens and business to request government services and they can obtain some government services and appropriate government documents automatically” (Ziemba & Papaj, 2013, p. 562). For example, if the bank wants a customer’s police statement or tax contribution declaration, these can automatically be completed by government agencies that play host to the relevant data and automatically send it to the bank.

The European Union Maturity Model of e-Government went on to identify 20 key government services that should be offered through e-Government. Having predefined common 20 services across Europe that should be facilitated by use of e-Government suggest that the European Union can benchmark the level of e-Government adoption of the member states.

Member states of the European Union reflected calls to adopt e-Government. For example, Estonia has advanced e-Service on all its government agencies (Kalvet, 2012). This also includes electronic voting (e-Voting). A favourable legislation towards ICTs, funding -with expenditure on ICTs contributing 1% to the national budget and the provision of ICT infrastructure are some of the factors that contributed to Estonia’s success in e-Government. Other countries that made great strides include Finland that has shown to have selected proactive and automated e-Services. Results from the European Union e-Government benchmarking process shows that the majority of her member states have attained 100% in terms of implementing the key 20 services that should be facilitated by e-Government (Ziemba & Papaj, 2013). However, other countries are showing to be on the right path towards the digitization of the specified 20 key government services. For example, Poland’s use of e-Government services in facilitating the identified 20 services was at 79% in 2010 (Ziemba & Papaj, 2013).

In addition to identifying government services that should be facilitated by electronic means, the European Union took a twist and focused on engaging its citizens in the development and implementation of e-Government. This aimed at promoting citizen-centric e-Government. Lee et al., (2008) researched on a Citizen oriented Evaluation of e-Government Services. The output of their study was a reference model outlining the process of engaging citizens in e-

Government implementation and a maturity model of e-Government according to the aspirations of the citizens.

2.5 The African perspective on e-Government

The African continent is currently seized with the adoption of e-Government adoption. The dominant research focusing on navigating challenges and opportunities associated with e-Government in Africa remains at its infancy (Dombeu & Rannyai, 2014). “A digital divide among the people, poorly offered e-Government services, and availability and access to the technology by the people are some of the critical issues faced with e-Government projects” (Joshi & Islam, 2018, p. 1). In addition, Africa is still going through the various reforms in its public sector to adhere to best practices (Burke, 2012). Table 1 below gives a picture on the extent of African e-Government complexity when compared to that of other countries. Most African countries are yet to adopt an e-Government that can transact e-Services. Furthermore, African countries’ e-Government are yet to be networked to reflect a “one-stop-shop” something that is common in Europe. In Africa, it appears e-Government simply mean electronic presence with a website giving simple information on how to get government service. Joshi and Islam (2018) went on to suggest a better understanding of the context in order to develop a suitable e-Government that will be of interest to the stakeholders.

Countries	Stage 1 Emerging Presence	Stage 2 Enhanced Presence	Stage 3 Transactional Presence	Stage 4 Networked Presence
Netherlands	100	75	70	88
Estonia	100	66	56	59
Costa Rica	94	55	37	44
Jordan	91	41	21	50
Namibia	69	32	14	18
South Africa	75	43	12	24
Indonesia	69	34	9	35
Senegal	78	32	5	15
Zambia	47	16	0	9

Table 1. The extent of e-Service delivery expressed as a percentage (%) for various countries (United Nations, 2014).

In general, some of the African countries have shown a commitment towards e-Government with the development of an e-Government roadmap (Verkijika & De Wet, 2018). In terms of e-Services, the top 8 countries that have adopted e-Service in e-Government include South Africa, Uganda, Rwanda, Mauritius, Kenya, Tanzania, Senegal and Lesotho (Verkijika & De

Wet, 2018). Overall, Africa remains a low adopter of e-Government according to the e-Government Development Index proposed by the United Nations (2016). African countries were the major contributor (81.2%) of all the countries that were rated low in terms of e-Government development (United Nations, 2016). Verkijika and De Wet (2018) supported these findings by conceding that less than 50% of Sub Saharan African countries' e-government scored less than 50% in terms of e-Service provision.

2.6 Namibia and e-Government initiatives

2.6.1 Namibian government structures

Namibia gained its independence from Apartheid rule in 1990 and assumes a unitary state whose constitution established a three-tier of governance that constitutes the central government, regional councils and local authorities. Namibia introduced a Decentralisation Policy of Namibia in 1998 that seeks to decentralise government activities to regional and local authorities. The aim of the decentralisation policy is to promote cultural and socio-economic development, encourage grassroots level citizen participation in decision-making and democratic processes. The activities of regional councils and local authorities were established through the Acts of parliament in 1992. The local authorities of Namibia are made up of municipal councils, town councils and village councils. These local authority structures are responsible for governing local affairs reporting to the Minister who is mandated for the respective regions.

2.6.2 Namibia's e-Government initiatives

Namibia has documented a number of policy frameworks and various initiatives towards promoting e-Government. Among them include the Information Technology (IT) policy, the e-Government Policy, Web design standards and guidelines and the e-Government Strategic Action Plan (eGSAP) that is guiding e-Government initiatives since the year 2014 to 2018. These policies and initiatives are discussed below:

2.6.2.1 The ICT/IT policy for the Public Service

Namibia has been pushing for computerization of its public service since before independence. However, during the early days only the Ministry of Finance and Military were

the focus areas of computerization. Other Ministries had to either rely on donors for computers or they purchase their own computers. After realizing that the process of acquiring ICT equipment was not being done properly, the government of Namibia established a Directorate of Public service Information Technology Management in 1991. The Directorate was later elevated to a Department in 2001. The establishment of the Directorate or Department was meant to help co-ordinate IT acquisition and use in government. A survey conducted by the Directorate in 1990s noted that there was an ICT skills gap among government employees with 95% of the Ministry having no staff members with ICT skills. This finding and the fact that Namibia is a signatory to the Millennium Declaration, and the Declaration of the Principles of Information Society and its Action Plan compelled the government to establishment an Information Technology Policy for the Public Service. The Policy was meant to co-ordinate ICT initiatives in government ranging from their acquisition and equipping government employees with the necessary ICT skills. Further to that, the policy guided the government in its implementation of the government computer network and formulation of strategies of implementing ICTs in government.

2.6.2.2 The e-Government Policy for the Public Service of Namibia

Namibia introduced its first e-Government Policy in 2005 at the auspices of the Millennium Declaration that seeks to address some socio-economic challenges faced by countries world over. It is believed that ICTs (e-Government) can be considered as a tool for addressing some of the Millennium Declaration Goals (Republic of Namibia, 2005). Namibia's e-Government policy of 2005 aimed to simplify administration, service delivery, and interaction between different parties including between government departments, citizens and business by use of electronic means (Republic of Namibia, 2005). Overly, the e-Government policy focused on four areas namely "service delivery, citizen empowerment, marketing enhancement and development, and exposure and outreach" (Republic of Namibia, 2005, p. 16).

2.6.2.3 The eGSAP for 2014 to 2018

The government of Namibia introduced an eGSAP that aims to guide e-Government initiatives from the year 2014 to 2018. The policy is guided by a vision:

“To be a Leading Networked Government, providing Client-centred, Transparent, Affordable and Efficient Services to All”

To meet its vision, Namibia, through the eGSAP, outlined five strategic goals shown in table 2.

Strategic thrust area	Code	Description and Goals
Impact and visibility	IMV	Aims to achieve streamline and efficient Government operations, as well as improved online services by 2018
Collaboration and networking	CRN	Aims to achieve networked OMAs sharing Government resources (data, infrastructure, services and solutions) through a collaborative approach by 2018
Consistency and standardisation	CNS	Aims to achieve a homogeneous, standardised and consistent approach, interfaces and interactions for developing and implementing solutions and rendering of services by Government by 2016
Training, education and research	TER	Aims to have: A skilled and able workforce to render public services, and Skilled and able citizens, communities and business participation in e-Government services
Foundational support	FNS	Aims to have well-founded laws, policies and institutions in place by 2015 to drive e-Government reform

Table 2: Strategic goals of e-GSAP for the Public Service (Republic of Namibia, 2014, p. IV).

2.6.3 Namibia’s e-Government readiness

The Namibia government through the eGSAP have shown its commitment towards citizen-centric e-Government by making provisions in its IMV of a one-stop shop for OMAs services and using ICTs that are preferred by citizens. Economic growth and other Namibian policies and regulatory environment have contributed to a drop in the prices of Internet access (Stork et al., 2013). However, the inclination of Namibia’s e-Government policy towards citizen-centric remains debateable given that the majority of thrusts or strategic goals focus on in-house development of OMAs’ ICT infrastructures and staff development with little mention of citizens development

There are a number of models and frameworks for assessing a country’s preparedness to use ICTs (United Nations, 2014; Republic of Namibia, 2014). Such models include the one in the

Republic of Namibia (2014), the internationally acclaimed e-Government Development Index developed by the United Nations (2014) and the Framework for a set of e-Government core indicators (Economic Commission for Africa, 2012) just to mention a few. This section reports on Namibia's e-Government readiness according to the criterion set out in frameworks by the Namibian Government and United Nations.

The Republic of Namibia (2014) reported on Namibia's e-Government readiness where readiness was determined by the availability of a policy framework that support e-Government, accessibility of ICTs, use of the right ICTs platform for e-Government purposes, having the needed capacity in terms of ICT skills and the willingness among various stakeholders to use ICTs. Based on the findings, Namibia was given an overall rating of 2.2 out of 4 e-Government readiness. Namibia was rated 2.11 out of 4 in terms of the availability of e-Government supporting policies; 2.71 out of 4 in terms of the accessibility of e-Government by different stakeholders; 1.95 out of 4 in terms of using different ICTs for e-Government purposes. Namibia is also rated 2.21 out of 4 in particular to the availability of the necessary ICT skills while the willingness of various stakeholders to use e-Government is rated at 2.05. As can be seen, the main challenges for e-Government development in Namibia are attributed to a lack of infrastructure and functional literacy. Further to that, access to government is skewed towards urban environments. Most rural residences are excluded from access and participation in e-Government due to a lack of access despite the high numbers of mobile phone and mobile phone users (Ministry of Information and Technology, 2015). Similarly, Stork et al. (2013) reports of a lack of ICT skills in Namibia and the cost of the Internet as some of the challenges faced.

The United Nations' (2014) e-Government Development Index (EGDI) with three dimensions for ascertaining e-Government readiness namely provision of online services, telecommunication connectivity and human capacity made findings that were close to those of the Republic of Namibia. Namibia is ranked in the middle EGDI, rated at 0.388 and positioned at number 117 world-over. However, Namibia is among the top ten in Africa in terms of e-Government readiness.

An analysis of the EGDl's dimensions shows that Namibia is rated at 0.3228 in terms of its online services that explores the nature and complexity of e-Government services. Online service index can be split into the following four stages:

Stage 1: emerging information services,

Stage 2: enhanced information services

Stage 3: transactional services

Stage 4: connected services

Findings by the United Nations (2014) suggest that Namibia's e-Government services are mainly concentrated at Stage 1 (69%) that focus on the provision of information to citizens. Few (32%) government websites are at Stage 2 where there are provisions of two-way communication that might include downloading and submitting forms online. Very few (14%) Namibian government websites have attained Stage 3 where only 18% have reached Stage 4. These findings complement the low content on the government websites as noted by the Republic of Namibia (2014). Tomlinson (2011) made similar observations as their analysis of at least twenty-four Namibian public sector websites led them to the conclusion that Namibia's government agencies websites are informational, interactive and rarely does one come across transaction-oriented websites.

In particular to telecommunication connectivity, Namibia has few people with fixed broadband with only 2.91 per 100 inhabitants having broadband (The United Nations, 2014). The majority of citizens have access to mobile phone communication with 107.79 having access per 100 inhabitants (The United Nations, 2014). This can be attributed to general economic growth, falling prices of telecommunication and Namibia's policy and regulatory environment (Stork et al., 2013). However, the United Nations (2014) recommends that Namibia focus on "bridging infrastructure gaps to provide an enabling environment for e-Government development".

The United Nations courtesy of findings from UNESCO did an assessment of Namibia's human capital dimension which measures a country's development in terms of expected years of schooling, average years of schooling, adult literacy rate and, a combined ratio of primary, secondary and tertiary enrolment rate. Namibia's human capital index is at 0.569. In 2007,

76.49% of Namibia's adults were literate (they could write and read), 69.42% of the school age were enrolled in primary, secondary and tertiary education (United Nations, 2014). Statistics also shows that Namibians take on average 11.27 years to complete their education. These findings are encouraging but there is still need for more effort towards human capital development. The United Nations (2014) reckons that building human capital and ICT literacy are some of the critical areas that would promote e-Government readiness in Namibia.

2.7 Conclusion

The chapter discussed the study's literature view on citizen-centric e-Government. It went on to motivate the idea that public sector reform theories can help in outlining the practice of citizen-centric e-Government. Accordingly, public sector reform theories namely NPM and joint-up government, and the public value paradigm were discussed. The chapter also discussed the implications of these public sectors reforms on IT investment within government institutions. This study sides with the public value paradigm. As such, selected studies that adopted the public value paradigm in assessing e-Government were discussed in the chapter. The reviewed studies identify different factors and attributes that could be considered when ascertaining citizen centric e-Government.

Emerging technologies and their impact on e-Government were discussed. These include social media; smart phones and 4th generation technologies just to name a few. The chapter went on to identify different initiatives focused on Namibia's e-Government practices. These included the policy framework and Namibia's e-readiness.

CHAPTER 3: THE PROPOSED RESEARCH CONCEPTUAL MODEL

3.0 Introduction

The previous chapter discussed the literature on e-Government. It also motivated the use of the public value theory when coming up with a citizen-centric e-Government. This chapter adds to the research by explaining how the study shall incorporate the public value theory in coming up with a citizen-centric e-Government. The aim of this study is to propose a model that ensures the inclusion of the interests and aspirations of citizens through e-Government. This is critical given that, previous studies show that the availability of e-Government services does not automatically translate to their use (Jaeger & Bertot, 2010a). As such, this chapter will explain the need for a model that aim to address e-Government problems from a citizen-centric point of view. The study's proposed model of citizen-centric e-Government and associated attributes are also explained in this chapter.

3.1 The rationale for a citizen-centric e-Government model

This section motivates the need for a citizen-centric e-Government model suitable for Namibia. The literature shows that e-Government consist of different stakeholders with different needs (Jaeger & Bertot, 2010a). Of all the stakeholders, it is the users who play a critical role that determines the success of e-Government hence the need for a citizen centric e-Government (Sorn-in, Tuamsuk & Chaopanon, 2015). Interestingly, current e-Government initiatives lack citizen centricity focus, something that limit their use as reflected by low electronic participation (Ochara & Mawela, 2013). A number of models and frameworks have since been proposed aimed at promoting citizen centric e-Government (Jaeger & Bertot, 2010a; Karunasena & Deng, 2013; Friedland & Gross, 2010; Osman, Anouze, Irani, Al-Ayoubi, Lee, Balc, Medeni & Weerakkody, 2014). Authors have focused on factors for improving electronic service (e-service) delivery while some have focused on user satisfaction (Osman et al., 2014). Some authors focused on factors of designing, implementing and evaluating citizen centric e-Government (Jaeger & Bertot, 2010a) while another growing research base has focused on the principles of public value as a determiner for citizen centric e-Government (Karunasena & Deng, 2013; Friedland & Gross, 2010; Bai, 2013). Even though there is a growing knowledge base on citizen centric e-Government that is aligned to principles of the public value theory, studies have proposed different factors that influence the generation of

public value. However, drawing from an African context, factors for promoting citizen centric e-Government have been thought to be a subject of e-Government's inclination towards supporting traditional approaches to participation in governance such as through "public baraza (East African term) or indaba (Southern African term), which means a council or conference for deliberations" (Ochara, 2012). In addition to that, some authors have looked at the adoption and use of technologies that would promote social inclusion in governance (Ochara & Mawela, 2013). This suggests that contextual factors and the technology play an important role in the success of e-Government.

The literature presents different models and frameworks that can be adopted to promote citizen centric e-Government. There seems to be a lack of consensus and conclusion on the subject as researchers suggest similar and different factors. Hence, these different models may pose a challenge to under resourced African countries as they look at adopting a framework or model for implementing citizen centred e-Government. As such, this study suggests a holistic model that incorporates factors for designing e-Government platforms and evaluation from a citizen perspective. This is motivated by the fact that, the current state of e-Government in Namibia, for example, shows that issues pertaining to the design and implementation of e-Government remain critical as reviewed in the previous chapter. However, once designed, these e-Government platforms need to be evaluated to make sure that the resultant services are citizen centric or meeting the aimed targets. The study agrees with Sigwejo and Pather (2016) that e-Government service presence will not guarantee their uptake hence a need to evaluate their use and usefulness. This study adopts the public value theory for its consideration on evaluating citizen centric e-Government. The study's view on citizen centric e-Government is limited to the provision of citizen-oriented services, that is, services that meets the citizens' demands and expectations in line with government policy and programs on service delivery.

3.2 The proposed model for citizen-centric e-Government

This study proposes a holistic citizen-centric e-Government model that encompasses the e-Government design and implementation, and evaluation component. The study adopts an empirically evaluated public value driven citizen-centric e-Government evaluation framework proposed by Karunasena and Deng (2013). Karunasena and Deng's (2013) framework is based

on a thoroughly tested public value in e-Government model by Kearns (2004) that has since been applied in different countries and sectors of the economy such as the United Kingdom's electronic health initiatives. However, this study is of the view that a model that focuses on evaluating e-Government may not be adequate to address challenges faced by developing countries in Africa given that the majority of the countries' e-Government presence remains low. As such, this study incorporates the e-Government design and implementation component that could guide governments on the design factors that should be in place in order to create a platform for generating public value through e-Government. The design and implementation, and evaluation components have to be considered from a citizen-centric perspective. The study argues that such a model could be useful to Namibia, a country that has had a sound e-Government policy framework but limited implementation that is characterised by a poor design something that pose a negative effect on e-Government efforts thus far. Tomlinson and Rabina (2011) summed up Namibia's e-Government status by stating that *"e-Government in Namibia presents a mixed picture. On the one hand, a well-designed national policy is in place, with leadership at a high level through the Office of the Prime Minister. The availability of computers and, especially, of mobile phones is growing. On the other hand, weaknesses in implementation seem to be holding back effectiveness e-Government, with unevenness across websites serving the public"* p7.

3.2.1 e-Government design and implementation component

The study's considerations of a citizen centric e-Government design and implementation is guided by propositions in Ochara and Mawela (2013), Jaeger and Bertot (2010a). Ochara and Mawela (2013) motivated the idea that common e-Government initiatives that are only compatible with computers or desktops may not be suitable for today's populace where users access the Internet via mobile phones. As such, they argued that the sustainability of e-participation is dependent on one's access, skills and attitude towards mobile phone technology. Similarly Jaeger and Bertot (2010b) noted that societies have significant gaps in terms of access to Internet and skills. These factors stimulate the digital divide among citizens. In addition, the study also considers some of the citizen centric e-Government design, implementation and evaluation strategies proposed by Jaeger and Bertot (2010a). Together, these factors are discussed next to reflect how they are important to Namibia's citizen centric e-Government.

3.2.1.1 Factors of e-Government design and implementation

This section discusses important factors that should be looked at when designing and implementing e-Government. The study argues that for e-Government to be citizen-centric and stand a chance to be successful, factors discussed in this section have to be considered. Based on the literature review of chapter two, these factors include citizens' means of access to ICTs, ICT skills, community-based partnerships, and information needs ICT infrastructure and attitude towards ICTs. These factors of e-Government design and implementation are discussed below:

Access. Ochara and Mawela (2013) proposed that better access to ICTs could reduce the digital divide. In support of this proposition, Jaeger and Bertot (2010a) commented that, "a system that resides on technologies to which the citizen does not have access will also guaranty failure." Jaeger and Bertot (2010a) went on to recommend that governments should understand technology access capabilities of citizens if they are to develop systems that meet their needs. The Namibian e-Government platforms are mainly informational and not mobile phone compatible something that can limit their accessibility (United Nations, 2014; Republic of Namibia, 2014). This is a factor of great concern given that few (2.91 per 100 inhabitants) Namibians have fixed broadband connection compared to those who have access to mobile phones (107.79 per 100 inhabitants) (The United Nations, 2014). These statistics confirm a finding that Africa is a leading continent in mobile phone adoption (Stork et al., 2013). Interestingly, mobile phones are now used to access ICT services with 80% Namibians accessing the Internet via mobile phones (Stork et al., 2013).

Further to that, issues pertaining to language and access to electricity are also critical factors that define the accessibility of e-Government services (Ochara, 2008). Even though English is Namibia's official language that is used in government communication and as a medium of instruction starting from secondary school education, Namibia has at least eleven ethnic groups with at least eleven different officially recognised languages (Peters, Winschiers-Theophilus & Mennecke, 2015). This suggests that the designing and implementation of e-Government, a Western idea and technology, has to factor in language complexities and avoid social exclusivity (Ochara, 2008).

These findings from different researchers point to the fact that Namibia needs to reconsider the design of its e-Government platforms and make them compatible with technologies citizens are using for accessing the Internet. The use of mobile phones in accessing electronic services has never been a doubt considering the mass adoption of mobile technologies in Africa such as M-Pesa in Kenya, South Africa and Nigeria (Ochara & Mawela, 2013) and the popularity of mobile money transfer in Namibia. The study argues that the success of e-Government is centred on the Namibian government's rethinking of its approach to the designing and implementation of accessible e-Government services. The study agrees with Ochara (2008) who states that "policy design issues for e-Government need to consider measures or modes available for accessing information from e-Government systems, especially through the national information infrastructure." Similarly, Criado and Gil-García (2013) supports this idea by indicating that governments should look for ways to promote the access of e-Government through mobile phones given their wide acceptance even in countries with low Internet penetration rates. Further to that the government need to look into the language used on its e-Government platforms given that Namibia is a multicultural country with at least eleven indigenous languages.

ICT Skills. A literature review by Ochara and Mawela (2013) noted that a shortage of ICT skills is one of the factors contributing to the digital divide. With Namibia moving towards a knowledge-based economy by 2030, it is expected that ICT skills will play an important role. Jaeger and Bertot (2010a) noted that "developing a Web-based e-government service that requires a broadband connection, high-end computer, and advanced technology competencies will immediately exclude a segment, or multiple segments, of the intended service population." It was noted that a push for transparency by the Obama administration through e-Governance was not going to be possible unless if citizens were educated, among other factors, on how to make use of these e-Government platforms (Jaeger & Bertot, 2010b). Van Deursen and Van Dijk (2010) in Ochara and Mawela (2013) found that such internet skills can include: "Operational Skills: The skills to operate computer and network hardware and software; Information Skills: The skills to search, select and process information in computer and network sources; and Strategic Skills: The capacities to use these sources as the means for specific goals and for the general goal of improving one's position in society". To affirm the importance of skills, the Republic of Namibia's (2014) e-GSAP for the Public Service assets

that Namibia aims to have a “skilled and able citizens, communities and business participation in e-Government services.” However, one of the limitations of the e-GSAP in this regard is that the government’s focus on training, education and research on ICTs remains limited to civil servants yet citizens are somehow expected to be aware and have the know how to operate e-Government and associated services (Republic of Namibia, 2014).

Community-Based Partnership. Making reference to the United States of America, Jaeger and Bertot (2010a) recommended that citizen centric e-Government have to integrate into community-based partnerships such as public libraries to increase its acceptance. On the other hand, Ochara (2008) suggest that e-Government need to be understood within the African context and explore ways to make it relevant. This can be achieved by building social structures at community level that support ICTs for e-Government use. In Namibia, this could be facilitated through schools distributed across the country. Such an approach limits the practice of “the government ‘off-loading’ e-Government services, instructions and support to community organizations without coordinating, training, and involvement” something that is less likely to promote citizen-oriented services (Jaeger & Bertot, 2010a). Training, education and research is one of the five key strategic areas as highlighted in the e-GSAP for the Public Service (Republic of Namibia, 2014). Through its Science, Technology, Engineering and Mathematics (In-STEM) programme, Namibia is promoting the growth of science and technology skills across the nation with primary and secondary schools expected to play a key role. Hence, the study suggests it would increase the acceptance of e-Government services should e-Government be distributed through public institutions like educational institutions, public libraries and community halls.

Citizen information needs. This study agrees with Jaeger and Bertot (2010a) that if e-Government is to be citizen centric, it is important that the designers of e-Government understand the citizens’ information needs. Jaeger and Bertot (2010a) went on to state that “governments need to understand how citizens:

- Seek information on a particular topic or issues (strategy)
- Acquire information on a topic or issue (acquisition)
- Solicit expertise (source)

- Use of that information (application)”

In addition, a study by Mergel (2012) reports of changes in the way citizens search and consume information. She noted that a sizable amount of United States of America (USA) citizens no longer rely on accessing information from the government website, rather they make use of the social media. Thus, there seems to be a growing trust in information received via a friendship network such as Facebook (Mergel, 2012). Further to that the use of social media has gained popularity across different age groups, income groups, culture groups, gender and geographic location. Accordingly, the Namibian government need to design e-Government services that reach out to technologies used by its citizens for accessing and sharing information. A study by Stork et al. (2013) found that Namibian Internet users access Internet over the phone for purposes of engaging on social media sites like Facebook. A similar finding by Peters et al. (2015) shows that Facebook is popular among Namibian University students. It was observed that students mainly access Facebook using their mobile phones.

ICT infrastructure. The provision of ICT infrastructure in economically developing countries has been a concern for some time. The majority of developing countries, Namibia included, are dominated by rural areas where there is still sparse connectivity and have no electricity (Gumbo et al., 2012; Pade et al., 2009). Hence, it is important that Namibia look into the provision of ICT infrastructure. Further to that, research findings suggest that a few Namibians have access to fixed broadband something that calls for a need to widen Internet access to other regions. Sigweij and Pather (2016) note that for a successful citizen centric e-Government, there is a need for improving Internet penetration, accessibility and increasing the use of multichannel. This is critical to Namibia given a low Internet penetration in the rural areas that is further complicated by the lack of electricity in other sections (Republic of Namibia, 2014). It has already been noted that most rural residences are excluded from access and participation in e-Government due to a lack of telecommunication connectivity for broadband despite the high numbers of mobile phone and mobile phone users (Ministry of Information and Technology, 2015).

Attitude. Attitude towards ICTs use is one of the factors considered important in determining the likelihood of e-Government use (Ochara & Mawela, 2013). For example, the Republic of

Namibia (2014) notes that the willingness among various stakeholders to use ICTs can play an important role in the use of e-Government. Attitude, arguably, reflects the extent of shift in the traditional cultural belief that ICTs can be used to facilitate the provision and access to e-Services without the need for human physical contact. Therefore, attitude is considered one of the factors that could influence the design and implementation of citizen centric e-Government. The study suggests that the government need to understand the attitude towards technology in its designing and implementation of e-Government. Such information can be critical in influencing the citizens' attitude towards the use of ICTs in government.

3.2.1.2 Factors of e-Government evaluation

The previous section discussed factors that could play a critical role in informing e-Government services designers and implementers on how to structure and distribute the respective electronic services (e-Services). As indicated earlier, the study argues that maintaining an e-Government presence will neither guarantee its use nor success. Hence there is a need for e-Government citizen centric evaluation that could inform the extent of use as determined by the value e-Government creates to citizens. The study adopts and uses a framework of evaluating e-Government citizen centric proposed by Karunasena and Deng (2013). Below is a discussion of factors for evaluating e-Government through which the generation of public value can be measured:

Delivery of public services (DPS). Three factors play an important role in determining DPS. These include the quality of information, e-Services and user-orientation of e-Government (Karunasena & Deng, 2013). For instance, studies have shown that citizens expect to find accurate information that is timely disseminated, expect to be able to perform a two-way transaction/communication using simple e-Services and expect to use e-Government websites that are easy to remember (Criado & Gil-García, 2013; Karunasena & Deng, 2013). Shea and Garson (2010) in Mergel (2012) also noted the need for a “one-stop shopping or transaction-oriented websites”. Mergel (2012) went on to recommend real-time two-way information communication between government and citizens via e-Government. As indicated earlier, Namibia's current e-Government is characterised with static information that need to be revamped if they are to deliver public service to the citizens. The Republic of

Namibia (2014) reports that impact and visibility is one of the strategic objectives in the e-GSAP something that would complement the need for citizen-centric service delivery. This could be implemented through one-stop shop portals that include the delivery of timely and accurate information.

The efficiency of public organizations (EPO). A number of factors that could contribute to public value through EPO have been proposed. For example, Karunasena and Deng (2013) found improving the access of ICT infrastructure that focuses on enhancing public operations a key element to the generation of public value. It was also noted that equipping public organisation employees with ICT skills and re-engineering public organisation business processes around principles of citizen centric adds to public value. However, it is important to realise that government's initiatives of using ICTs to save money by cutting employees is not considered as a measure for creating public value (Karunasena & Deng, 2013). Hence, it is argued that Namibia should look into critical factors that focus on improving efficiency and effectiveness in its service delivery by using e-Government. For instance, the government can align its e-Government programs with grassroots level social activities like the traditional approaches to governance participation such as the regularly held indaba, "a council or conference for deliberations" (Ochara, 2012). Furthermore, the government can improve its responsiveness to citizens by using e-Government something that will result in value creation. For instance, the government can make use of ICTs like mobile phones to reach out to citizens based in different locations such as giving feedback for applied services.

Achievement of socially desirable outcomes (ASO). Research findings by Karunasena and Deng (2013) suggest that the government can use e-Government and create public value to citizens by meeting their social desirable outcomes. These social desirable outcomes differ according to the country in question. In reference to Sri Lanka, it was noted that citizens value education such as electronic content with "children education, low cost ICT training, applications that help to develop social and network skills, and availability of resources to develop the ICT skills of citizens" (Karunasena & Deng, 2013). When it comes to South Africa, the socio-economic desires would include that of addressing imbalances caused by the injustices of the Apartheid as indicated in the Batho Pele (people first) framework of 1997. In addition, government trust, privacy of their sensitive information in e-Government systems

and the respect of law are some of the desirable social goals citizens' value. Similarly, Namibia can use e-Government to advance social desirable goals such as those in training, education and research, and other major government reform programs such as the Harambee Prosperity Plan. In addition, citizens can derive benefit from using e-Government such as reducing travelling costs, service accessibility 24/7 etc.

3.2.2 A model of e-Government design, implementation and evaluation

Figure 2 shows the summary of a model of e-Government design, implementation and evaluation suitable for Namibia. The model emphasises that, if Namibia's e-Government is to be a success, it is important that the government centers the design and implementation of its e-Government around the accessibility of ICTs, technologies used by citizens and preferred languages; citizens' ICT skill development; look into partnering e-Government with community-based partnerships like schools, taking into account citizen's information needs and making provisions for ICT infrastructure. In addition, an understanding of citizens' attitude towards ICTs is important in order to design e-Government awareness measures. The study further argues that, the resultant e-Government as informed by design and implementation factors should be able to create public value in three ways namely the delivery of public services, efficiency of public organizations and achievement of socially desirable outcomes. Consequently, achieving these three factors would reflect on the success of e-Government.

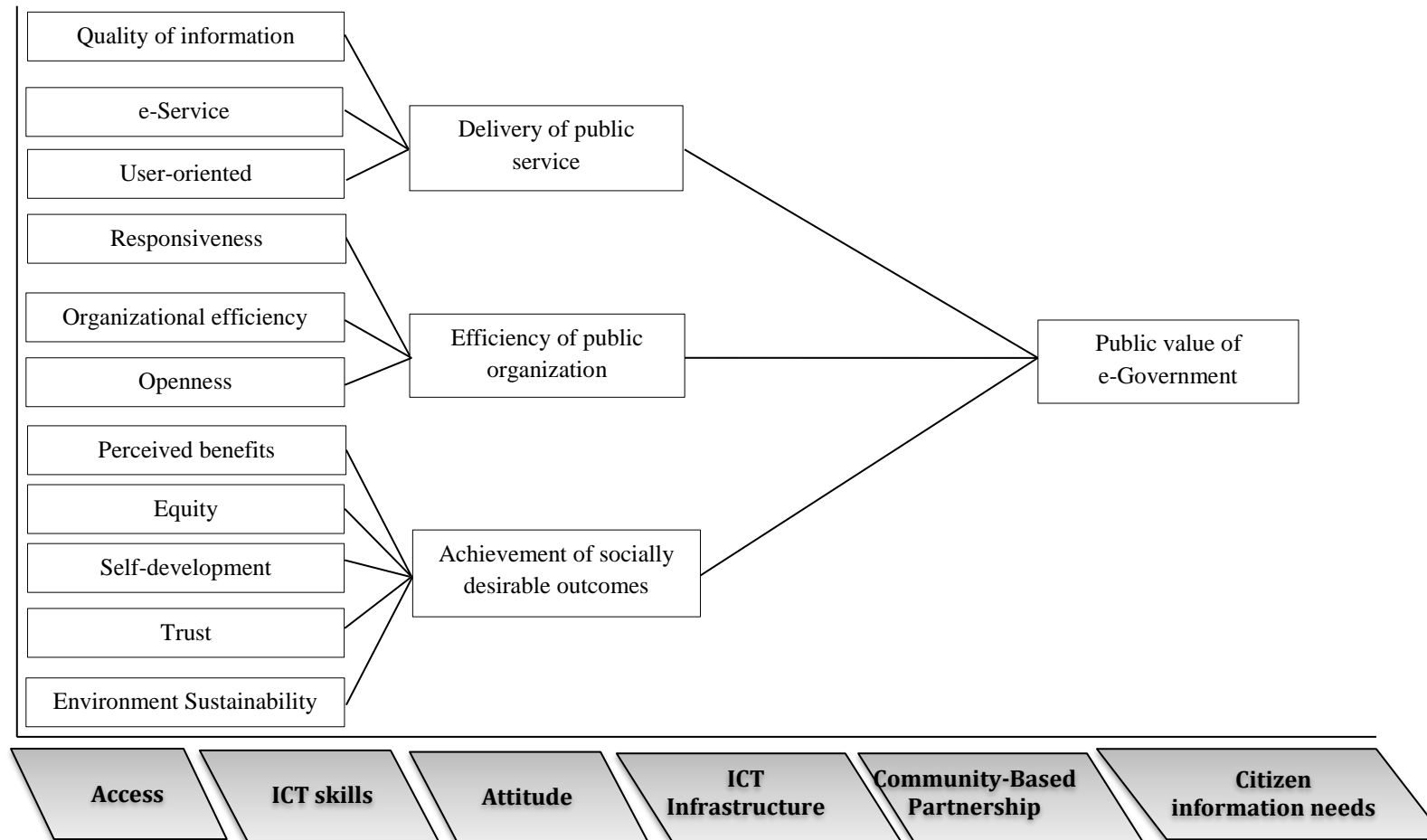


Figure 2. A model of e-Government design, implementation and evaluation

3.3 Conclusion

The chapter argued for its citizen-centric e-Government approach towards addressing e-Government challenges faced in Namibia. Public reform theories were used to justify this research's view for generating public value through e-Government. This chapter used an understanding of the literature on citizen-centric e-Government as discussed in chapter two. Based on a literature review, the study proposed a model of citizen-centric e-Government that is suitable for Namibia. The study argues that, while it is important to evaluate the extent or effectiveness of e-Government's citizen-centric, it is also important to give government guidance on important factors that need to be looked at when designing and implementing e-Government. Studies have shown that governments in Africa still struggle to implement tailor made e-Government designs that align to technologies used by citizens (Ochara & Mawela, 2013; Ochara 2008). Accordingly, the proposed model gives an outline for factors that are critical in e-Government designing and implementation, and evaluation. The study agrees with the current state of literature that suggests a need to evaluate the extent to which an e-Government platform is citizen-centric. This chapter adopted DPS, EPO and ASO as measures for evaluating e-Government.

CHAPTER 4: RESEARCH METHODOLOGY

4.0 Introduction

The previous chapter used a literature review to propose a research model that shows factors contributing to citizen centric e-Government. This chapter explains a research methodology that guides the conducting of the study. Thus, this chapter explains methods used to guide the collection and analysis of secondary data. This study assumes a Mixed Method Research (MMR). MMR was established at the beginning of 2000 and is experiencing a steady growth in use within the computing research field (Caruth, 2013). This chapter starts with a discussion of the research paradigm followed by a justification of using MMR. The chapter goes on to explain the research design. Measures for evaluating the validity of the study's conduct of MMR are also explained.

4.1 Research paradigm

The literature suggests quantitative (positivist) and qualitative (interpretivist) are the oldest research philosophies and paradigms (Leech & Onwuegbuzie, 2009; Venkatesh, Brown & Bala, 2013). These two research paradigms' histories is mainly characterised by opposing views on what constitute the truth and how the truth could be understood (Venkatesh et al., 2013). For example, the positivist paradigm argues that there is only one truth that is independent of the researcher hence it can be standardised or generalised. However, the interpretivist paradigm argues that there are multiple truths which are subject to one's interpretations. According to interpretivists, the truth can be generalized within a context (Caruth, 2013).

However, MMR brought a different perspective on qualitative and quantitative research as it motivates the use of both methodologies in a single research (Caruth, 2013). Studies have proposed guidelines in favour of using qualitative and quantitative research methods together (Leech & Onwuegbuzie, 2009; Venkatesh et al., 2013). There are suggestions that research paradigm for MMR could include pragmatism, transformative–emancipatory and critical realism (Venkatesh et al., 2013). The conducting of this study is guided by the pragmatism research paradigm. While Venkatesh et al. (2013) acknowledge that critical realism is the most appropriate research paradigm for MMR, they do acknowledge that the other two paradigms are equally good and the choices of a paradigm should not influence the decisions on when to use MMR. Pragmatism assumes abduction reasoning that combines

both quantitative research's deduction and qualitative research methods' induction. This study's use of abduction is reflected by a literature review that proposed a model of citizen centric e-Governance. The proposed model shall be evaluated in Namibia using an abductive approach. However, the study's use of qualitative data makes provisions for inductive thinking that may lead to new findings from the gathered data. These activities sum up the study's use of abduction.

4.2 Justification of this study's use of MMR

The use of a MMR should be justified to demonstrate its methodology's suitability to the study (Caruth, 2013; Venkatesh et al., 2013). Venkatesh et al. (2013) states that explanations showing why MMR is appropriate for the study is one of the three critical areas in the conduct of a mixed method research. The decision to use a MMR is guided by a study's research objectives, question and context. This study's use of the MMR is down to the following reasons:

Section 3.1 of the previous chapter reasoned that there is a lack of a holistic model of citizen centric e-Government that addresses factors for designing e-Government platforms and evaluation. As a result, the fragmentation in the literature motivates this study to use the MMR such that it provides "a holistic understanding of" the phenomenon (Venkatesh et al., 2013, p. 23). Accordingly, MMR shall assist a better understanding of the roles played by the context in influencing citizen centric e-Government. This is important in e-Governance where previous research findings have shown that a government's commitment towards e-Government alone is not enough to increase citizen participation or online engagement (Jaeger & Bertot, 2010b).

This study's model was arrived at through the guidance of theories and models that were attained at using data in both developing country: Sri-Lanka and developed country: United States of America (Jaeger & Bertot, 2010a; Karunasena & Deng, 2012). As such, this study's context presents a unique context that requires a holistic approach to the understanding of factors of citizen centric e-Governance. For instance, Namibia presents an array of unique culture among citizens as reflected by different languages and ethnic groups, dominance of rural area and an upper-middle economic class (Peters et al., 2015).

In addition, MMR is used to ensure completeness as suggested by Venkatesh et al. (2013). The study's desire for completeness is reflected in its research question: "How can e-government services delivery in Namibia be more citizen-centric?", something that points to a need for "qualitative data and results" to provide "rich explanations of the findings from the quantitative data" (Venkatesh et al., 2013, p. 26). The research question allows qualitative research to explore how e-Government can be enhanced in such a way that it becomes citizen centric to the citizens of Namibia.

4.3 The research design

Philliber, Schwab and Samsloss (1980) in Yin (2003) states that "a research design is a blue print of research, dealing with at least four problems: what questions to study, what data is relevant, what data to collect and how to analyse the result" (p. 21). The research proposal explained the research questions for this study. Hence, the literature review looked at relevant data in line with research questions that were outlined in the research proposal. This part of the research design focuses on the general design that informed the application of MMR, data collection and analysis.

4.3.1 MMR design for this study

Leech and Onwuegbuzie (2009) observed that the conducting of MMR can be represented on a research continuum. A research continuum shows that, research could be conducted following a monomethod design where there is no mixing of research views. Thus, research conducted following any "one end of the continuum, involve the exclusive use of either quantitative or qualitative research techniques in a study. Once a study combines quantitative and qualitative techniques to any degree, the study no longer can be viewed as utilizing a monomethod design" (Leech & Onwuegbuzie, 2009, p. 265). Figure 3 summarises how this study assumes its conduct of mixed methods as shown by moving from either end of the continuum, something that would have resulted in monomethod design. A study's use of mixed methods is reflected by assuming both qualitative and quantitative research methods approaches to defining research objectives or the type of data to be gathered or data analysis methods to be used. This study collected both quantitative and qualitative data. As such, the data analysis methods used are aligned to both qualitative and quantitative research views. By so doing, this study it can be said the study uses a mixed method research.

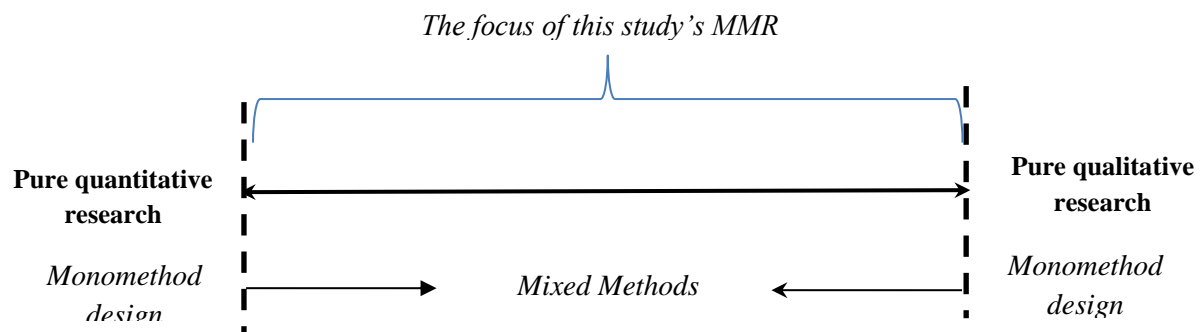


Figure 3. Mixed methods and monomethods design according to explanations by Leech and Onwuegbuzie (2009).

Studies on mixed method research suggest that MMR could be done following a sequential or concurrent design (Fetters, Curry & Creswell, 2013; Leech & Onwuegbuzie, 2009; Venkatesh et al., 2013). Leech and Onwuegbuzie (2009) went on to state sequential or concurrent design could be done as “partially mixed or fully mixed”. Sequential design involves the use of data collected using one research to inform the second phase of data collection using another research view. For example, a study by Kaisara and Pather (2011) used a sequential design for their MMR in which an interpretive view was to collect initial qualitative data to establish factors of e-Government’s e-Service followed by a quantitative survey that was done to confirm factors found in qualitative data.

However, this study uses the concurrent design whereby “qualitative and quantitative data are collected and analyzed during a similar timeframe” (Fetters et al., 2013, p. 2137). This study’s use of the concurrent design assumes Leech and Onwuegbuzie’s (2009) “fully mixed concurrent dominant status design: F2” as shown in their mixed method research topology shown in Figure 4.

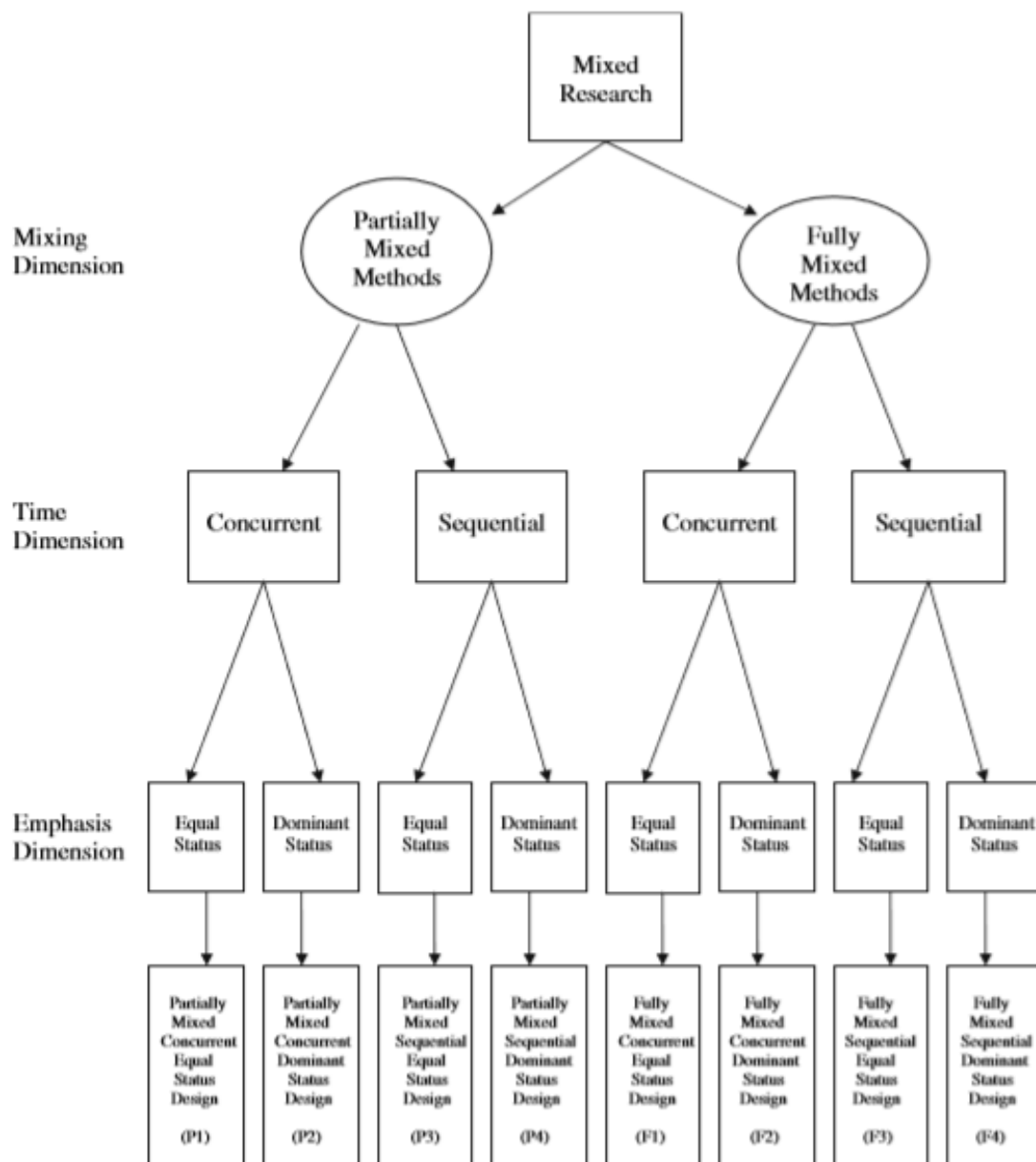


Figure 4. A topology for mixed methods research design (Leech & Onwuegbuzie, 2009, p. 269).

This study's use of the fully mixed concurrent dominant status design can be explained by the fact that, the study collects both qualitative and quantitative data concurrently. However, this study uses qualitative data to explain questions involving the "hows" and "whys" the phenomenon under study is behaving in a certain manner as revealed by quantitative data. Thus, while findings from quantitative data are given more weight, findings from qualitative data are used to explain and justify findings from quantitative data. By so doing, this study attempts to offset limitations of either quantitative or qualitative research. Where there are,

diverging views from quantitative and qualitative data, further examinations can be done to improving the understanding of the subject.

4.3.2 Research methodology implementation

This study aims to investigate how the Namibian e-Government could be more citizen centric. Section 4.3.1 of this Chapter indicated that this study's MMR assumes a concurrent approach in data collection and analysis. As such, this study separately gathers quantitative and qualitative data. The selection of questions in interviews and questionnaire were guided by the components of the proposed model of Chapter three. This study's use of a concurrent mixed design follows explanations by Hesse-Biber (2010) that is shown in Figure 5.

In addition, Venkatesh et al. (2013) recommend that qualitative and quantitative data analysis in mixed methods should be done separately following standardised approaches within the methodologies. As indicated earlier, this study used qualitative research findings to support research findings from quantitative research. Procedures of data collection and analysis of qualitative and quantitative data are explained next.

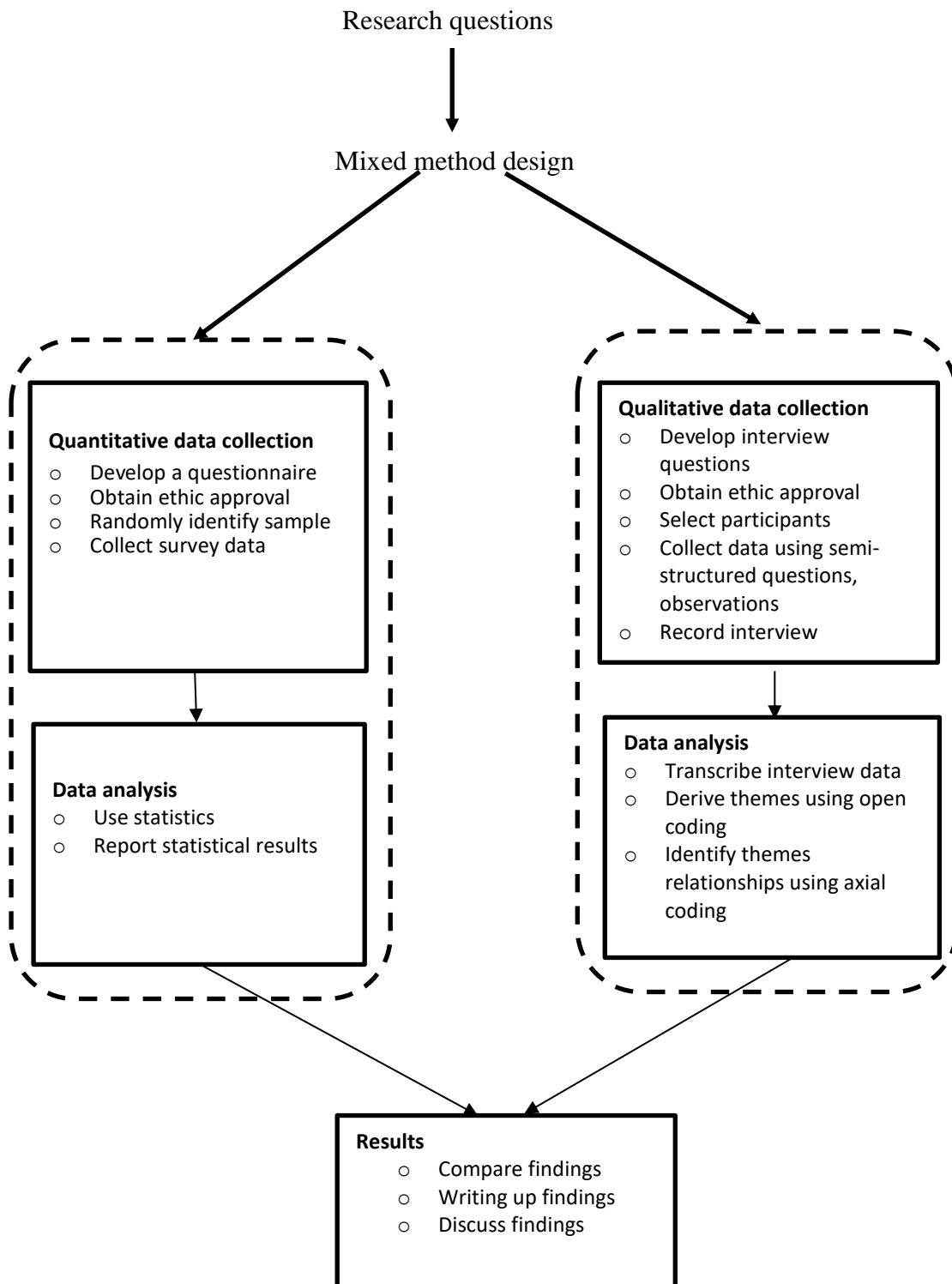


Figure 5. Concurrent mixed method design (Hesse-biber, 2010, p. 69).

4.3.2.1 Target population

The target population for gathering qualitative and quantitative data consist of government officials at two selected Namibian Government Ministries and Agencies (OMAs) and citizens in different regions of Namibia. These Ministries have at least 1300 employees and have a number of interactions with Namibian citizens. These Ministries also have websites that offer

e-Government services. The focus is on examining the processes and benefits of the recent innovation initiative by the Namibian Ministries that are piloted and currently offering services online. In addition, citizens were included in the study so as to establish their perception on e-Government services offered by the selected Ministries. Namibia has a population of approximately 2, 280 716 million inhabitants (NSA, 2012). Namibia is divided into 14 regions with a regional capital in each of the regions (provinces). The population is unevenly distributed across the country as about 60 per cent of the inhabitants live in the northern region while the south and coastal areas are almost densely populated. As such, citizens from both the rural and urban areas were considered in this study.

4.3.2.2 Implementation of the qualitative methodology

Qualitative data was gathered to evaluate research questions explained in the proposal. The literature review and a proposed model in Chapter three were used to guide the selection of interview questions. This research believes that a public value approach can address the citizen-centric problem on e-Government in Namibia. As such, structured questions that were used in this study were derived from the three perceptions of Public Value Creation shown in the model of Chapter three. These include a perception to deliver quality service, operate effective public organisations and achieving socially desirable outcomes through e-Government. This study adapted the interview questions of Karunasena (2012). In addition, observation and document analysis is used to improve the understanding of qualitative data and e-Government practices in Namibia. The Appendix C shows the interview questions that were used to gather qualitative data for this study.

It should be noted that additional qualitative data was gathered to evaluate the proposed model. The conducting of the evaluation of the proposed model was based on a prototype mobile application software. Thus, findings from data analysis were used to inform the design of a prototype as explained in Chapter 7. This section also explains procedures that were taken to gather data for evaluating the prototype.

4.3.2.2.1 Sampling method

A sample is a subsection of the population considered for inclusion in a study (De Vos, Strydom, Fouche & Delport, 2015). Participants that were engaged during qualitative data collection were identified through a purposive sampling method. Purposeful sampling is often

used in qualitative research as it allows for the identifying and selecting “information-rich cases for the most effective use” during data collection (Palinkas, Horwitz, Green, Wisdom, Duan & Hoagwood, 2015, p. 534). Typical cases or participants with the knowledge of e-Government initiatives at targeted Ministries were selected (Palinkas et al., 2015). Government officials working at the two selected OMAs in leadership, operational positions were considered for interviews. In addition, citizens that were found seeking services at the selected Ministerial offices were invited for interviews. These participants were randomly selected. Government officials who took part in the study should have at least two years of work experience in the Ministry. The sample size of interviewees was determined by reaching the saturation point in data collection. The saturation point shall ensure that most of the relevant data is gathered. This approach was used during primary data gathering for assessing the proposed model and for gathering data during the evaluation of the prototype.

4.3.2.2.2 Data collection and analysis

Government officials who were identified as potential interview participants were sent an invitation in advance. Requests for an interview appointment was made verbally and electronic mail. Once the interview was agreed upon, the researcher visited each participant at his or her offices for a face-to-face interview. The researcher is based in Windhoek; hence, where possible, some interviewees from the regions were met in Windhoek after they had travelled for work related activities. All interviews were recorded (Karunasena, 2012) and informed consent to conduct the interview as well as record it. Qualitative data analysis started with the transcribing of recorded interviews. This stage saw responses from every participant written down separately. Once transcribing was done, data analysis moved on to open coding. Strauss & Corbin (1991) in Smolander (2017) defines open coding as "the process of breaking down, examining, comparing, conceptualizing, and categorizing data" (p. 14). Therefore, open coding was used to identify key themes and categories emerging from interview questions. Findings from observations and document analysis were used to support interview findings. Document analysis included the reviewing of policies on e-Government and an analysis of platforms that facilitate e-Government services in Namibia. Open coding was followed by axial coding. Axial coding involves the establishment of relationships between categories. Axial coding was done to answer questions on factors influencing certain behaviour or conditions that would lead to a particular finding and strategies assumed by e-

Government users as suggested by Smolander (2017). Findings from coding shall be used to support quantitative research findings.

4.3.2.3 Implementation of the quantitative methodology

The research collected quantitative data for addressing research questions in Chapter one. Questions that were put in the questionnaire were guided by factors of e-Government that are shown in the proposed model of Chapter three. However, this study adapted questions in Karunasena (2012). Questions in the questionnaire are open, close ended with some based on a Likert scale. Open ended questions were meant to allow participants to give their own views on any additional elements they expected on e-Government. In addition, close ended questions and those based on a Likert scale were used to evaluate findings from secondary data that were made during the literature review. Close ended questions simplify data coding during analysis (Neuman, 2014). The study used a five-point Likert scale where a five represented “strongly agree” while a one represented “strongly disagree”. The Appendix B shows a copy of the questionnaire that was used in this study.

The questionnaire can be separated into three categories namely Section A, B and C. Section A has closed ended questions for gathering demographic data. Section B is made up of Likert scale-based questions for assessing factors contributing to citizen-centric e-Government. This study’s view on citizen-centric e-Government was evaluated based on three factors namely the quality of e-Government service, the need for efficiency in e-Government and e-Government’s possibility to address social desirable outcomes. Section C is made up of open-ended questions for participants to input their views and perceptions on e-Government. Section C aims to identify emerging views from the participants something that would add to what is already in the literature.

4.3.2.2.1 Sampling method

Respondents for quantitative data were identified using purposeful random sampling. Palinkas et al. (2015) this technique can be used to improve the credibility of findings. As such, this study’s use of purposeful sampling limits the distribution of questionnaires to employees and citizens queuing for services at selected OMAs. Respondents were identified from different regions in order to represent Namibia’s population distribution. Only those with

more than two years of work experience at the identified OMAs were considered in the questionnaire survey.

4.3.2.2.2 Data collection and analysis

Hard copies of the questionnaire were distributed across Namibia during data collection. Respondents based in urban and rural areas were targeted. Online surveys are likely to be less effective given a poor distribution of Internet access across Namibia with 60% of the population staying in rural areas where Internet access is sparsely distributed (NSA, 2011). Government officials who were engaged to respond to the questionnaire were given two weeks to complete the questionnaire. Reminders were sent by text messages encouraging respondents to complete questionnaires. However, citizens who were engaged during the questionnaire survey were asked to complete the questionnaire on the spot. Descriptive statistics were used for data analysis. These include the mean, median, and standard deviation. The distribution of respondents was used to arrive at a decision.

4.4 Reliability and validity

Research should agree with different measures of reliability and validity. These measures determine the extent to which a study can be seen as credible or believable (Neuman, 2014). Neuman (2014) defines reliability as a measure of a research methodology's consistency in terms of giving the same results if repeated under the same conditions. Validity is the measure of how well an idea fits in the real world (Neuman, 2014). When using an MMR, a study should demonstrate activities of reliability and validity that were assumed in qualitative and quantitative research (Venkatesh et al., 2013). These activities are explained next.

4.4.1 Reliability

A pilot research using multiple measures can improve a study's reliability (Neuman, 2014). Accordingly, this study used different sources of data for each of the three citizen-centric factors defined in the research model of Chapter three. Furthermore, the study used a questionnaire that was based on questions that were adapted from tried and tested questionnaires. These measures improved the reliability of quantitative data. In addition, a pilot survey was done to improve the understanding and interpretation of the study's questionnaire and interviews. The study's use a wide range of techniques for data collection –interviews, observations and questionnaires improve reliability. Furthermore, a prototype

application was designed representing the proposed model in Chapter 3. The proposed prototype was exposed to participants who tested it and gave their opinion through interviews.

4.4.2 Validity

The literature suggests different measures for qualitative and quantitative methods (Neuman, 2014; Venkatesh et al., 2013). Common methods for measuring validity in quantitative research are internal and external validity. Internal validity measures the extent to which the design of the study accurately reflects a relationship between the dependent and independent variable (Venkatesh et al., 2013). Internal validity ensures that there are no other alternative explanations of the results besides a relationship that exists between the dependent and independent variable. This study derived its measures from the literature review to ensure internal validity. External validity measures the extent to which findings from the study can be generalised to other cases. This study used a tried and tested questionnaire to ensure quantitative research findings external validity (Venkatesh et al., 2013). In addition, the study's sample of approximately two hundred participants is consistent with those reported in the literature. As such, it is expected to improve external validity.

Lincoln and Guba (2000) in Venkatesh et al. (2013) proposed measures for evaluating the extent to which a qualitative research was done thoroughly. These measures are the opposite of quantitative validity measures namely credibility (internal validity), transferability (external validity) and confirmability. To enhance the credibility of qualitative research findings, this study used different sources (observations, interviews and document analysis) of data to complement findings. In addition, transferability will be achieved by giving a description of this study's cases (Venkatesh et al., 2013). By so doing, it is expected that one would therefore know where this study's findings are applicable. Venkatesh et al. (2013) defines confirmability as "the degree to which the results could be confirmed or corroborated by others" (p. 33). Accordingly, this study's use of MMR ensures that quantitative research findings shall corroborate qualitative research findings.

4.5 Ethical consideration

The study secured approval from the Faculty Ethical Research Committee at NUST. Additional approval from relevant OMAs were secured in order to pursue the research and collect data

within their jurisdiction. The letter of approval was shared with the relevant regional offices during data collection. A letter of informed consent was issued to all respondents and participants for them to familiarise with the study and sign an acknowledgement of their willingness to participate in the study. The participants were provided with sufficient information about the research that the research is being carried out for the purpose of academic purpose and to improve the quality of service delivery. Anonymity and confidentiality will be maintained throughout the study.

4.6 Conclusion

This chapter explained the study's use of MMR. It was indicated that the study used a concurrent MMR where both quantitative and qualitative research methods were used in data collection. However, quantitative research is the dominant research; hence, qualitative research shall be used to support findings from quantitative research. The Chapter explained the research design of the study. The population and samples selection criteria in qualitative and quantitative research were explained. The chapter went on to explain data collection and analysis techniques. Measures that should be adhered to in order to achieve reliability and validity were explained.

The next Chapter explains research findings based on this Chapter's methodology.

CHAPTER 5: RESULTS

5.0 Introduction

This chapter presents the research findings from data collection. Data was gathered using a research method explained in Chapter 4. This Chapter presents results on demographics and citizen-centricity of e-Government.

5.1 Demographic results

This study used a mixed methodology. Data was gathered by use of a questionnaire and interviews. Respondents who took part in the questionnaire survey came from different regions of Namibia. Employees from two Ministries were targeted (MHAI and MTISMED). This study aimed to engage 250 respondents in the questionnaire survey. Of the 250 questionnaires that were sent out, only 188 respondents took part in the questionnaire survey giving a response rate of 75%. Furthermore, 8 participants were engaged through interviews. This section reports on demographics focusing on gender, employment status and level of education of the engaged respondents.

5.1.1 Gender distribution of participants

Respondents were asked to indicate their gender. The distribution of participants according to gender is shown in Figure 6.

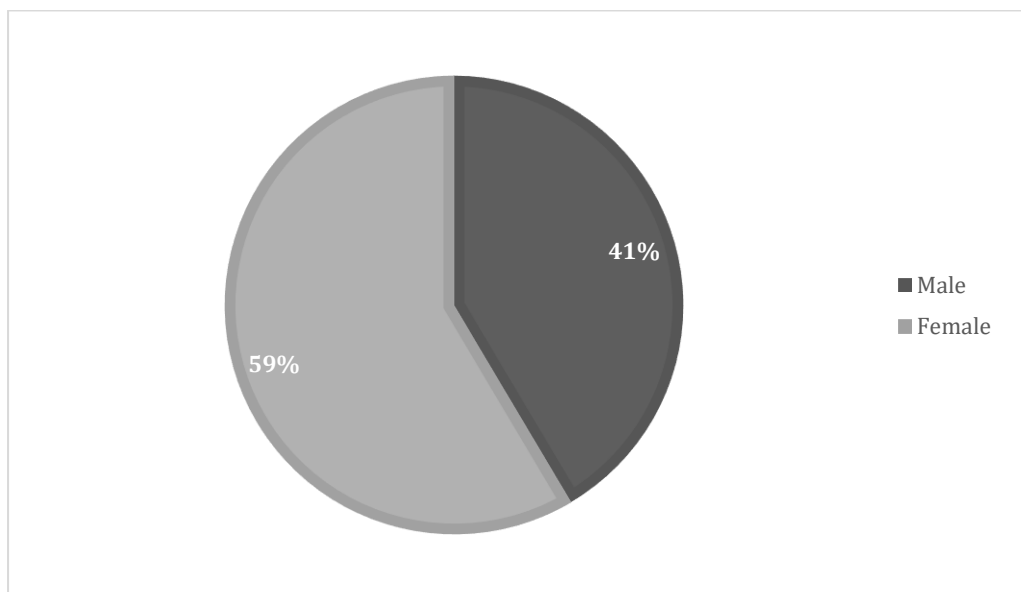


Figure 6. The distribution of participants according to gender expressed as a percentage.

Figure 6 shows that the majority of respondents were females when compared to males. This result could be explained by the fact that Namibia has more females than males in its overall population. The Namibia Statistics Agency (2011) shows that approximately 52% of the total population are females while 48% are males. In addition, the Ministries engaged have more female employees (56%) than males (44%). These factors explain the difference between respondents that took part in the study.

5.1.2 Employment status

Respondents were asked to indicate if they were employed. Figure 7 show results on the status of employment by respondents.

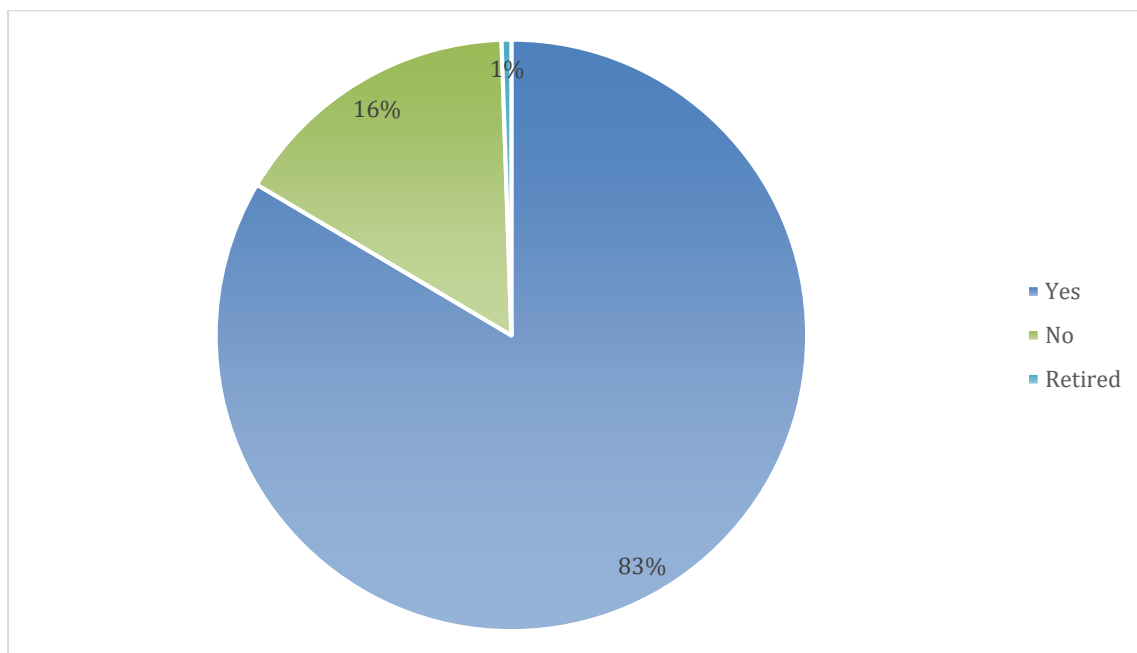


Figure 7. Employment status of respondents expressed as a percentage.

Figure 7 shows that the majority of the respondents were employed (83%). Only 16% of all the respondents were not employed while 1% indicated that they were retired.

5.1.3 Level of education

Respondents were asked to indicate their level of education. Figure 8 show results on the distribution of respondents. The majority of the respondents (55%) indicated that they had a Degree/Diploma. This was followed by those with a Postgraduate Degree (28%) and those

with a High school qualification (15%). None of the respondents indicated that they have no educational qualifications. These findings are supported by a finding in section 5.1.2 where the majority of respondents indicated that they are employed. On most occasions, it requires one to have at least Grade 12 (educational qualification) to secure employment in a government department in Namibia. These results suggest a high level of literacy among the respondents. It can therefore be argued that the respondents were capable of understanding and interpreting questions asked in the questionnaire.

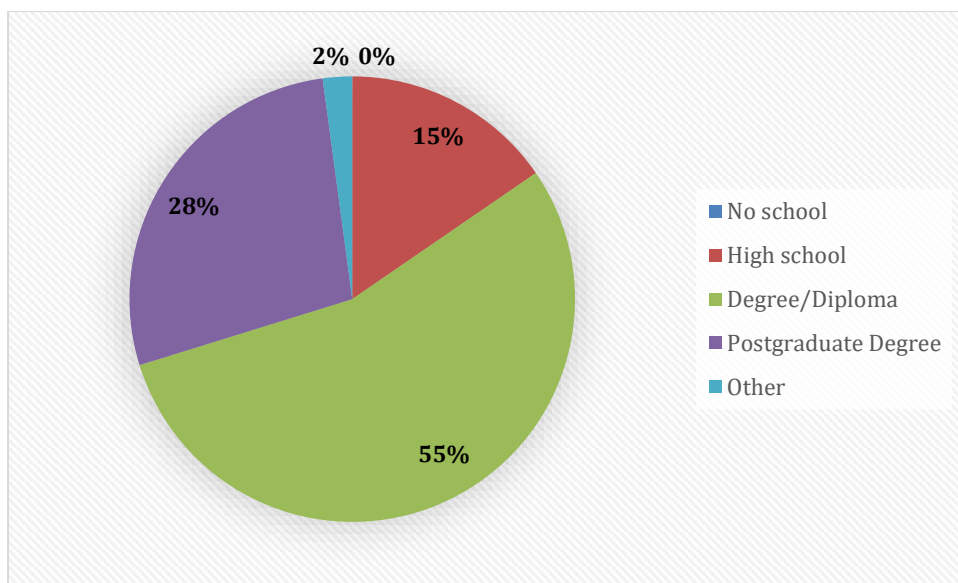


Figure 8. The distribution of the level of education qualifications of respondents.

5.2 Use of e-Government

Respondents were asked to indicate if they use any e-Government services in Namibia. Respondents were asked to indicate if they pay their water bill electronically. Water services are catered for by the local government. E-Government in Namibia remains fragmented and it was interesting to establish its implications on use. Figure 9 show results on e-Government use.

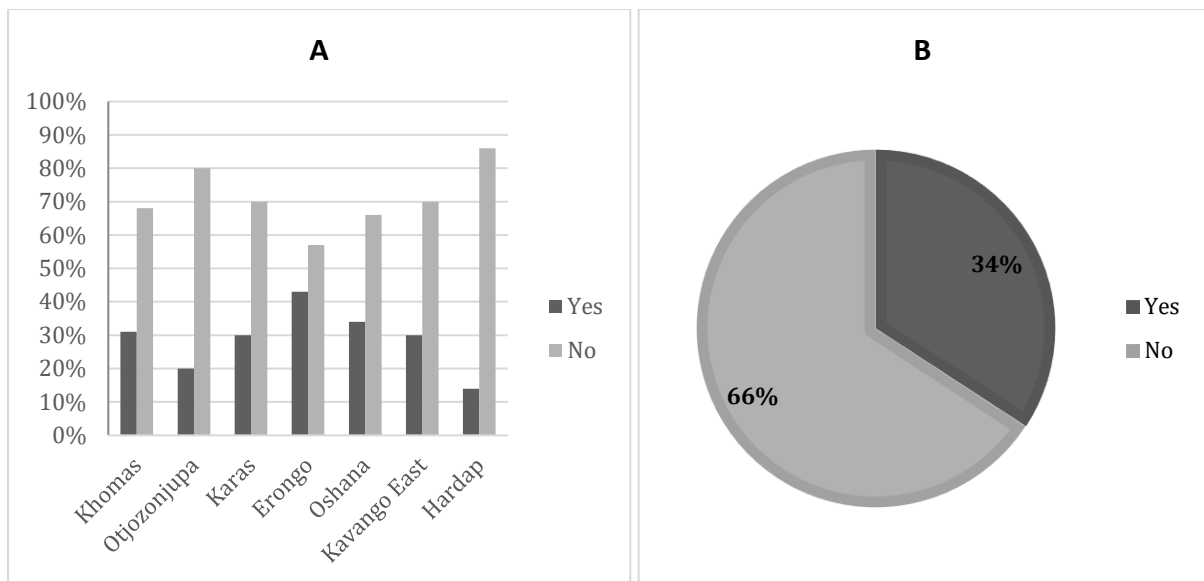


Figure 9. The distribution of e-Government use by respondents across different regions expressed as a percentage per region.

Results in Figure 9 (B) shows that the majority of citizens do not use e-Government services. Only 34% of all respondents indicated that they use e-Government. This finding extends to regions that were analysed. For example, 85.7% of the respondents in the Hardap region noted that they do not use e-Government services. This is the case with the other regions where higher percentage of respondents agreed that they do not use e-Government services. For regions like Khomas, Otjozondjupa and Oshana, the percentage of those who indicated that they do not use e-Government is between 65.6% to 80%. Even though the Khomas region is home to Namibia capital city Windhoek, it recorded a low percentage of respondents who use e-Government compared to that of the Erongo region where close to 50% indicated that they use e-Government. The Erongo region has a high literacy rate (97%) and a fairly high employment (70%) when compared to other regions. Nevertheless, a low rate of e-Government use can be explained by the fact that there is a poor infrastructure for accessing the Internet in most of the researched areas. Other reasons could be due to digital illiteracy, ignorance or nonchalant attitude towards the use of technology. Another reason could be that government has not made enough awareness campaigns and effort to facilities the use of technology for this service.

5.3 Electronic devices owned and used

Respondents were asked to indicate if they own any electronic device. The majority of respondents indicated ownership of an electronic device in the form of a mobile phone (feature phone), smart phone, tablet or laptop as shown in Figure 10. Feature phones mainly have voice and text message facilities for communication and are usually sold below N\$400. Smart phones have many features in addition to voice and text messaging. This include different applications and a better capacity to facilitate internet access e.g. 2G or 3G or 4th generation long term evolution. On the contrary, tablets are physically bigger than smart phones and have almost similar features to those of a smart phone.

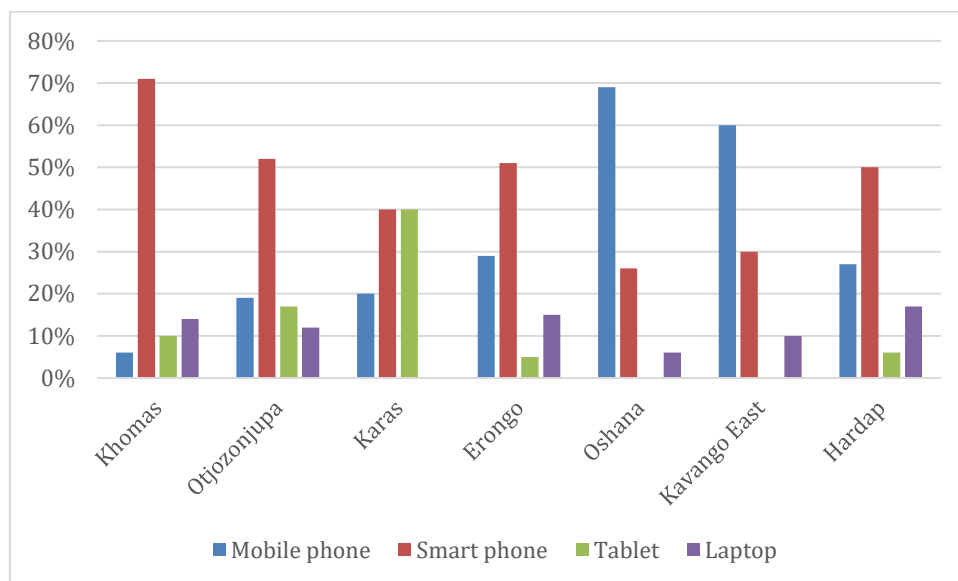


Figure 10. The distribution of electronic device ownership across respondents expressed as a percentage per region

Chapter 3 of this study reported on an increased use of mobile devices. Results from data collection and analysis reflect a wide use of mobile devices. Some of these devices have Internet enabled features, which facilitates transmission of information from one place to the other. Chaba and Kumar (2002) noted that these innovative and radical services applied through mobile technology might significantly improve the operations and communication efficiency for government services. Nevertheless, there are variations from the respondents on the ownership of electronic devices. The majority of the regions use mobile phones (feature phones) more than the other types of electronic devices mentioned in this study. For instance, 68.8% of the respondents use mobile phones in the Oshana region, which is the highest in terms of mobile phone ownership while 70.6% of the respondents own smart

phones in the Khomas region. This variation in this device ownership could be due to the location of these regions bearing in mind that Khomas region houses the administrative capital of Namibia (Windhoek). Looking at the average total in all the regions, it is worthy to note that smart phones are the most commonly used electronic device in the areas of study with a total of 43% response followed by mobile phones with 33%. Others are tablets 11% and laptop/desktop computers 12%. This could be the reason why there is low average response (20%) on e-Government use. Furthermore, Namibia's e-Government is not mobile phone friendly.

5.4 The public value of e-Government

This section presents findings on features expected by respondents on the e-Government platforms. These are the factors that are expected to influence the design of e-Government platforms. A number of factors were evaluated using data that was gathered by use of a five-point Likert scale-based questionnaire: Very Important, Important, Neutral, Not Important and Not at all Important. Thus, the respondents were asked to evaluate the importance of the following factors in e-Government: delivery of public service, the efficiency of public organisations and the achievement of socially desired outcomes. In order to establish the common view of respondents on the importance of these factors, the 5-point Likert scale categories were collapsed to "Important", "Neutral" and "Not Important". Very Important and Important were collapsed to "Important" whilst Not at all Important and Not Important were collapsed to "Not Important" and neutral remained "Neutral". This was done under the assumption that one agreed (Important) that a factor was important or disagrees (Not Important) that it is important or one is not sure (Neutral). In addition, this study used MMR. Hence, data that was gathered by use of interviews is also included in this section. Findings from these factors are presented next.

5.4.1 Delivery of public service

This section presents findings for data that was gathered to evaluate the perception of respondents on the delivery of public service. Focus on the quality of information, service delivery (e-Service) and user-oriented e-Government.

5.4.1.1 The quality of information

The data was gathered to evaluate the importance of the quality of information to respondents. To evaluate the quality of information, the following data was gathered:

- Accurate information
- Up-to-date information
- Relevant information
- Simple and understandable information

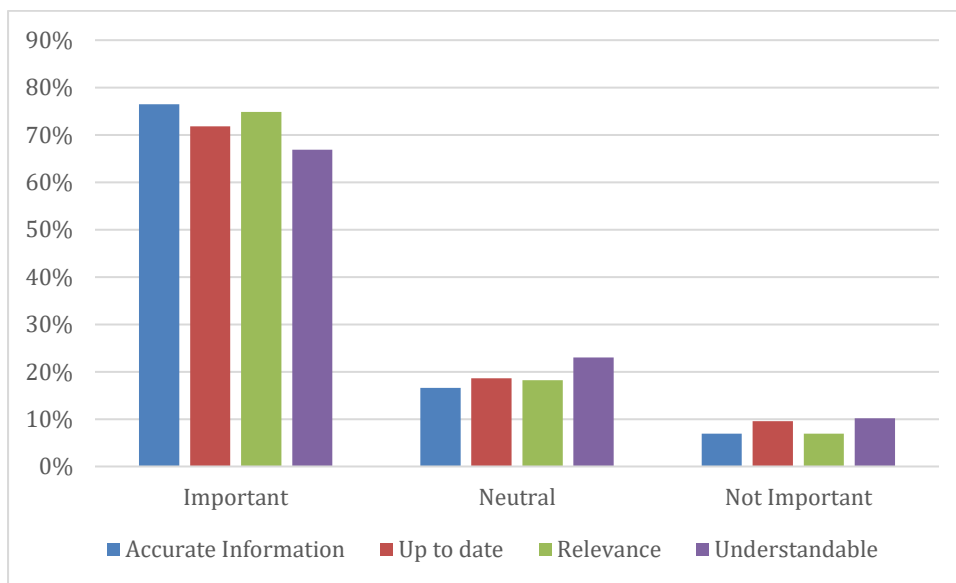


Figure 11. The quality of information

The majority of respondents indicated that the quality of information was important as shown in Figure 11. Accurate information was the most important attribute followed by relevant, up-to-date and understandable information. These findings suggest that, all the attributes that were evaluated under the quality of information were important to Namibian residents. In addition, a participant weighed in on the importance of information by stating that: *“Well, every society have their own expectations, I think e-Government team need to approach societies to understand their needs and see how government can incorporate them in the e-government initiative for a start. I think value to the society would be determined by the type of information, channels and dissemination of e-Government information to a certain society.”* From this statement it could be seen that the channels used to facilitate information of the citizens is of critical importance as well. The percentage of respondents who considered it as

very important as opposed to just important is 56% and 20% meaning that 76% find it very important that the information is accurate

5.4.1.2 e-Service

Respondents were asked to indicate if it was important to have an interactive e-Government platform where one could:

- Make payments online,
- Do government transactions online,
- Fill and submit application forms online,
- Search for information online,
- Download government application forms and
- Download archives.

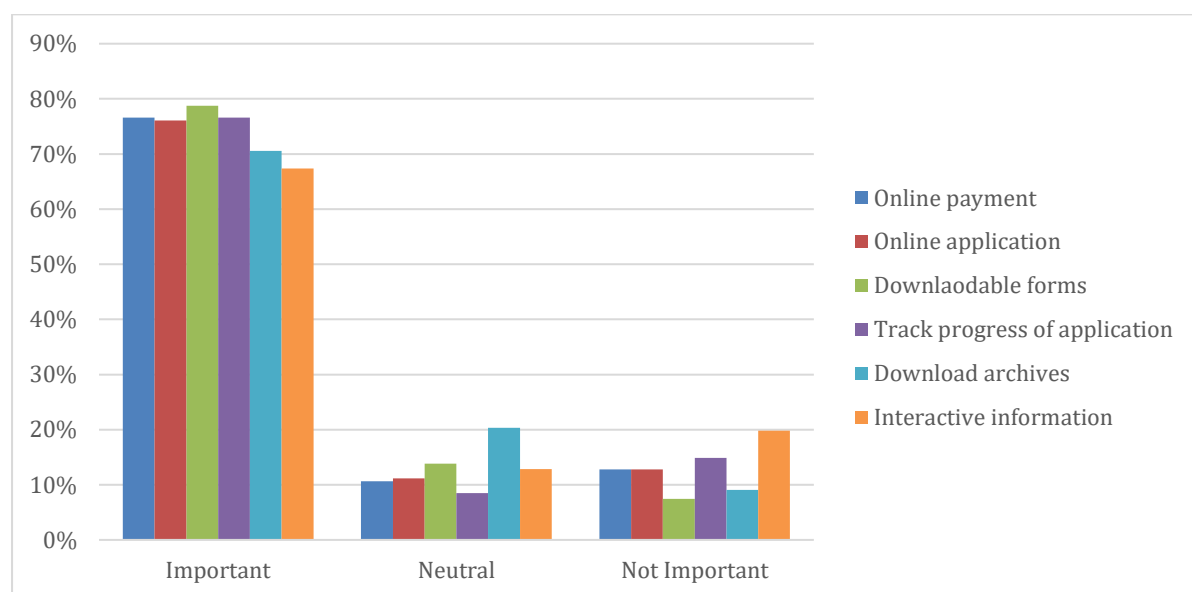


Figure 12. The importance of e-Service

Figure 12 shows that all the attributes that were assessed for the importance of e-Services were found very important by the respondents that took part in the study. Downloadable forms was found the most important attribute for e-Service followed by an online payment facility. Interviewees supported the need for online payments platforms on e-Government. For example, an interviewee stated that *“I expect to have a fully operational online services from application to payments without me having to apply online only without making any payment online such as those processes involved in the company registration at the Ministry*

of Industrialization, Trade and SME Development, and that is not fully online services expected by the citizen at all." Making payments online was followed by the ability to make online applications and tracking the progress of application. Participants who were engaged through interviews concurred with these findings. For instance, one of the participants stated that: *"I expect e-Government to provide e-Services such as fully online business registration, online permit, e-Health services...."* It was surprising that the ability to make an application online was not found among the top prioritised features given that, the ability to download forms is herein preferred more than applying online. Downloading archives and having an e-Government with interaction forms are the least important attribute of e-Service.

5.4.1.3 User orientation (ease of use)

Data was gathered to evaluate the importance of user-orientation of e-Government to respondents (users). The following attributes were evaluated:

- Well organised and user-friendly website
- Simple (easy to remember) website address
- A single website which provides links to other government websites
- A single website which provides information about all the government services (one stop shop)
- Common look and feel of websites
- Websites for none internet savvy people
- Frequently asked questions (FAQs) and a site map

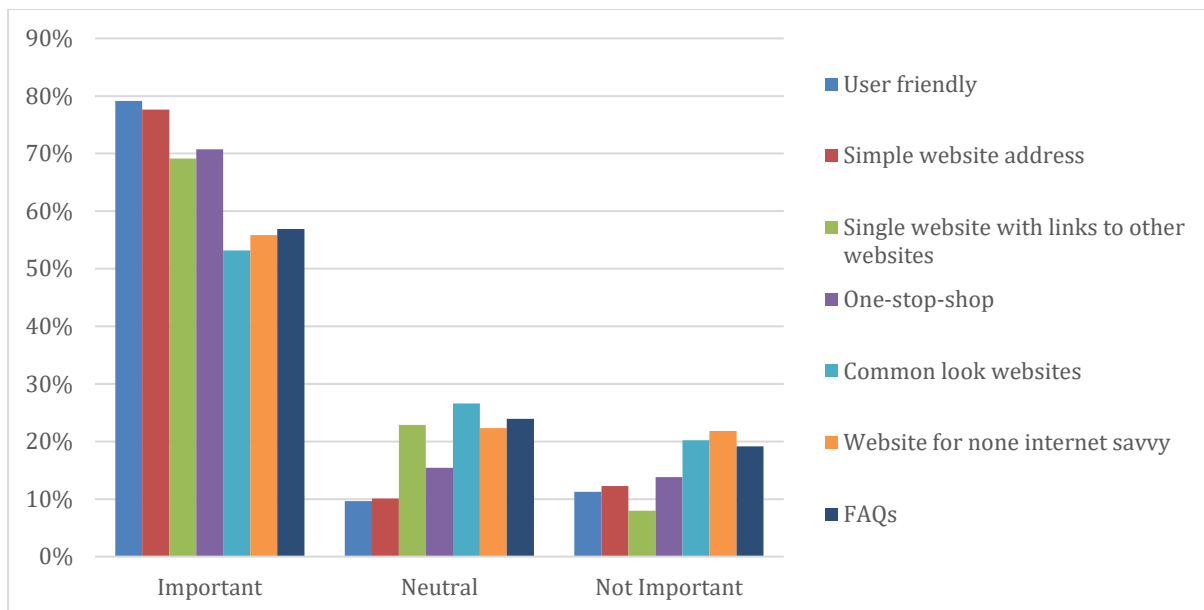


Figure 13. Importance of user orientation

The respondents indicated their preference of a user-friendly website followed by a simple to understand website address. A one-stop shop website and a website that is linked to other websites are also considered important. FAQs and a site map are some of the features preferred by respondents. However, government websites with a common look do not seem to be important, so does website for none Internet savvy computer users as shown in Figure 13. In addition, participants suggested a need for user engagement if e-Government is to meet the aspirations of the citizens. It was stated that: *“The government need to involve the citizens in the e-government initiative, find out exactly the services that are needed by the citizen, because we as citizen will be using those services.”* Another participant explained that: *“Citizen participation plays a major role in the effective implementation of e-Government in a country. Without the involvement of citizens in the e-Government initiative we will continue to produce services that does not meet the requirements of the society.”* As such, citizen engagement and satisfaction is considered an important factor to e-Government design.

5.4.2 Efficiency of public organization

Data was gathered to evaluate respondent’s perception on the importance of improving the efficiency of public organisations. Focus was on efficiency, openness and responsiveness. Findings from these are presented next.

5.4.2.1 Efficiency

The following attributes were looked at for evaluating the efficiency of the public sector organisation:

- IT enabled public service counters for better performance (IT enabled)
- Re-designed public sector functions for better performance (Re-designed)
- Improved ICT infrastructure within the public organisations for better performance (ICT infrastructure).
- Sharing public information among organizations through networks to reduce redundant information supply the citizens (Sharing information).
- Empowering public sector staff with ICT skills (Empowerment)
- Cutting excess staff by implementing information systems reduces administration burdens on government (Reduce excess staff)

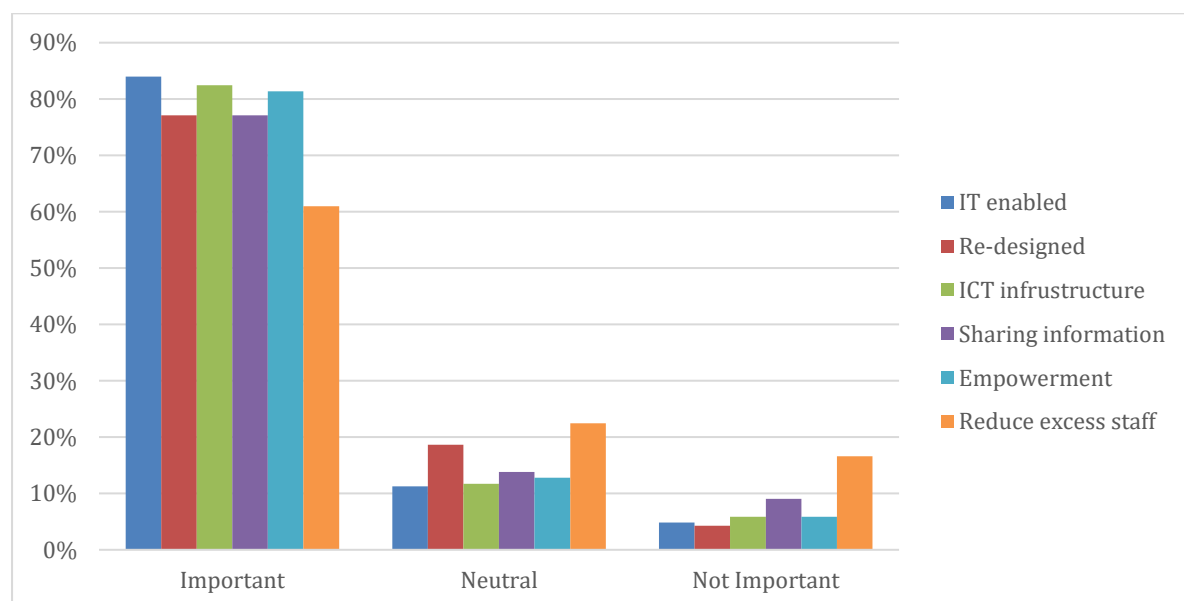


Figure 14. The importance of efficiency.

Figure14 shows that respondents are of the view that empowering public sector staff with ICT skills would result in better performance of e-Government. According to Namibian citizens, this is the most important element for improving performance in e-Government. An interviewee suggested that, since empowering public sector employees was necessary, it was also important to secure funding for these employees to be trained. The interviewee explains: *"We need proper funding, right now we are not financially independent. We are independent*

in operations but not financially. We need enough funds to be able to develop systems, and secondly it is about employment, we need to recruit the right people for the right job that is skilled one. Because the issue of funds go hand in hand with the skills development, you may find for the last two years people don't go for training or seminars, keep them updated with technology." In addition, the provision of an improved ICT infrastructure for the public sector and IT enabled public service are seen as the second and third most important factors for improving e-Government performance. One of the interviewees explains that *"I expect customer services to be fast, flexible and always available. Also, I expect to save time and money by having online services available to me on a 24/7 basis in the comfort of my own house or office."*

Respondents went on to suggest that sharing public information among government agencies through networks to reduce redundant information supply by the citizens. This could be achieved through joined-up government departments. Furthermore, re-designed public sector functions is also seen as an important factor. This may suggest the current processes are not as efficient. Participants that were engaged through interviews acknowledged that a properly implemented e-Government can improve effectiveness. For instance, one of the participants stated that: *"Yes, only if e-government is well implemented then I can acquire the value from it, but in our country, we are yet to get the legal issues out of the way, and also adopt the international best practice."* Another participant stated that: *"because it an improve the service delivery of such organization since every process has to be automated, there would be less paper work, reduced manual processes, save costs and time and then increase productivity."* Lastly, cutting excess staff by implementing information systems is also considered an important factor in reducing administration burdens on government.

5.4.2.2 Openness

Respondents were asked to indicate their perception on the importance of improving the openness of public organisations through e-Government. Openness was evaluated in terms of making the following categories of information available to the public:

- Public policy drafts, laws or regulations online for public consultation (drafts of the legislation)

- Public organisations disclose their budget/expenses online to show accountability of the expenses (Display expenditure)
- Public organisations disclose their annual plan and progress online to show their accountability (Display plans and progress)
- Citizens make complaints online (online complains)
- Publish tenders online to increase transparency (publish tenders)
- Display staffs contract information online (Display staff contracts)
- Public organisations display their contact information online (display staff contact details)
- Display organizational charts, duties and responsibilities of public sector staff (Displays the organogram).

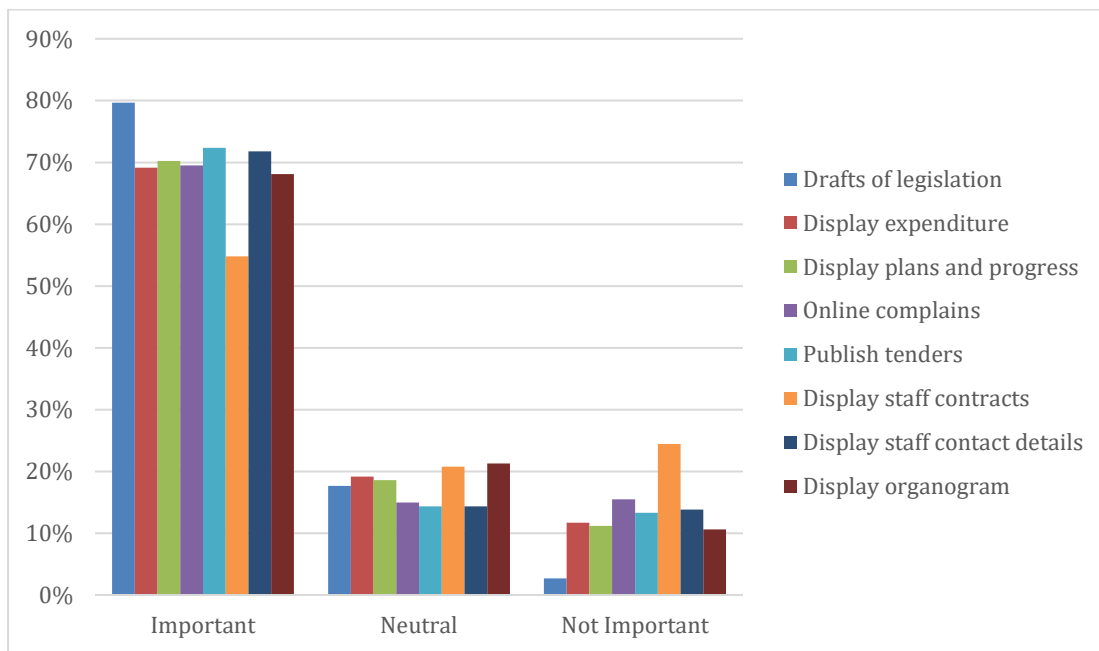


Figure 15. The importance of openness.

Figure 15 shows that the three most important attributes for promoting openness are displaying public policy drafts, laws or regulations online for public consultation (drafts of the legislation); publishing information on tenders and displaying staff contact information. This was followed by displaying plans and progress followed by allowing citizens to air complains online and budget/expenses online to show accountability of the expenses. Displaying staff contracts was the least important attribute. Participants who were engaged through interviews supported the need for openness. For example, one participant stated that “my

perspective would be to see the government of the republic of Namibia adopting the open government data initiative and also promoting e-participation to ensure that the Harambee voice is heard by the entire country.”

5.4.2.3 Responsiveness

Respondents were asked to indicate if it was important to improve responsiveness on e-Government. The following attributes were assessed:

- Display citizen charter online
- Ability to make inquiries online
- Government officials send follow up emails on inquiries
- Online case tracking
- Automatic response to online submissions and emails

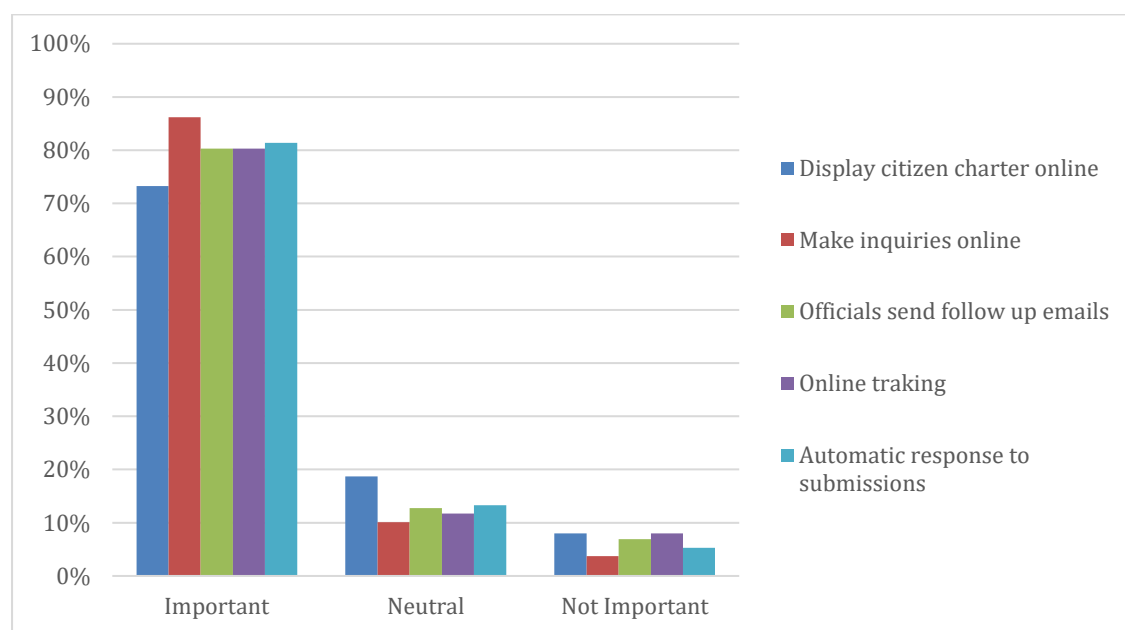


Figure 16. The importance of openness

All attributes considered for openness were found important and citizens would like to see these on the e-Government platforms. This is followed by receiving automatic response on online submissions. Officials sending follow up emails and online tracking of applications are some of the important attributes. Displaying an online charter (timelines on service delivery) is seen as the least important attribute expected to be on the e-Government platform by the citizens. These results suggest a need for more interactivity with government officials on the other side of the interaction process and making sure that there is effective communication.

5.4.3 Achievement of socially desirable outcomes

Respondents were asked to evaluate the importance of achieving the socially desirable outcomes on e-Government. Promoting equity, self-development of citizens, trust of e-Government, participate in democratic decisions and promoting environmental sustainability through e-Government are the factors that were considered under this section. Findings from data collection on these factors are presented next.

5.4.3.1 Promoting equity through e-Government

Respondents were asked to indicate if they thought it was important for e-Government platforms to promote social equity. To evaluate equity, the following factors were looked at:

- Provision of government websites with content in local language
- Establishment of e-Government access or resources centres in rural and semi-urban areas to provide better access to e-Government services.
- Websites that comply with the accessibility standards to support people with special needs
- Content for the socially disadvantaged people
- Provide appropriate content to address the needs of ethnic minorities
- Provide cultural and religious information

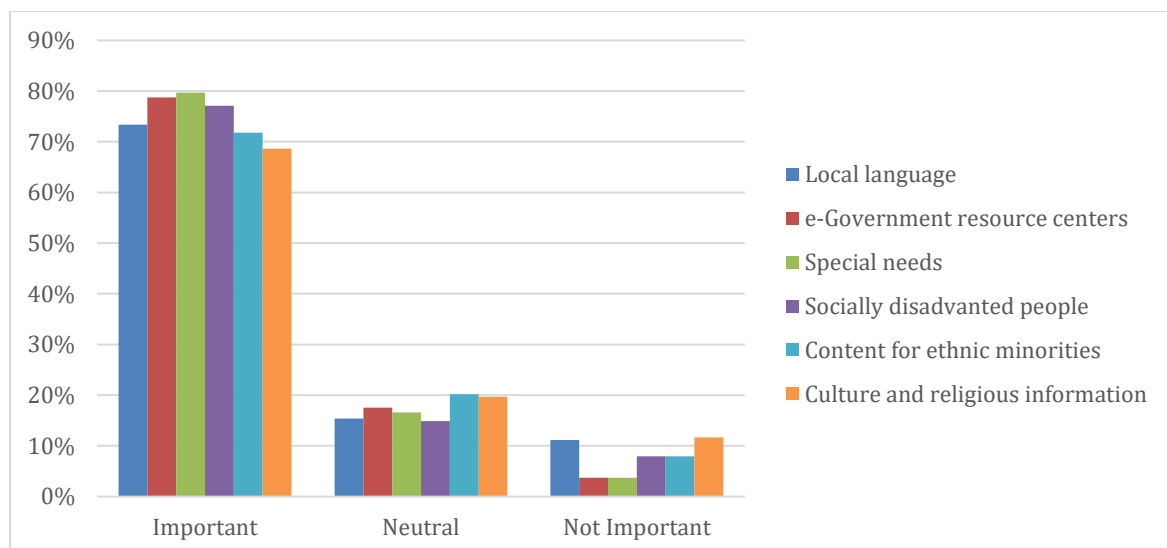


Figure 17. The importance of equity

All respondents considered indicated that it was important to have websites that comply with the accessibility standards to support people with special needs. This was followed by a need

to establishment of e-Government access or resources centres in rural and semi-urban areas to provide better access to e-Government services. In addition, website content for the socially disadvantaged was also seen as very important. Interestingly, orienting websites in local languages was third from bottom in terms of importance as shown in Figure 17.

5.4.3.2 The importance of self-development of citizens through e-Government

Data was gathered to evaluate the importance of developing citizens through e-Government.

Focus was on the following:

- ICT resources such as computers, printers, scanners and internet in for public access
- Low cost ICT training programs conducted by government centres
- Content that supports student education
- Software applications available in e-Government resource centres that develop social and networking skills of children
- Resources for distance learning

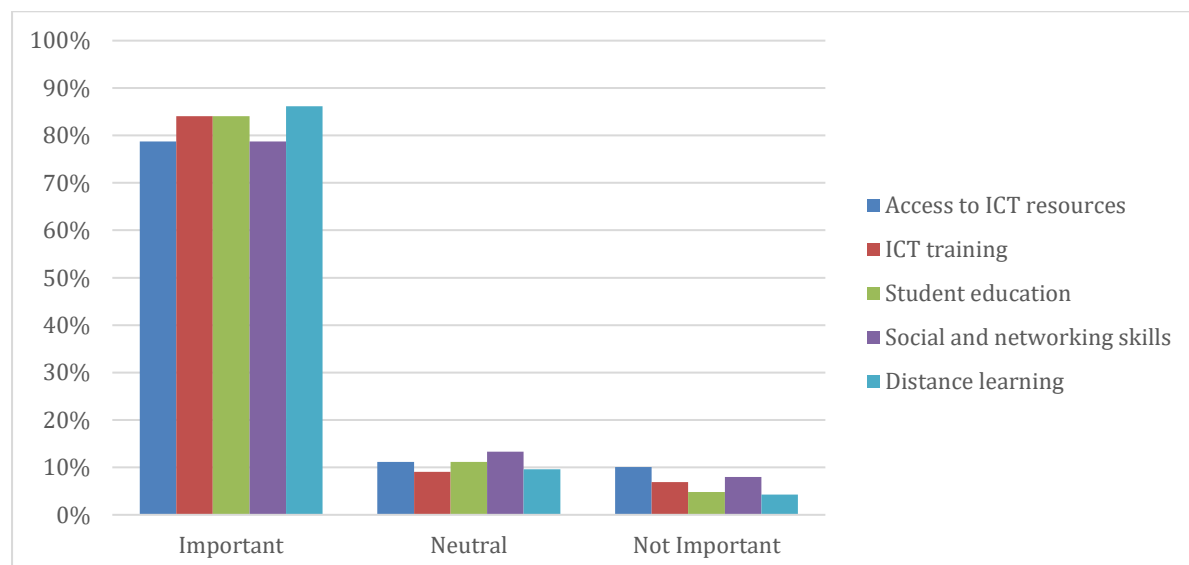


Figure 18. The importance of self-development

Results in Figure 18 shows that content for supporting student education, resources for distance learning and ICT training as the three most important attributes for promoting self-development. Respondents went on to indicate that e-Government should ensure ICT resources such as computers, printers, scanners and internet are available for access for free by the public. Namibian citizens also suggested that software applications available in e-Government resource centres for developing social and networking skills of children are the least important attributes in this section.

5.4.3.3 The importance of trust in e-Government

Data was gathered to evaluate the importance of trust in order to make e-Government platforms usable. Respondents were asked to evaluate the importance of the following factors that were seen as critical for promoting trust:

- Security and privacy statement of all government websites
- Trustworthiness of online interactions with government
- Public organisations protect information held in e-Government systems
- Credible information dissemination through government websites
- A regulatory framework to secure citizens' e-Government interactions

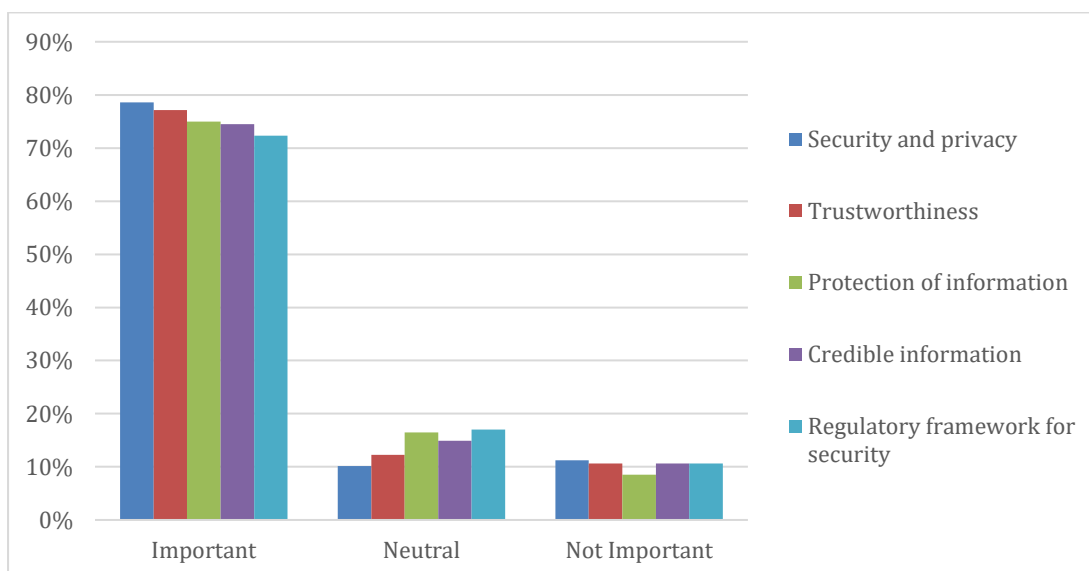


Figure 19. The importance of trust in e-Government

Figure 19 shows that the majority of respondents are of the view that publishing security and privacy statement on all government websites is the most important component of e-Government. 54% and twenty 25% of the respondents indicated that publishing security is very important and important respectively. One of the participants emphasised the need for security and privacy by stating that: *"I expect not only quality information but also privacy of such information and also the flexibility, availability and user-friendly, the channels of communication need to be clearly defined and aligned to legal policies or acts such as data protection act."* Respondents went on to show that a need to make sure that there is trustworthiness of online interactions with government is the second most important

attribute. A need to protect information held in e-Government systems was rated the third most important attribute of trust. Offering credible information and a regulatory framework to secure citizens' e-Government interactions were the least important attributes.

5.4.3.4 The importance of e-participation

Data was gathered to evaluate the perception of respondents on the importance of having an e-Government platform that could facilitate democratic processes. The following attributes were considered:

- Government keeps you informed about upcoming policies that affect you through websites
- The opportunity to actually participate online in public discussions and policy making
- The government takes your opinion for actual decision making
- Ability to post a topic for public discussions

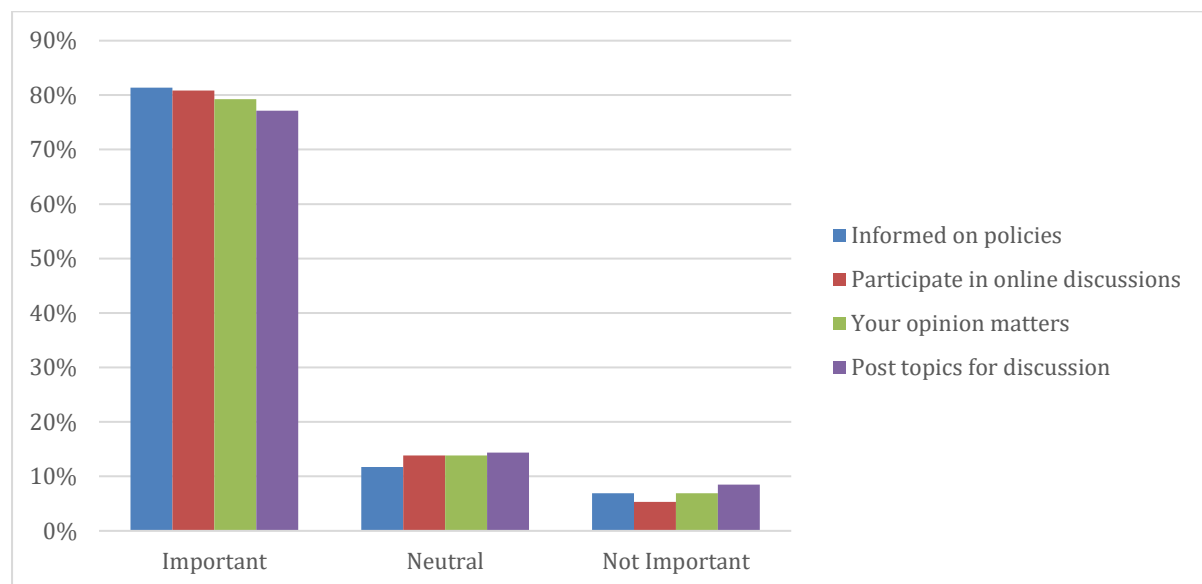


Figure 20. The importance of e-participation.

Figure 20 shows that all the attributes that were assessed under e-participation were found important. Keeping citizens informed about upcoming policies through websites (e.g. online news letters, bulletins) was rated the most important factor. Respondents went on to indicate that the opportunity to participate online in public discussions and policy making was the second most important element of e-participation followed by a government's consideration of opinions raised through electronic means in actual decision making. Lastly, respondents

indicated that the ability to post a topic (set up an agenda) for public discussions through e-Government was the least important attribute of e-participation.

5.4.3.4 The importance of environmental sustainability through e-Government

Respondents were asked to evaluate the importance of environmental sustainability through e-Government. The factors that were considered for evaluating environmental sustainability through e-Government are as follows:

- Developing e-Government applications which help to limit duplication effort and resources
- Switch off computers, printers and other ICT equipment when not needed in order to save energy
- Reduction of paper printing (double side printing, use electronic copies)
- Recycling consumable equipment
- Taking your inputs for implementing green IT policy formulation within the government
- Retire computer systems that are not energy efficient

Participants engaged through interviews confirmed that e-Government can be used to facilitate environmental sustainability initiatives. For example, one of the participants stated that: *“In terms of value towards environmental sustainability, is achievable if and only if the government can make use of e-government initiative to promote, inform and engage the society in the programs or projects that have an influence in their environment and ways of how to sustain it. A good example is by introducing a mobile app for reporting crime in our society and other bad social issues.”* Another participant weighed in on e-Government addressing social ills in order to promote sustainability. It was stated that: *“E-government need to address social issues affecting our communities such as gender-based violence, child/human trafficking, bullying, drug abuse, thereby ensuring that information related to such issues is easily available to the community, either accessible via smartphones, laptops or any other devices with internet connectivity or via community centres/ multipurpose centres or schools”*.

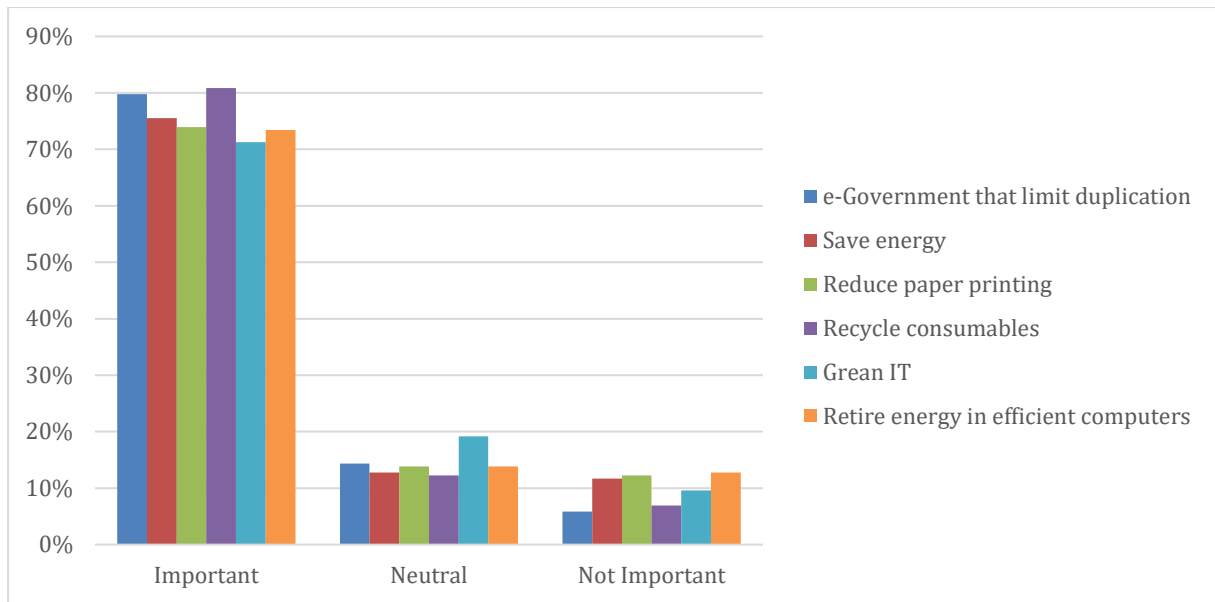


Figure 21. The importance of environment sustainability through e-Government

In addition, Figure 21 shows that recycling consumable equipment (e.g. papers, ink cartridges etc) is the most important element that should be considered when promoting environment sustainability through e-Government. A further look at the data showed that 60% of the respondents found this a very important factor while 21% considered it an important factor. An e-Government that help limit duplication effort and resources was rated second followed by switching off computers, printers and other ICT equipment when not needed (energy saving). The least most important element was found to be the consideration of citizens' inputs for implementing 'Green Information Technology' policy formulation within government.

5.5 e-Government implementation components

Data was gathered to evaluate components that should be considered when implementing e-Government. It was considered that access to ICT supporting infrastructure, availability of ICT skills, attitude towards technology, community-based partnerships and information sourcing patterns are the important requirements that should guide the design and implementation of e-Government if it is to succeed. Data to assess these factors was gathered using a five-point Likert scale-based questionnaire: Strongly Agree, Agree, Neutral, Disagree and Strongly Disagree. In order to establish the common view of respondents, the 5-point Likert scale categories were collapsed to "Agree", "Neutral" and "Disagree". Strongly Disagree and Agree

were collapsed to “Agree” whilst Strongly Disagree and Disagree were collapsed to “Disagree” and neutral remained “Neutral”. This was done using reasoning in section 5.4. Results from these factors are presented next.

5.5.1 Access to ICTs supporting infrastructure

Data was gathered to evaluate respondents’ access to ICTs supporting infrastructure. Access to infrastructure is important as it determines access to e-Government platforms. The following factors were considered in order to evaluate access to ICT supporting infrastructure:

- Mobile network coverage
- Access to the Internet
- Access to electricity
- I rely on solar as a source of energy
- Internet access is affordable

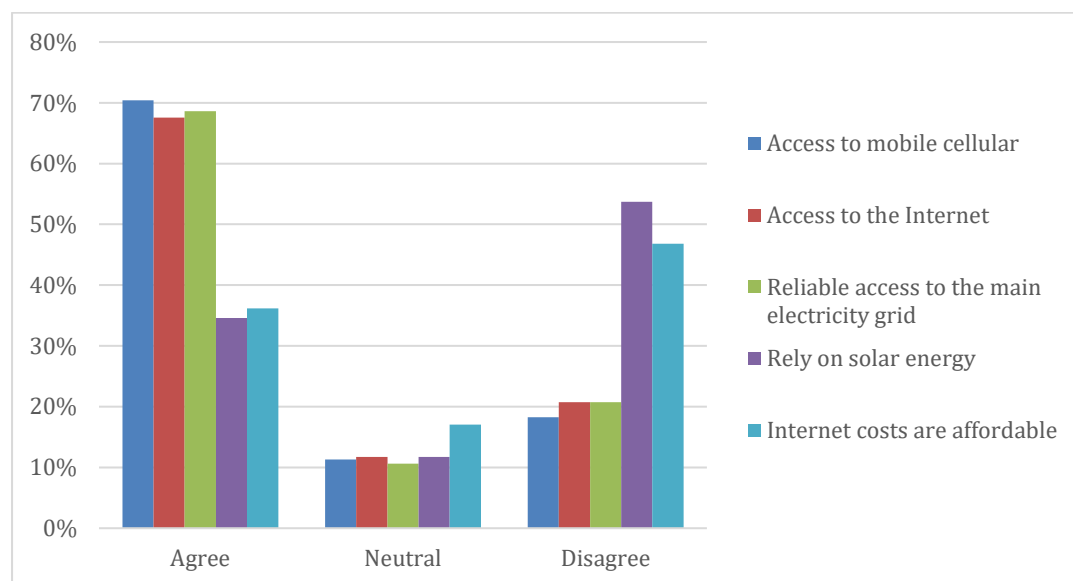


Figure 22. Access to ICT supporting infrastructure

Figure 22 shows that the majority of respondents agreed that they have access to mobile cellular network, the Internet and main electricity grid. However, respondents indicated that Internet costs are not affordable and that, they do not manly rely on solar energy. Basing on these findings, the government has to find ways to make Internet access affordable otherwise e-Government will not be a success.

5.5.2 The availability of skills for operating e-Government services

Respondents were asked to indicate if they feel that they have adequate skills to operate e-Government services. Respondents were asked to indicate if:

- They are informed about the use of computers and mobile phones to access e-Government (Knowledge of using ICTs to access e-Government)
- They feel using computers and mobile phones for government service was complicated (I fear its complicated)
- They have no problems with using the Internet to access government services (I have no problem using the Internet)
- I am are aware of the strength and weaknesses of using the Internet (aware of strength and weaknesses).

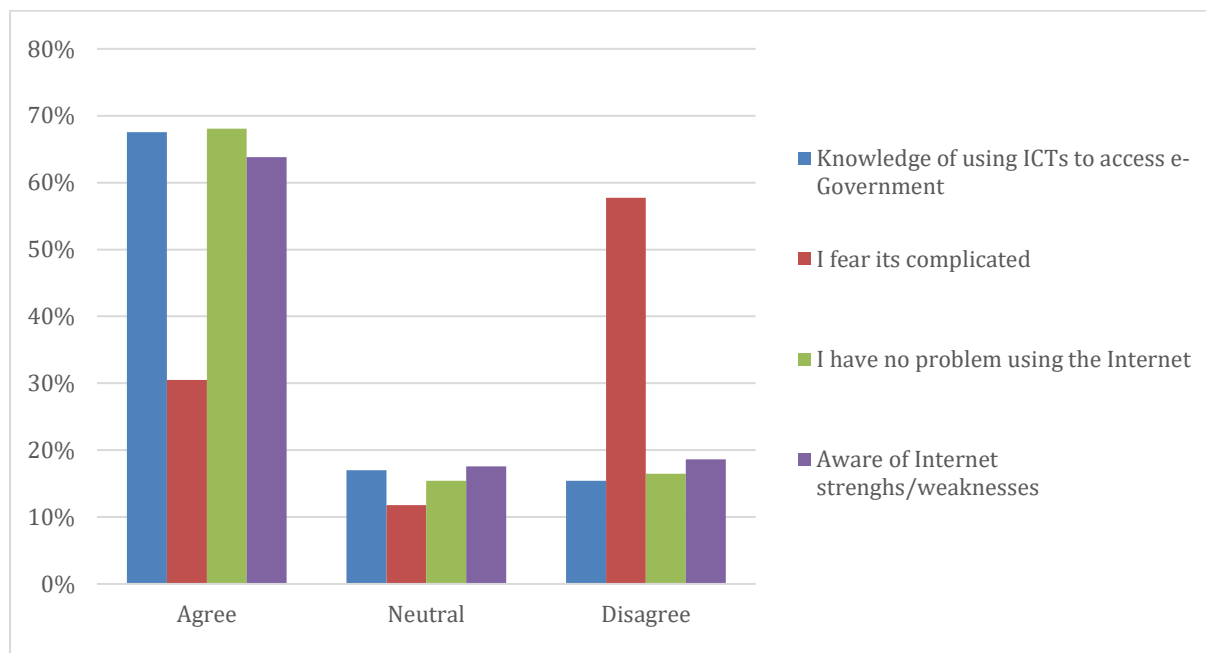


Figure 23. ICT skills

Figure 23 shows that respondents have confidence that they have the necessary ICT skills to use the Internet to access e-Government. Respondents indicated that they are informed about the use of computers and mobile phones to access e-Government (Knowledge of using ICTs to access e-Government). The majority of respondents went on to indicate that they have no problems with using the Internet to access government services (I have no problem using the Internet) and that they are aware of strengths and weaknesses of the Internet. Furthermore, respondents indicated that they had no fears that using computers and mobile phones for government service would be complicated (I fear its complicated).

5.5.3 The attitude towards technology

Data was gathered to evaluate the attitude of respondents on emerging technologies and e-Government. Respondents were asked to rate their extent of agreeing or disagreeing with the following statements:

- Using the Internet to access government services is unrealistic (unrealistic)
- Fast technological developments are a good thing (a good thing)
- I sometimes discuss with my friends how government can provide service using the Internet (I know how government can use internet)
- I doubt that the Internet is good enough for providing government services (internet is not good enough)
- I prefer walking into a government office for services instead of using the Internet (I prefer going to offices)
- I am interested in using the Internet to get government services, but only if my friends and family are doing so (Social influence).
- Since I already know about the Internet, I will find out more about e-Government services (I can learn about e-Government)
- If you do not want to be left behind, using the Internet is necessary (Its necessary to use internet).

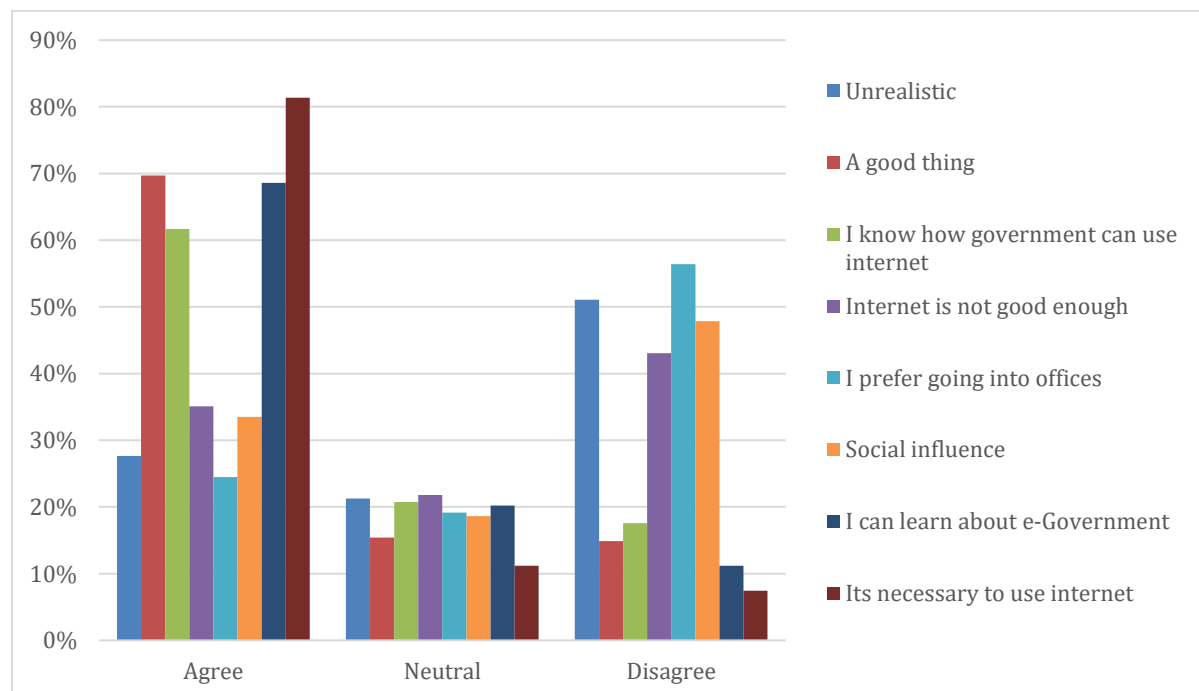


Figure 24. Attitude towards the technology

Figure 24 shows that there is a general perception that the fast-technological developments are a good thing. This reflects a general acceptance of technology within the society. This was supported by a number of respondents who agreed that using the Internet was necessary if one does not want to be left behind. In addition, respondents feel that they can use their knowledge on of the Internet to find out more about e-Government services. This reflects a willingness to learn and adapt to changes in the environment. Respondents appear to be informed of e-Government and the Internet as they indicated that they sometimes discuss with friends how government can provide services using the Internet. Consequently, respondents do not prefer to walk into a government office for service instead of using the Internet. This can also be explained by the long queues that normally characterise government offices. In addition, social influence was found to be a not so important factor when it comes to influencing Namibian citizens into using the Internet for government service. In addition, Namibian citizens do not think that its unrealistic for the government to use the Internet in facilitating government service. Lastly, it does not seem Namibian citizens are certain that the Internet is good enough for providing government services. It has to be pointed out that a fair number of respondents think that the Internet is good enough as shown in Figure 24. These findings portray a positive attitude towards the technology by Namibian citizens. Hence, the government can adopt ICTs in its e-Services knowing fully that they can encourage citizens to make use of the platforms.

5.5.4 Community based partnerships

Data was gathered to establish if it would be important to incorporate the implementation of e-Government through existing structures for easy support and accessibility. The following were considered as possible structures that could be considered for integrating e-Government into the society:

- Local schools to provide computers and technical support to e-Government
- e-Government has to be integrated in local government library for support
- Government should provide training on e-Government
- Government should be engaged in e-Government awareness campaigns

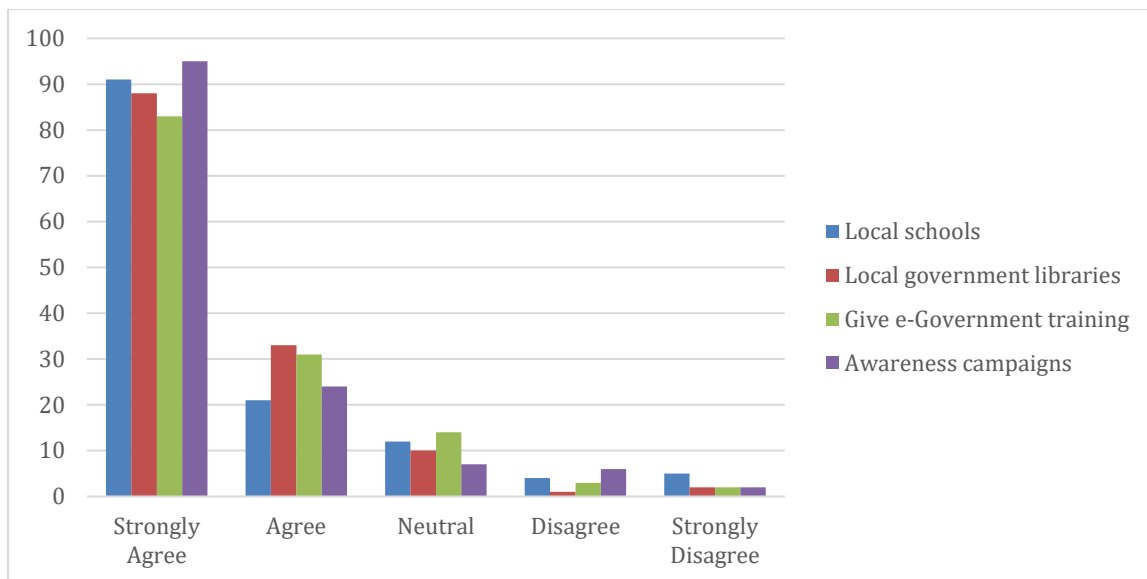


Figure 25. Community-based partnerships for e-Government

Figure 25 shows that respondents strongly agree that government should engage in e-Government awareness campaigns if its implementation is to be a success. Participants that took part in the study weighed in and stated that: *“well, at the moment e-government in Namibia is at a very slow pace and the value through the government services to the public is still at an infant stage. There is an initiative of Interoperability system put in place by the Office of the Prime Minister to share data among the OMAs/RCs and also with other Institutions within the country whereby a Memorandum of understanding have to sign by the parties to share data. There is also an e-birth notification system imitative which notifies citizens about the status of their Birth certificates and Identity documents. However, there is no e-government campaigns done to inform and educate the nation about the significance of e-government in Namibia.”* Another participant indicated that: *“The government need to....come up with e-government campaigns, do promotions of e-government in every town, regions so that the entire country can understand and support the e-government imitative.”* Furthermore, respondents show a strong perception of the need to incorporate local schools and government libraries in order to promote easy accessibility and support. Training was also seen as an important factor for a successful implementation and use of e-Government.

5.5.5 Information sourcing patterns

Respondents were asked to indicate their major sources of information. The targeted respondents were asked to indicate how often they rely on the following as sources of information:

- The radio
- Facebook
- The television
- The Internet
- I call those I know
- Newspaper

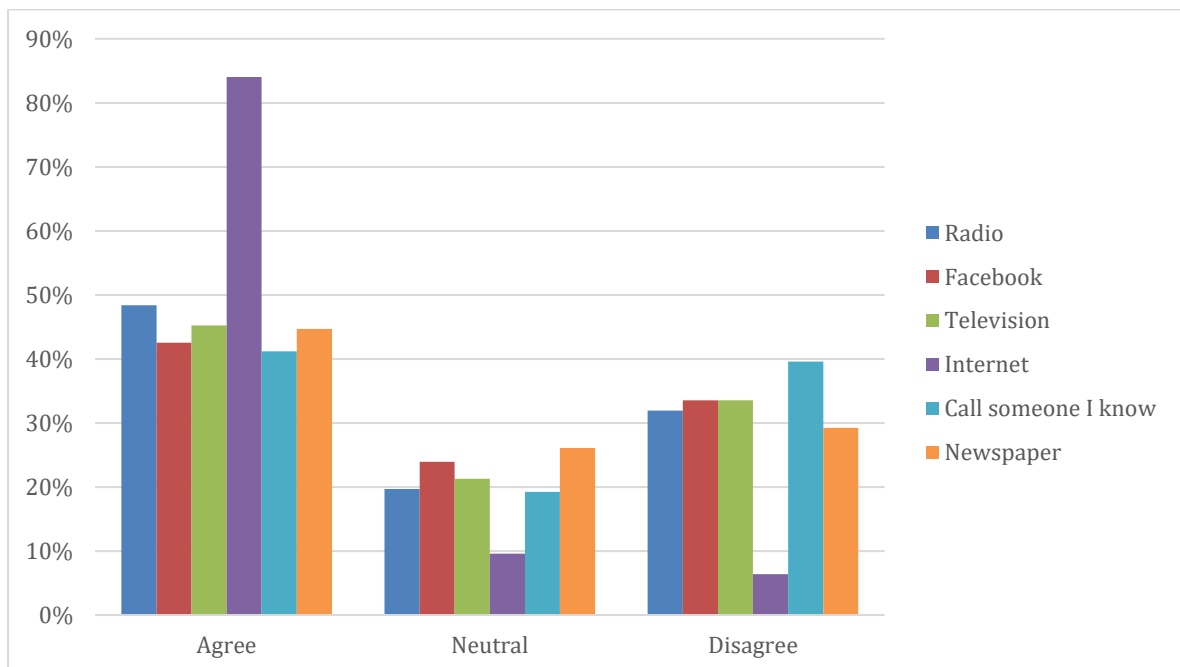


Figure 26. Sources of information used by respondents

Figure 26 shows that the respondents by far make use of the Internet when searching for information. The radio is the second most common technology used when sourcing information. The citizens showed that they do not rely much on Facebook, television, calling someone and the newspaper when looking for information that is important to them. These findings suggest that equipping government service delivery with ICTs especially the Internet will go in-line with sources of information used by citizens.

5.6 Conclusion

The chapter presented findings from data collection. Results showed that citizens consider delivery of public service, efficiency of public organization and achievement of socially desirable outcomes as important factors for promoting citizen-centric e-Government. As such, the design of e-Government should incorporate attributes of these factors. Furthermore, respondents and participants indicated that they have access to ICT supporting infrastructure. This could be explained by the fact that the majority of those who took part in the study were based in urban settings of the targeted regions. In addition, respondents indicated that they have a fair share of Internet use skills that could be used to use e-Government. There is a generally positive attitude towards technology something that boosts chances of e-Government acceptance. In addition, respondents are of the view that community-based partnerships could promote e-Government implementation. Respondents went on to show that the Internet and radio are the main sources of information.

CHAPTER 6: DISCUSSION OF FINDINGS AND IMPLICATIONS

6.0 Introduction

The main objective of this study as presented in Chapter 1 is to develop a citizen-centric e-Government model for the Namibian OMAs. The previous chapter presented results from data collection and analysis. This chapter contributes to the study by discussing research findings of Chapter 5. The analysis of findings leads to the modification of the proposed model in Chapter 3. The modifications of the model accommodate findings from the empirical evidence of Chapter 5. As such, this chapter is organised as follows; firstly, the Chapter gives an overview of the proposed model in Chapter 3. The chapter goes on to discuss findings from data collection drawing on implications. Basing on the study findings, this chapter applies modifications to the proposed model.

6.1 Overview of the proposed model

Chapter 3 of this study proposed a holistic model of e-Government. The model is composed of two main components: the e-Government design and implementation component, and the e-Government evaluation component. Chapter 3 argued that the model is suitable for Namibia which shows to have a sound e-Government policy framework but is lagging behind in terms of e-Government implementation. As such, the proposed model is expected to guide the government in designing and implementing e-Government while at the same time giving provisions for evaluating e-Government from a citizen-centric point of view. According to the proposed model factors that influence the design and implementation of e-Government are as follows:

- ICTs that are easily accessible to the populace (access to ICTs)
- ICT skills
- Community based partnerships
- Citizen information needs
- ICT infrastructure
- Attitude towards the technology

The design and implementation of e-Government in Namibia should therefore be guided by the above factors. The model also includes the following factors of e-Government evaluation:

- Delivery of public services
- The efficiency of public organizations
- Achievement of socially desirable outcomes

Accordingly, it is expected that e-Government should include the above attributes for it to be citizen-centric.

6.3 Discussion of study findings and recommendations

Chapter 5 gathered data to evaluate a proposed model of Chapter 3. The data was gathered through interviews and a questionnaire survey. The sections below discuss this study's research findings on factors of citizen-centric e-Government design and implementation, and evaluation.

6.3.1 Factors of Citizen-centric e-Government Design and Implementation

Data was gathered to evaluate the importance of factors that should be looked at when designing and implementing citizen-centric e-Government. This study argued that, for an e-Government to be citizen-centric, its design should be informed by how citizens access the services, their ICT skills, following community-based partnerships, understanding citizens' information needs search patterns, ICT infrastructure and the attitude towards technology. Findings from these factors are explained below.

6.3.1.1 Access

The majority of respondents indicated that they own a smart phone and or a feature phone. Most respondents from regions with urban settlements (Khomas, Otjozongjupa, Erongo and Hardap) owned a smart phone. Very few respondents own laptops as shown in section 5.3. However, the majority of respondents from rural oriented regions such as the Kavango East and Oshana owned a feature phone. According to the Namibia Statistics Agency (2013), rural communities are dominated in the central-north of Namibia and along the Okavango and Zambezi river. These areas are home to the Kavango East and Oshana region. The ownership of feature phones by respondents from regions that are dominated by rural areas can be explained by the fact that rural dwellers are twice as much likely to be poor compared to their urban counterparts (Namibia Statistics Agency, 2012). Nevertheless, it has long been established that the majority of Namibian citizens access the Internet by use of a mobile

phone (United Nations, 2014). These findings suggest that the resultant e-Government should be compatible with ICTs and mobile technologies that are popular among the populace. Ochara and Mawela (2013) researched on how mobile phones can be considered in facilitating access to e-Government. There are projects that are pilot testing the feasibility of using mobile phones in accessing e-Government. It is therefore recommended that the Namibian government should look at developing e-Government platforms that are compatible to mobile phones.

6.3.1.2 ICT Skills

Data was gathered to evaluate the ICT skills of the respondents. The majority of respondents strongly agreed to having skills of using a computer and mobile phones to access e-Government. This can be explained by the high use of mobile phones to access the Internet. Exactly 87.3% of the Namibians who have Internet access makes use of their mobile phones (Stork, Calandro & Gillwald, 2013). When on the Internet, Namibians prefer reading and writing emails and accessing the social media (stock et al., 2013). Similarly, Table 3 shows that the respondents have skills to use the Internet on their own. However, there is a feeling that accessing government services through the Internet could be complicated. One of the interviewees stated that *“there is no e-Government campaigns done to inform and educate the nation about the significance of e-Government in Namibia”*.

Statements	Disagree	Neutral	Agree
Informed about using computers and mobile phones to access e-Government	15%	17%	68%
Using computers and mobile phones for government services is complicated	58%	12%	30%
I can use the Internet by myself to get government services	16%	15%	68%
I understand the strengths and weaknesses of the Internet	19%	18%	64%

Table 3. ICT skills of Namibians

Basing on these findings, it can be stated that while users are aware of how to access the Internet via the mobile phone or personal computers, more effort needs to be put on

improving the ICT skills of the population and on accessing and using e-Government services. This may take the form of government campaigns and training workshops informing the populace how manual business processes in a traditional government office are replicated on the e-Government platform. The skills required for e-Government are not simply technical, but they also include basic understanding (IT literacy) of what is needed (OECD, 2003). The World Economic Forum indicates that IT skills are critical for knowledge-based, information-rich societies (Bilbao-Osorio et al., 2013).

6.3.1.3 Community-based partnerships

Another important requirement when designing and implementing e-Government was to consider community-based partnerships. The literature raised concern over the lack of support for e-Government platforms. There is a tendency of dumping e-Government on the populace (Jaeger & Bertot, 2010a). Findings from data collection suggest respondents agree that e-Government need to be integrated with local public libraries and schools for technical support and access to technology. Table 4 summarise these results.

Statements	Disagree	Neutral	Agree
Local schools should provide computers and technical support for e-Government	6%	13%	80%
e-Government has to be integrated in local government library for support.	4%	7%	89%
Government should provide training on e-government	6%	11%	83%
Government should engage in e-Government awareness campaigns.	7%	8%	85%

Table 4. Strategies for integrating e-Government with the community

Integrating e-Government with local communities improve acceptance. In Namibia, such integration can be done through government schools and village headman where the technology can be accessed for e-Government purposes. Ochara (2008) proposed a similar

idea that e-Government has to be enshrined in grassroot activities targeting village heads, councillors and chiefs. Such measures can lessen the burden on the populace of acquiring expensive ICTs that are needed when accessing e-Government platforms. As was shown in the study, the majority of rural populace did not have smart phones. Access to smart phones is critical as the majority of the populace use these ICTs for accessing the Internet. In addition, the government need to put in place measures for promoting e-Government awareness as shown in Table 4. These views were shared by participants who stated that user awareness *“is very important, we can have very nice service up to the village levels, but if users are not aware, they will not use it, so we must create awareness through public education, advertisements via different media so that people can be aware and use the services”*. Another participant weighed in and stated that *“the only thing we are supposed to do is to create awareness, and inform the people”*.

6.3.1.4 Citizen information needs

The study gathered data on how the Namibian citizens search for their information needs. Understanding information search patterns is a critical requirement to the success of e-Government as it helps inform the medium that could be used to facilitate information regarding e-Government. Respondents were asked to indicate if they would use the radio, Facebook, television, the Internet, contact those close or use the newspaper. Results in Table 5 shows that the Internet and radio are the most used technologies as sources of information. Another study that was conducted in Namibia targeting university students made a slightly different finding that the mobile phone (voice and text) was the most used source of news followed by Facebook, newspapers and the radio (Peters et al., 2015). This can be explained by differences in the sample demographics where Peters et al.'s (2015) sample had students who had 99% smart phones while this study's sample is made up of government employees who are more likely to prefer the news-paper, TV and radio. Horrigan (2004) in Jaeger and Bertot (2010) indicated that US citizens preferred speaking to their contacts either face-to-face or via the phone when seeking government information. Only those who are educated were found open to online government interactions (Jaeger & Bertot, 2010). Respondents in this study indicated that they do not mainly use mobile phones for information neither do they rely on Facebook as indicated in Table 5. This may partly be explained by the fact that the majority of Namibians use Facebook for socialising and meeting new friends (Peters et al.,

2015). The recent popularity of “fake news” might have reduced the trustworthiness of the social media as a source of information.

Statements	Disagree	Neutral	Agree
The radio is my major source of information.	32%	20%	48%
Facebook is my main source of information	34%	24%	43%
The television is my main source of information	34%	21%	45%
The Internet is my main source of information	6%	10%	84%
I call those I know when looking for information	40%	19%	41%
The newspaper is my main source of information	29%	26%	45%

Table 5. Citizens strategies for sourcing information

However, in light of the study’s findings, these results suggest that the government can rely on technologies that make use of the Internet in its implementation of e-Government as the population has a wide acceptance of the technology. In addition, the radio can be engaged in promoting awareness of e-Government as it is the second most used technology that is used by the citizens for sourcing information.

6.3.1.5 ICT infrastructure

Respondents were asked to indicate if they have access to mobile phone network, the Internet, solar energy and the national electricity grid. These ICT supporting infrastructure are a critical requirement for e-Government adoption and use. The study finding shows that the majority of respondents indicated that they have access to the mobile phone network, electricity and the Internet. Only a few respondents indicated that they make use of solar

panels as a source of electricity. These findings suggest that there is a fair access to ICT infrastructure by the respondents. However, respondents indicated that the cost of accessing the Internet is not affordable. Namibia's leading mobile service provider MTC claim to have 95% coverage of the Namibian population (MTC, 2018).

Statements	Disagree	Neutral	Agree
Access to mobile cellular network	18%	11%	70%
Access to the Internet	21%	12%	68%
Access to reliable electricity supply	21%	11%	69%
I use solar panels for electricity	54%	12%	35%
I find the cost of internet access affordable	47%	17%	36%

Table 6. Access to ICT infrastructure.

These findings might be influenced by the fact that the majority of the engaged respondents were government employees. As such, they are likely to be based in locations where there is access to electricity. The Namibia Statistics Agency (2016) reported that 85% of the rural households have limited to no access to the main electricity grid. In addition, Lee, Irani, Osman, Balci, Ozkan and Medeni (2008) noted that internet access was biased towards Turkey residents who are based in urban areas when compared to those in rural areas based. However, findings from data collection motivate the need for an e-Government platform that is compatible to mobile phones. This will make e-Government accessible to those based in the rural areas where there is limited access to electricity and the Internet. A possible solution for access to ICT infrastructure is to offer solar powered base stations that deliver mobile network connectivity to the surrounding communities. The platforms also come with mobile phones that could be piloted in remote areas for feasibility. In addition, the cost of accessing Internet remains high according to respondents. Even though Stork et al. (2013) indicated that the government policy in Namibia is hugely credited for a reduction in the cost of ICTs,

these study findings shows that the cost of internet remain high for the majority of citizens. This is a serious concern for Namibia where 60% of the population are based in the rural areas with little to no sources of income (Namibia Statistics Agency, 2011).

6.3.1.6 Attitude towards the technology

Respondents were asked to indicate their attitude towards the use of ICTs in facilitating e-Government services. Understanding citizens attitude towards ICTs is an important requirement to understanding the possibilities of e-Government use (Ochara & Mawela, 2014). Table 7 shows that respondents are of the view that it is realistic to access government services through the Internet and that technology growth is a good development. Furthermore, respondents showed their positive attitude towards the use of the technology by indicating that they sometimes discuss with friends on how the government can use the Internet. However, respondents appeared undecided if internet is good enough for government service. Furthermore, respondents did not show to rely on social influence in their decision to use e-Government. Adopting the Internet was widely regarded as huge factor in one's acceptance the Namibian society.

Statements	Disagree	Neutral	Agree
Using the Internet to access government services is unrealistic	51%	21%	28%
Fast technological developments are a good thing	15%	15%	70%
I sometime discuss with my friends on how the government can provide service using the Internet	18%	21%	62%
The Internet is not good enough to provide government services	43%	22%	35%
I prefer walking into a government office for service instead of using the Internet	56%	19%	24%
I am interested in using the Internet to get government services, but only if my friends and family are doing so	48%	19%	34%

Since I already know about the Internet, I will find out more about e-government services.	11%	20%	69%
If you do not want to be left behind, using the Internet is necessary.	7%	11%	81%

Table 7. Users attitude towards the use of technology for e-Government.

A study conducted by Ochara and Mawela (2014) found that respondents were sceptical on the use of technology. For instance, there was a general perception that mobile phones were not good enough for government service (Ochara & Mawela, 2014) but this does not agree with findings in this study. Nevertheless, findings from this study suggest that it would be easy to encourage the populace to make use of e-Government since they appreciate the idea and use of technology for service delivery.

6.3.2 Users' perception on factors of citizen-centric e-Government evaluation

Data was gathered to evaluate the characteristics of e-Government platform according to the aspirations of the Namibians. Users' perception on e-Government development and characteristics is one of the areas of interest in e-Government research (Tsohou et al., 2013) This study focused on the following for evaluating users' perception on e-Government:

- Delivery of public services
- The efficiency of public organizations
- Achievement of socially desirable outcomes

The next sections evaluate the perception of Namibians with regards to their views on the characteristics of a citizen-centric e-Government.

6.3.2.1 Delivery of public services

Data was gathered to evaluate the delivery of public service. The importance of delivery of service was evaluated using the quality of information, e-Service and the extent to which users prefer an e-Government that is user oriented.

6.3.2.1.1 The quality of information

The study findings on information quality indicated that those who took part in this study value accurate, up-to-date and relevant information. Users also prefer information that is simple to understand. Lee, Irani, Balci, Ozkan and Medeni (2008) found that the Turkey

government websites were designed in such a way that they were “difficult for users to find information and services” (p. 305). They went on to suggest a need to continue improving the government portals. Jaeger and Thompson (2003) in Sorn-in, Tuamsuk and Chaopanon (2015) noted that governments in developed and developing nations are working on improving the provision of information online. “58% of Internet users in the United States believe e-Government to be the best source for government information and 65% of Americans expect that information they are seeking will be on a government site, with 26 million Americans seeking political information online everyday” (Jaeger & Bertot, 2010, p. 2). These findings suggest the importance of accurate, up-to-date and relevant information on e-Government platforms. Ironically, Namibia’s e-Government mainly constitute static information (69%) provision with few (32%) government websites offering a two-way communication something that might suggest information may not always be up-to-date (United Nations, 2014). Other e-Government platforms in developing countries showed to have low quality information (Karunasena & Deng, 2012). Hence, the Namibian government need to ensure that they meet the information quality requirements stated in Table 8.

Statements	Disagree	Neutral	Agree
Accurate information	7%	17%	76%
Up-to-date information	10%	19%	72%
Relevant information	7%	18%	75%
Information that is simple to understand	10%	23%	67%

Table 8. Information quality expectations for a citizen-centric e-Government

6.3.2.1.2 e-Service

E-Service is one of the widely researched topics on e-Government. This suggests the importance of the quality of service. Data gathered reflected the importance of the qualities of e-Services. The majority of citizens preferred having downloadable government applications forms/statements, online payment facilities and online measures to track progress on application, be able to fill and submit application forms online, download archives

and be able to search for interactive information as shown in Table 9. A participant who took part in the interviews cemented the need for these e-Services by stating that *“I expect e-Government to provide e-Services such as fully online business registration, online permit, e-health services, make data available to the citizens or businesses for free, provide free Wi-Fi and also ensure that these services are affordable, effective and efficient.”*

Statements	Disagree	Neutral	Agree
Payment online	13%	11%	77%
Fill and submit online application forms	13%	11%	76%
Download government applications forms/statements for use	7%	14%	79%
Track progress online	15%	9%	77%
Download archives (gazettes, reports, press release)	9%	20%	71%
Search interactive information (e.g. agriculture)	20%	13%	67%

Table 9. e-Government e-Services

According to the United Nations’ (2014) EGDI, the Namibian government e-Service is mainly focused on the provision of information with little efforts made on facilitating a two-way communication that allows for downloading or submitting forms online. These findings show that the Namibian e-Government does have several deficiencies in terms of service delivery as highlighted in Chapter 2, section 2.5 and 2.6. However, the Namibian citizens have a preference for enhanced e-Services. The literature suggests that there are many ways the Namibian government can improve its e-Services. Sorn-in et al. (2015) noted that e-Government service delivery could include electronic payment and filing of taxes, facilitating government procurement online among other electronic services. Furthermore, e-Government sophistication according to the E-government Benchmark Measurement (2010) in Tsohou, Lee, Irani, Weerakkody, Osman, Anouze and Medeni (2013), e-Services delivery

could progress across the stages namely “information provision, one-way interaction, two-way interaction, full electronic transaction or personalization” (p. 242). These findings and suggestions in the literature points to a need for further improvements on Namibian e-Government. The e-GSAP of Namibia for 2014 to 2018 calls for a study on what sort of e-Services to consider (Republic of Namibia, 2014). Table 9 summaries some of the e-Services that could be considered for Namibia’s OMAs.

Nevertheless, the main crippling effect on e-Government in Namibia is that, some government procedures and practices are not yet ready for electronic business activities as they are still under development and need to adhere to international best practices. One of the interviewees (government employee) engaged in the study stated that: *“In our feasibility study one of the area was... readiness to adopt e-procurement which was 40-50% [in terms of the level of adoption] low... we still have a long way to go, that is, we are not ready to do e-procurement and this means we can’t do electronic business!”*. Furthermore, the preference for downloadable forms over online application forms suggest respondents may not have adequate knowledge of the capabilities of e-Government and advantages of online application forms.

6.3.2.1.3 User orientation (ease of use)

Respondents were asked to identify features they expected on e-Government services that would promote user orientation. They indicated that the most important attributes of an easy to use e-Government should include a user-friendly website, easy to remember website address, a single website that provide information about all government services or a single website with links to other websites. All these suggestions appear to recommend the need for a one-stop-shop website for e-Government services. In addition, quality is linked to satisfaction levels and ultimately adoption of e-Government services (Armstrong, 2011). The website’s quality has an important role in formulating individual perceptions and hence leads to an increased usage of the e-Government website (Elling et al., 2012). An e-Government website considered to be of a high quality is ease of use, resulting in a quick delivery of services, improved interactions and greater convenience for the user (Kaisara and Pather, 2011).

The Namibian government shares similar views with the respondents by stating that “a study should be undertaken on how to revamp the country portal into a one-stop shop for all information services” in its e-GSAP for 2014 to 2018 (Republic of Namibia, 2014). However, participants who took part in the study felt the government is a bit slow on its commitment to provide the desired e-Government portals. One of the participants stated that *“at the moment e-Government in Namibia is at a very slow pace and the value through the government services to the public is still at an infant stage”*. In addition, there are recommendations to add a user satisfaction evaluation mechanism on e-Government platforms that would improve citizen-centric e-Government and inclusion of citizens in the development of the government portals (Tsouhou et al., 2013). Participants who took part in this study agreed with this view by stating that *“the government need to involve the citizens in the e-Government initiative, find out exactly the services that are needed by the citizen, because we as citizen will be using those services”*.

Statements	Disagree	Neutral	Agree
Well organized and user-friendly website layout	11%	10%	79%
Simple (easy to remember) website addresses	12%	10%	78%
A single website which provides links to other government websites	8%	23%	69%
A single website which provides information about all the government services	14%	15%	71%
Common look and feel of websites	20%	27%	53%
Designing websites for none internet savvy people	22%	22%	56%
Frequently asked questions (FAQs) and site map	19%	24%	57%

Table 10. Respondents perception on e-Government user orientation features.

6.3.1.2 The efficiency of public organizations

Data was gathered to establish the expected level of efficacy of public organisations. Focus was on efficiency, openness and responsiveness.

6.3.1.2.1 Organisational efficiency

Respondents indicated that they have high expectations on the efficiency of the government performance as a result of adopting e-Government. For instance, it is expected that IT will enable better performance or improved ICT infrastructure can enhance public sector performance or public sector functions could be re-designed and improve performance or public sector could be organised in such a way they share information and improve performance or use ICTs to reduce excess staff. These opinions are shown in Table 11. Those who took part in interviews appeared to support the idea that e-Government can improve efficiency as they stated that e-Government *“can improve the service delivery of such organization since every process has to be automated, there would be less paper work, reduced manual processes, save costs and time and then increase productivity.”* Another participant stated that *“I expect customer services to be fast, flexible and always available. Also I expect to save time and money by having online services available to me on a 24/7 basis in the comfort of my own house or office”*. The major concern is, quite often the main e-Services are not yet fully implemented something that eliminates cost cutting through e-Government (Karunasena & Deng, 2012). Another interviewee appears to appreciate efforts made so far on some e-Government initiatives to improve efficiency as it was stated that: *“Previously, it took a long time (even months) to complete customs transactions, but with government modernisation through e-government services, it now takes only two to three days to clear the cargo, regardless of port of entry. Because it is a quick access, things are taken within and are done within a short time, you get what you want within a short time, and all that it has social and economic impact not only to those businesses and to citizens but the country as a whole.*

Statements	Disagree	Neutral	Agree
IT enabled public service counters for better performance	5%	11%	84%
Re-designed public sector functions for better performance	4%	19%	77%
Improved ICT infrastructure within the public organisations for better performance.	6%	12%	82%
Sharing public information among organisations through networks to reduce redundant information supply by the citizens	9%	14%	77%
Empowering public sector staff with ICT skills	6%	13%	81%
Cut excess staff by implementing information systems to reduce administration burdens on government	17%	22%	61%

Table 11. Expectations on public service efficiency through e-Government

To attain efficiency in government service delivery through e-Government, Chen (2010) in Sigwejo and Pather (2016) stated that the government need to integrate its different units and departments together so that resources could be shared. For example, Finland is taking an approach that was assumed by Estonia of integrating its disintegrated e-Services. The Finish government set up on e-Government has a “National Architecture for Digital Services that includes: data exchange layer, digital identity (eID and authorization) and service views for citizens, companies and civil servants.” When information of a new-born baby is needed, this set up allows for information to be “automatically sent from the population register to the health insurance fund. Another e-service is ‘government e-invoicing’. Finnish government agencies and institutions are no longer receiving invoices on paper” (Legal Framework of e-Government, 2014, p.1). Similarly, Georgia integrated its government service delivery network set up in such a way that documents can easily be shared between the government and the private sector. The Republic of Namibia (2014) indicated a need to re-design the activities of OMAs and have them integrated and networked such that service delivery could be efficient.

6.3.1.2.2 Openness

Respondents suggested a need for openness in such a way that Namibian citizens can be consulted on key developments such as policy drafting or that tenders be published online to increase transparency or display staff contacts. These and other openness measures are presented in Table 12. On the subject of content, the Republic of Namibia (2014) suggested several topics of interest on the provision of services and information. There is no clarity on what the government intends to integrate. As such, Table 12 summarise areas through which the OMAs could attain openness through e-Government.

Statements	Disagree	Neutral	Agree
Public policy drafts, laws or regulations online for public consultation	3%	18%	80%
Public organizations disclose their budget/expenses online to show accountability of their expenses	12%	19%	69%
Public organizations disclose their annual plan and progress online to show their accountability of achieving public goals.	11%	19%	70%
Citizens make complains online	16%	15%	70%
Publish tenders online to increase the transparency	13%	14%	72%
Display staffs contact information online	24%	21%	55%
Display staffs contact information online.	14%	14%	72%
Display organizational charts, duties and responsibilities of public sector staff	11%	21%	68%

Table 12. measures for promoting openness on the operations of the government through e-Government.

Participants who took part in the study agreed that there is a need for putting more effort in promoting openness in governmental operations. It was stated that *“my perspective would be to see the government of the republic of Namibia adopting the open government data imitative and also promoting e-participation to ensure that the Harambee voice is heard by the entire country.”* There is a worldwide move to promote open governments. Open government promote citizen participation, collaboration and transparency in governmental activities (Mergel, 2013). For example, Chapter 5 indicated that new guidelines for European countries requires that procurement processes be transparent and shown on public platforms or portals (UK Open Government National Action Plan, 2016).

6.3.1.2.3 Responsiveness

The government has to improve its interactions with citizens through e-Government. Respondents who participated in the study agreed that citizens should be able to make enquiries online, government officials send follow up emails on inquiries to citizens, provide automatic response on submissions and show a citizen charter online. These measures for improving responsiveness are shown in Table 13.

Statements	Disagree	Neutral	Agree
Display citizen charter online (citizen charter specifies the minimum number of days that a public organization takes to precess or deliver a service).	8%	19%	73%
Ability to make inquiries online	4%	10%	86%
Government officials send follow up emails for your emails or inquiries.	7%	13%	80%
Online case tracking (e.g. status of an application submitted to a government organization).	8%	12%	80%
Automatic responses to online submissions and emails	5%	13%	81%

Table 13. Measures for improving responsiveness through e-Government.

The e-GSAP's proposed Code of Good e-Government suggests the need for communication between OMAs and between OMAs and citizens. However, it is not clear how this communication should occur. This study recommends measures in Table 13. for improving communication. Furthermore, the government portals can set-up platforms for instant messaging where inquiries can be made with citizens getting instant response. Mergel (2013) recommends a need for re-organising the communication process within the government so that it can adhere to the need for quick response.

6.3.1.3 Achievement of socially desirable outcomes

There are suggestions that e-Government should not only focus on the provision of services and information. Rather, it should also incorporate the need for advancing socially desirable goals. These are usually aspirations and needs or interests of the citizens. This study investigated the need for ensuring equity, self-development, trust, e-participation and environmental sustainability. Findings from these potentially socially desirable outcomes are discussed next.

6.3.1.3.1 Equity

Karunasena and Deng (2012) defines equity as the extent to which "e-Government information and services are provided on an equitable basis" (p. 55). Table 14 summarise factors for promoting equity that were assessed in this study. One of the reasons why e-Government has not been accepted in some sections of the world is down to social exclusivity due to the language barrier among other things (Ochara, 2008). Respondents in this study pointed to the importance of having e-Government platforms that can be converted into local languages. Even though English is Namibia's official language, there are at least 11 officially recognised tribes with their own languages (NSA, 2011). This also explains why respondents indicated a preference for appropriate content to address the needs of ethnic minorities. With 60% of Namibia covered by rural areas (Republic of Namibia, 2017), expectations are that those based in rural areas will be comfortable to speak and communicate in their native languages. Countries such as Georgia (MY.GOV.GE), Latvia (www.vid.gov.lv), Finland (kansalaisaloite.fi) and Poland (jakdojade.pl), just to name a few, oriented their e-

Government portals in local languages even though their official languages for government communication might be different.

Statements	Disagree	Neutral	Agree
Provision of government websites' content in local language	11%	15%	73%
Establishment of e-government access/or resources centres in rural and semi-urban areas to provide better access to e-government	4%	18%	79%
Content for the socially disadvantaged people (poor people)	8%	15%	77%
Provide appropriate content to address the needs of ethnic minorities	8%	20%	72%
Provide cultural and religious information	12%	20%	69%

Table 14. Factors for promoting equality through e-Government

In addition, participants indicated a need for the establishment of e-Government access/or resource centres in rural and semi-urban areas for better access. Even though Namibia is regarded as an upper-middle income society (Republic of Namibia, 2017), the fact that 60% of the Namibians are based in rural areas is a cause for concern. The Namibia Statistics Agency (2012) went on to indicate that those who are based in rural areas are twice as much likely to be poor. This suggests that, such a population may not be able to afford ICTs for accessing e-Government. This could explain why the majority of respondents (66%) indicated a preference for resource centres in rural areas. This is also in direct relation with a need for content for socially disadvantaged people. According to Citizens' Report on Governance and Development (2015), "there is an urgent need to reorient policy direction in order to fulfill the aspirations of a large number of deprived sections of the society." Furthermore, respondents suggested a need for an e-Government that provides cultural and religious information. Namibia is a multicultural society with at least 11 official ethnic groups. This may suggest the need for cultural information on e-Government.

6.3.1.3.2 Self-development

Respondents were asked to indicate the importance of an e-Government that promotes self-development. Table 15 shows factors that were considered for promoting self-development. Resources for distance learning were the most preferred self-development resource selected by the respondents. Interestingly, the Republic of Namibia (2014) stated in its eGSAP indicated that the program would include developing material for e-Learning and self-study. However, it appears these e-Learning resources are only for government representatives only. Nevertheless, Namibia has e-Learning platform for primary and secondary (<http://www.namcol.edu.na/>) that give Namibians access to open education.

Furthermore, respondents are of the opinion that ICTs that include computers, printers, scanners and Internet should be freely available for public use. The majority of Namibians access the Internet via mobile phones (Stork, Calandro & Gillwald, 2013). Very few Namibians, 2.91 per 100, access the Internet using a fixed broadband (United Nations, 2014). This may explain that very few people can afford ICTs like computers and fixed broadband internet connection. Hence the perception that these ICTs should be provided for free for public use. An interviewee in the study also indicated that he expects the government to “*provide free Wi-Fi*”. It is important to point out that some of Namibia’s Municipalities, e.g. the City of Windhoek, are taking measures of making the provision of internet access for free. In addition, respondents indicated that they would prefer an e-Government that has provision for low cost ICT training programs conducted by government centres and software applications for developing social and network skills of children. These findings suggest that, if the government wish to take the e-Government route, it implies that more efforts need to be made in helping the citizens to be ready for these new developments. Ensuring e-readiness of the citizens is expected to support a quick adoption of e-Government. The Finish government provide students tablets with pre-installed WILMA software. The software provides students with information on what courses they can do and when in school, the software provides a schedule of outstanding tasks (assignments).

Statements	Disagree	Neutral	Agree
ICT resources such as computers, printers, scanners, and Internet should be freely available for public use	10%	11%	79%
Low cost ICT training programs conducted by government centres.	7%	9%	84%
Content that support students educationn. (e.g. digital text book, digital libraries).	5%	11%	84%
Software applications available in e-government resources centres that develop social and network skills of children	8%	13%	79%
Resources for distance learning	4%	10%	86%

Table 15. Self-development resources

6.3.1.3.3 Trust

Respondents were asked to indicate factors that could promote trust in e-Government platforms. The majority of respondents indicated that they would prefer credible information dissemination through government websites. Hence, the government should make efforts to promote the credibility of information that is disseminated through their platforms. An interviewee who took part in the study suggested that the government should *“come up with e-Government campaigns, do promotions of e-Government in every town, regions so that the entire country can understand and support the e-Government imitative.”* Another interviewee stated that *“the legal issue part of it! Our legal system as far as e-Government services are concerned, is not supportive. I don't think they recognise e-communication, that means someone can send an email and be taken as a legal document! We are still there, we don't have a legal mechanism to support the e-services in the government we are still depending very much on paper.”* This finding suggests, the Namibian government need laws, for instance the 2002 Electronic Communications and Transactions (ECT) Act of South Africa, that give a legal standing to electronic transaction such that they are treated the same as traditional transaction.

Statements	Disagree	Neutral	Agree
Security and privacy statement of all government websites	11%	10%	79%
Trustworthiness of online interactions with government	11%	12%	77%
Public organizations protects your information held in e-government systems.	9%	16%	75%
Credible information dissemination through government websites	11%	15%	74%
A regulatory framework to ensure citizens' e-government interactions	11%	17%	72%

Table 16. measures for promoting trust in e-Government

In addition, respondents suggested a need for security and privacy statement on all government websites. A commitment to security and privacy is seen as an important component of e-Government (Jaeger & Bertote, 2010). These security and privacy statements inform of e-Government protection that is given to users. The third most important factor on trust shows to be the need for trustworthiness of online interactions with government. Jaeger and Bertot (2010a) observed that internet users still prefer face-to-face and over the phone interactions when looking for government information. Awareness campaigns could be critical for all citizens to be engaged in e-Government. Given that radios remain a popular source of information among Namibians, these radios could be used in e-Government awareness campaigns. These campaigns can be conducted in such a way that citizens can air their views or suggestions thereby promoting understanding of the processes involved. Furthermore, respondents suggested a need for a regulatory framework to ensure citizens' e-Government interactions. This could take the form of the ECT Act of South Africa. Lastly, respondents indicated that it would be important if public organizations protect information held in e-Government systems. For example, Georgia came up with cyber security policies and established a Data Exchange Agency that monitors and protect the government network from cyber threats (Legal Framework of e-Governance, 2014).

Given these findings, it is recommended that the Namibian consider factors in Table 16 when promoting trust in e-Government.

6.3.1.3.4 E-participation (participation in democracy)

E-participation involves communication, feedback and involvement in decision-making which is supported by citizens having access to technology and a culture and leadership that is open to involving citizens in the political, governance and service delivery processes (UN, 2012). Karunasena and Deng (2012) suggest that democracy in e-Government relates to the extent that “citizens use e-Government services to contribute to public governance” (p. 55). Findings from this study reveal that it is important for government to keep citizens informed about upcoming policies that affect citizens through websites (e.g. online news letters, bulletins); give citizens the opportunity to participate online in public discussions and policy making; take citizens opinion for actual decision making. The UN (2012) realises that e-participation is a critical element in the betterment of people’s socio-economic circumstances where government plays the role of a facilitator of information and services and not a controller thereof. E-participation programs may be pursued for a multitude of reasons: service delivery, distributing information to citizens, garnering support among citizens, sourcing citizens’ feedback for decision-making processes, supporting political processes and assessing what citizens require from their governments.

Statements	Disagree	Neutral	Agree
Government keeps you informed about upcoming policies that affect you through websites (e.g. online news letters, bulletins)	7%	12%	81%
The opportunity to actually participate online in public discussions and policy making.	5%	14%	81%
The government takes your opinion for actual decision making.	7%	14%	79%
Ability to post a topic (set up an agenda) for public discussions.	9%	14%	77%

Table 17. Factors of e-participation.

6.3.1.3.5 Environmental sustainability.

Participants who took part in the study indicated their preference for an e-Government that promote environment sustainability. Table 18 summarise the important factors that should be considered for addressing environment sustainability through e-Government. There is no mention of investing in environmental sustainability through e-Government in the eGSAP for Namibia (Republic of Namibia, 2014). A similar finding was made in Sri Lanka where the government did not show any commitment towards the environmental sustainability (Karunasena & Deng, 2012). However, findings from data collection and analysis suggest environmental sustainability is important for Namibia. Participants who were engaged through interviews supported this view by stating that *“In terms of value towards environmental sustainability, is achievable if and only if the government can make use of e-government initiative to promote, inform and engage the society in the programs or projects that have an influence in their environment and ways of how to sustain it. A good example is by introducing a mobile app for reporting crime in our society and other bad social issues.”*

Statements	Disagree	Neutral	Agree
Developing e-government applications which help to limit duplication effort and resources.	6%	14%	80%
Switch off computers, printers and other ICT equipment when not needed (energy saving).	12%	13%	76%
Reduction of paper printing (double side printing, use electronic copies)	12%	14%	74%
Recycling consumable equipment (e.g. papers, ink cartridges etc).	7%	12%	81%
Taking your inputs for implementing ‘Green Information Technology’ policy formulation within government	10%	19%	71%
Retire computers systems that are not energy efficient	13%	14%	73%

Table 18. Measures for promoting environmental sustainability.

6.4 Conclusion

This chapter discussed findings from data collection and analysis. The majority of factors in the proposed model were shown to be important. Access to ICTs, ICT skills, community-based partnerships, citizen information needs, ICT infrastructure and attitude towards the technology were found to be critical factors of citizen-centric e-Government. Those who took part in the study mainly use mobile phones. An interesting finding was that the Internet and the radio are the main sources of information. While there has been an improvement on accessing mobile phone network, the cost of data remains high. Furthermore, participants indicated the important characteristics of e-Government in terms of delivery of public service, efficiency of public organisations and achievement of socially desirable outcomes. With reference to the delivery of public services, it was interesting to note that downloading government applications forms/statements for use was more important than paying services online or completing a form and submitting it online.

The next chapter presents the evaluation of the proposed model.

CHAPTER 7: THE CITIZEN-CENTRIC E-GOVERNMENT MODEL EVALUATION

7.0 Introduction

The debate on characteristics of a citizen-centric e-Government remains a topic of interest (Tsohou et al., 2013; Lee et al., 2008). However, research on e-Government remains dominated by studies that sought to understand the subject from a government point of view instead of a citizen-centric point of view. Hence, there has been always a gap and a lack of compatibility between the technologies used by citizens and the nature of e-Government platforms being designed and implemented by the governments. Furthermore, African governments have been moving slowly towards the adoption of interactive e-Government (United Nations, 2018). This study sought to bridge this gap. This Chapter uses findings from Chapter 6 and conducts an evaluation of the proposed model of this study. The focus is on validating the research findings in Chapter 6. The evaluation of the proposed model shall lead to the proposition of a revised model that will reflect findings from this study.

7.1 Research overview

The study focused on proposing a citizen-centric e-Government model for Namibia. Chapter 2 of this study evaluated e-Government status with reference to Africa and Europe. Chapter 2 went on to review theories that explain government reform and the status of Namibia's e-Government. Chapter 3 proposed a model of citizen-centric e-Government. The proposed model identified areas of focus when increasing interactivity on e-Government. In addition, the model outlays the requirements that should be looked at when designing and implementing e-Government. By so doing, the proposed model aimed at addressing the challenge of the current e-Government status that is characterised by informational platforms. Furthermore, the design of e-Government platforms are compatible with technologies that are not accessible to citizens.

Chapter 4 explained the study's research methodology. Chapter 5 presents findings from data collection. Chapter 6 went on to discuss findings from data collection confirming the critical attributes of the citizen-centric e-Government model. This chapter evaluates the proposed

model. The next section explains the approach that was used by this study to evaluate the proposed model.

7.2 Citizen-centric e-Government model evaluation

The proposed model was evaluated by use of a prototype mobile application. Thus, findings on the proposed model of citizen-centric e-Government was used to inform the characteristics of a mobile government (m-Government) platform for an Identification Card (ID) application process. Chapter 6 showed that the majority of Namibian computer users access the Internet by use of a mobile phone hence, this study's use of an m-Government to evaluate the proposed model. The prototype was evaluated by citizens applying for IDs at the Ministry of Home Affairs and Immigration (MHA) in Windhoek, Katutura branch, Namibia. Six participants were engaged through interviews and attempting to use the prototype. The next section gives an overview of the participants and prototype that was used in this study and the profiles of participants.

7.2.1 An overview of the prototype

The m-Government prototype assumed that a citizen wished to apply for a new ID. Hence, they were to complete the forms on a mobile application and attach a fictitious birth certificate before submitting the application. Furthermore, the citizens were to visit the MHA offices upon receiving a text message informing them to come for the capture of finger prints and other biometrics for identification and verification. The prototype assumed that part of the ID application process was done online while other segments of the application process would be done at the MHA offices to lessen the burden on government employees and citizens. Images in Figure 27 summarises the steps that were followed during an assumed process of ID application. Participants were also interviewed during their exposure to the prototype. Interviews were done prior to exposure to the mobile application in order to gather data on background information about the participant and their perception on government service. Participants were then exposed to the prototype then asked further questions on their perception about using m-Government.

<p>1. Basic Details Please fill in your basic details.</p> <p>Name</p> <p>Surname: <input type="text"/></p> <p>First names: <input type="text"/></p> <p>Maiden Name (If applicable): <input type="text"/></p> <p>Date of Birth <input type="text"/></p> <p>Continue </p> <p>Cancel Application </p>	<p>2. Gender and Marital Status Please choose your gender and marital status.</p> <p>Gender</p> <p><input checked="" type="radio"/> Male <input type="radio"/> Female</p> <p>Marital Status</p> <p><input type="radio"/> Never Married <input type="radio"/> Married <input type="radio"/> Widow/Widower <input type="radio"/> Separated <input type="radio"/> Divorced</p> <p>Go Back Continue </p> <p>Cancel Application </p>	<p>3. Contact Details Please fill in your contact details.</p> <p>Address</p> <p>Street Address: <input type="text"/></p> <p>City: <input type="text"/></p> <p>Phone Number <input type="text"/></p> <p>Email Address <input type="text"/></p> <p>Go Back Continue </p> <p>Cancel Application </p>
<p>4. Birth Certificate A copy of your full birth certificate is required to complete the application. Please attach a photo of your birth certificate.</p> <p>Choose file No file chosen</p> <p>Go Back Continue </p> <p>Cancel Application </p>	<p>5. Confirm You may now submit your application.</p> <p>After submitting the application, you still need to contact an official for</p> <ul style="list-style-type: none"> • Giving your fingerprints • Giving your signature • Taking an ID photo. <p>By submitting the application, you declare that the information you have provided is correct and truthful.</p> <p>Go Back Submit </p> <p>Cancel Application </p>	<p></p> <p>Thank you for your application! Please contact an official for information about next steps.</p>

Figure 27. Activities of the m-Government prototype.

7.2.2 An overview of participants

Six participants were engaged to evaluate the m-Government prototype that was designed with guidance from the citizen-centric e-Government model. Participants that took part during this stage were randomly selected at the MHA offices in Katutura, one of Windhoek's high-density poorer suburbs. Targeting participants in a high residential area gave an opportunity to engage the poor and enlist their perception of e-Government. This was done to avoid the bias of using university students given their elevated level of education. Table 19 summaries the profile of participants that participated during the citizen-centric e-Government model. Participants were given labels (e.g. participant 1: P1) to avoid the use of their actual names for privacy reasons.

Participant	Gender	Age	Employment Status	Home town	Phone uses	Reason for visiting MHA offices
P1	Male	Not given	Not given	Not given	Not given	Correcting errors on the ID
P2	Female	34	Employed as a secretary	WHK	Communication, social media-WhatsApp.	Application for a birth certificate
P3	Male	24	Employed as a builder	WHK	Internet	ID collection
P4	Female	47	Not employed-housewife	WHK	Text messages	ID collection
P5	Male	Not given	Not given	WHK	Not given	ID Application
P6	Male	33	Employed as a baker	OKH	Uses a feature phone (has awareness of WhatsApp, Facebook, Twitters, those social medias)	ID collection (replacing a lost ID)

Table 19. The profile of participants (WHK: Windhoek, OKH: Okahandja).

7.2.3 An overview of participants

This section present findings from the evaluation of the proposed model of citizen-centric e-Government according to the perception of the eight participants who took part in the m-Government prototype experiment. Focus was on evaluating the importance of factors that influence the design and implementation of e-Government. These define requirements for a successful citizen-centric e-Government and they include access, ICT skills, community-based partnerships, citizen information needs, ICT infrastructure and attitude towards the technology. In addition, the characteristics of e-Government platforms were evaluated focusing on delivery of public services, efficiency of public organisations and achievement of socially desirable outcomes.

Access: it was observed that four of the participants owned a smart phone. Participant P4 lost her phone so she relied on her young son's (P5) phone. When asked if she uses a mobile phone, P4 responded that *"Yes. Most of the time, but I lost mine."* Participant P4 went on to explain that she lost phones *"twice, and I'm [now] using my son's"* phone. In addition, participant P6 indicated that he owns a feature phone. These findings suggest that access to ICTs is an important factor that should be considered when deploying e-Government. M-Government should be considered for Namibian citizens.

ICT skills: all participants except, P4, demonstrated basic ICT skills of at least completing an online form, uploading a file and submitting a form. Participant P4 asked her son to participate in the prototype experiment on her behalf. This suggest older people may not be confident about their ICT skills hence, they may need to engage their children on next of kin. In addition, participant P3 appeared shaky when completing the forms and skipped choosing a file (see step number 4 in Figure 27) something that could be due to lack of knowledge about the feature. Nevertheless, the general feeling was that the prototype application was easy to use as participant P4 summarised his perception by saying that the process was *“very easy, [if the government introduce the app.] they will bring that thing it will be very easy to applying for ID”*. Table 19 showed the different skills of participants with using the social media and text messages. Findings on ICT skills showed that it is important to understand the ICT skills of citizens prior to implementing e-Government. Furthermore, such applications should be simple and easy to understand.

Community-based partnerships: community-based partnerships are important for they could provide the necessary technical skills to support e-Government use at local level and provide access to others. Participant P2 indicated that, such an initiative *“it’s gonna [going to] take a lot of convincing people”* for them to adopt e-Government. Furthermore, P4, a 47-year-old lady was not comfortable trying out on the system. This demonstrated a need for technical support if e-Government is to be used by the elderly. When P4 was asked to complete forms on a prototype, she stated that *“oh no I don’t know what exactly [is] about a form”*. She continued to state that *“can I use my baby, my son? [Son’s name]. My son he will come and help you....He knows about mobiles.”* Furthermore, participant P3 skipped a step to upload a fictitious birth certificate something that could be due to a lack of knowledge of the feature. Furthermore, most participants did not read the message that they would need to visit government offices at a specified time to submit finger prints and a passport size photo. These findings suggest that community-based partnerships that could help citizens through these processes and steps involved are a critical requirement for e-Government in Namibia.

Citizen information needs: the majority of participants did not show clearly their sources of information they consider credible. Only participant P6 indicated that the radio and the newspapers are a reliable source of information. Participant P6 explained that *“I was reading*

in the newspaper or I heard on the radio, maybe there is a way... you can send an SMS to Home Affairs [to inquire] to know that maybe the ID's already out". Understanding trusted sources of information is critical for sharing information about e-Government.

Attitude towards technology: All respondents expressed frustration with the current service at MHA given the long queues. In addition, none of the participants suggested the use of IT in improving government services when asked for alternative measures to be taken. Participant P4 suggested recruiting more staff and making sure that the employees commit to doing their duties. She had the impression that MHA employees were too slow and sometimes lazy. In addition, participant P4 expressed a positive attitude towards the use of technology in government as her son was going through the prototype. She stated that *"I think that maybe it's gonna [going to] be easy to do something like that [completing online forms]."* She went on to stress that *"maybe people will uh will take, go for that [using Internet to access government services], because now is the time for you know this– how do you call that? The Internet and that?"* in light of the hardships faced with travelling to the government offices and waiting in long queues, all participants showed a positive attitude towards using e-Government and or m-Government.

ICT Infrastructure: interviews with participants revealed a number of ICT infrastructural concerns. Participant P2 indicated that *"they have a lack of infrastructure"* in rural areas. She went on to explain that rural areas *"don't have the MTC [Namibia's leading mobile phone service provider] towers close. They don't have access to Internet you understand."* In addition, there was an impression that data may be expensive as most of the participants indicated that they did not have data in their mobile phones. Even though participants were not required to use their phones in testing the prototype, every time the interviewer asked her co-researcher about data availability, participants would jump in to indicate they do not have data. For example, during conversations with participant P1, the interviewer asked: *"Ana, do you have uh data, could you share it?"* and participant P1 quickly responded *"no I don't have"*. *"No, I'm asking her"*, the interviewer had to clarify. Similarly, participant P2 stated that *"but I don't have data at the moment"*. These findings suggest data remain expensive for the majority of citizens and ICT infrastructure remains a critical requirement for a successful citizen-centric e-Government.

Delivery of public service: participants appeared to air their views on the importance of the delivery of public service through electronic means. For example, the quality of information with reference to a need for up-to-date, accurate and relevant information stood out as some of the important features on e-Government. For instance, participant P6 indicated how the current process is frustrating when one visits a government office only to be told that you do not have enough documents. You *“come to the office and just sit and – sometime you can come with the document is not there, then again they will send you back, yeah bring another document.”* In addition, participant P6 went on to suggest that it would be easy if government services could be provided through the Internet (e-Service) using mobile applications. *“So it will be easy and it will be very fast for the service, okay now, just come and you fill it on the smartphone, it will be very easy”.*

Furthermore, there are suggestions that a timeline for service delivery should be clear for citizens to know when to expect services delivery. Participant 6 explains: *“it would be easy for people maybe [to] know, like now I dunno [do not know].....is my ID already there or no, I dunno”.* *“Because if that service will come maybe it would be [good to] know that maybe if I go there now, I will get my ID”.* In addition, participant P2 expressed concern about a backlog and recommended the need for a clear time line for services provided through e-Government. She explained that *“I’m a bit concerned about backlog, because umm sometimes you might fill it on the app, on the app or online, and then you, they might never show up to, go to the verification process. Unless maybe that app or form has a, has a time limit that, that would be great”.* The importance of being able to track service provision progress online (Track progress online) was further emphasized by the fact that, all three participants (P3, P4 and P6) who went to collect their IDs had no clue whether it was available for collection or not. Above all, the system should be easy to use. Participant P2 stated that it would *“be great but as long as it comes with like clear and proper instructions....”*

A factor that emerged from the participants was a need to ensure the availability of financial resources to support the designing and implementation of e-Government. Participant P2 indicated that *“government finances [need to be taken] into consideration as well because it’s gonna be very costly.... But, actually implementing it is a far far cry from reality”.*

Efficiency of public organisations: findings suggest that responsiveness of an e-Government platform is critical to the efficiency of service delivery. Visiting government offices by participants P3, P4 and P6 not knowing the status of their service request suggest that, responsiveness is a critical factor. Through online responsiveness, the government could specify the minimum number of days that a public organization would take to process or deliver a service, make provisions for online inquiries, government officials could send follow up emails on inquiries, give online case tracking systems and provide automatic responses to online submissions. As a result, efficiency of public organisation is here in seen as an important element of e-Government.

In addition, there was a general feeling that there is a need to improve the efficiency of public organisations. Participant P4 explained how difficult it is to get government service under the current system: *“you’re sometimes exhausted, you come earlier and people are too much [long queues] you know that they doing so slow [offering services very slowly]”*. Participant P4 went on to indicate that, it was now 11am and *“we came [here] maybe seven or something”* and still no service has been delivered yet. Participant P6 who was engaged after 11am suggested that he has been in the queue since 6am: *“But here in Windhoek, if you can see there’s a lot of people having a queue, cause they maybe you came from six o’clock, I dunno which time I came”*. These findings suggest a need for an IT enabled public service that counters for better performance.

Another concern that was raised by participants was that, they often repeat the same process over and over again especially when they have lost their IDs. Participants are of the view that the government should make use of documents that were used during the initial or previous application process to produce an ID instead of one coming to start the process all over again. Participant P4 explains: *“another problem, waiting in the queue, for long hours, and you know, sometimes I could not understand it, if you apply for ID or something like that, why is it getting lost [the documents that were used in the previous successful application process]? You handed in everything, that-that’s the main point.I handed in, everything, why is it get lost? Come back again. To reapply. To reapply for that. And it’s very difficult.”* Making matters worse is the fact that even submitted forms and documents could be lost in the system during

an application. Citizens will only know of this on the very last minute. Participant P4 explained that *"sometimes, most of the time, they got lost, maybe lost your, maybe your picture or something like that, so I don't know when you hand it in, your picture and everything, why is it get lost"*. So, citizens often drop their application forms thinking that everything is in order and when they come to collect the ID, that when they will realise *"that it's not here"*. And they are told *"you need to reapply"* explains participant P4. These weaknesses in the current set-up could be addressed by re-designed public sector functions for better performance or sharing public information among organisations through networks to reduce redundant information supply by the citizens. After reviewing the prototype used in this study, participant P1 laughed and commented that *"there would be no more job for the"* citizens as IT replace their functions. Nevertheless, it would require a good ICT infrastructure in the government and training of ICT skills for the government to be able to use e-Government for service delivery. These findings suggest the need to improve organisational efficiency. An e-Government that does not improve efficiency may not be of importance to citizens.

Achievement of socially desirable outcomes: participants suggested a need for an environmentally friendly e-Government. After going through the prototype, participant P2 indicated that the e-Government could be a good initiative as *"it also cut down on on umm paper wastage"*. Participant P2 adds that different tribes and languages suggest a need for e-Government to be based on local languages. *"But then umm if you can see this um, umm, different tribes here..... So if maybe that process was in their languages as well. So if it was in the various ethnic languages then, I think it would help a lot."* The need for using a simple language on e-Government was demonstrated during the interviews and completion of the online form of the prototype. For example, participant P3 was confused on the meaning of occupation. In addition, participants P1, P5 and P6 did not seem to understand the meaning of maiden name, for example, P1 thought maiden name meant *"middle name"*. Participant P6 had to ask for the meaning of maiden name. The service could also be offered in the official language but have a hover items explaining the terms either in English or other languages.

In addition, a need for security was one of the elements that came out of the interviews. When invited to use the prototype for this study, participant P2 raised data safety concerns as she stated that: *"how safe is it [the prototype], cause I'm sure I have to put in all of my*

personal particulars". Furthermore, participant P6 was hesitant to enter his email address in the space provided until the interviewer notified that participant that no information was going to be captured and that a fictitious email address could be used. These findings suggest the need for publishing security and privacy statements on government websites, ensure there is trustworthiness of online interactions, government protect all the entered information and the provision of regulatory measures to ensure security on e-Government.

7.3 Revised model of citizen-centric e-Government

The results from data analysis, discussion and evaluation showed that the proposed model of citizen-centric e-Government in Chapter 3 has to be revised. Some of the factors and attributes were eliminated while some factors that emerging from data collection and analysis were included in the revised model. This led to a model of citizen-centric e-Government according to the Namibians' point of view. Findings from data collection and analysis, and evaluation led to the proposition of a model of citizen-centric e-Government shown in Figure 28.

7.3.1 Delivering of public service

The research findings of this study suggest that the Namibian citizens are of the view that the quality of information is an important component to e-Government. The most important element within this category is accurate information followed by up-to-date information, relevant and information that is simple to understand. This was confirmed by participants who evaluated the study's prototype. In particular to e-Service, respondents are of the view that the e-Government platforms should allow citizens to make payments online, track progress of any requests online, download government application forms/statements for use, download archives and search for information. The literature showed various e-Service that could be made available by the Namibian government. For instance, e-Tax filing is one of the most common e-Services governments are offering for their citizens something that is yet to be realised in Namibia. The United Nations (2014) lowly rated Namibian government's e-Service. E-Services proved popular among the three attributes of delivery of public service given high average ratings. Participants who took part in evaluating the prototype revealed satisfaction with the possibility of applying an ID over the phone. Lastly, data was evaluated on user orientation of the e-Government. The majority of respondents prefer an e-

Government platform with a well-organised and user-friendly website layout, a simple and easy to remember website address followed by a website with links to other government websites. Another significant number of respondents prefer a single website which provides information about all the government services with FAQs and a mechanism to establish user satisfaction. Arguably, a one stop shop website and application for e-Government could address the needs of the citizens with regards to user orientation.

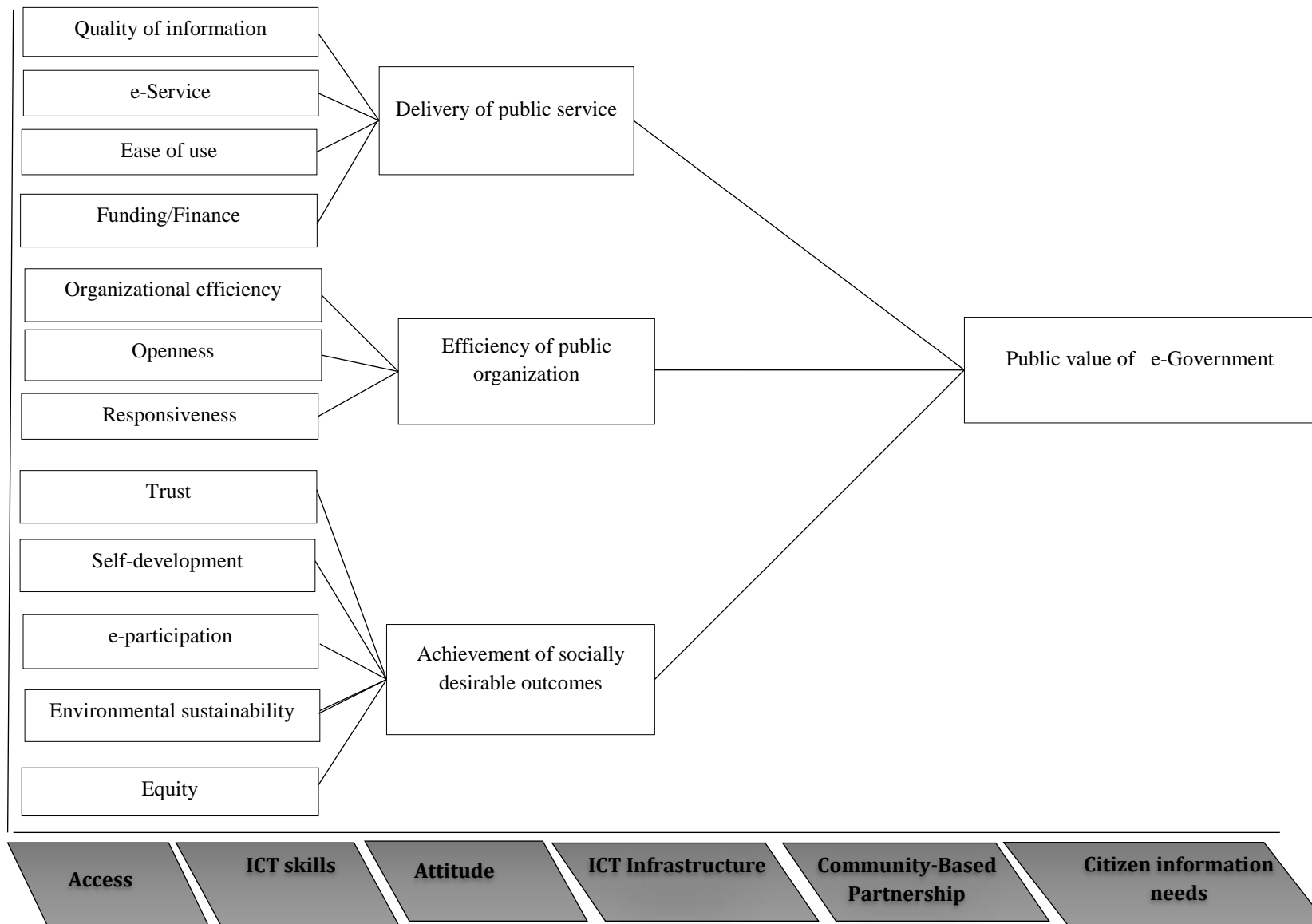


Figure 28. A model of citizen-centric e-Government in Namibia

7.3.2 Efficiency of public organisations

Research findings in this study indicate that efficiency, openness and responsiveness are the important attributes to be considered for a citizen-centric e-Government. Data on efficiency suggest there is a general perception of improved service delivery through e-Government. Respondents indicated their expectation for improved performance and cutting excess staff. Citizens are also of the view that an efficient e-Government should be able to facilitate sharing of information among public organisations. For instance, one may not need to carry proof of residence or proof of income as this can be sourced from sister organisations. Furthermore, efficiency in e-Government was expected through improving openness. Respondents expect to see public policy drafts, laws or regulations online for public consultation; publish tenders online, disclose annual plans and progress thereof; display staff contact information and display organisational charts. The need for these facilities were also confirmed during the evaluation of the prototype that was designed with guidance of the proposed model.

Data was also gathered to evaluate effectiveness in terms of government employees responding to citizens. Factors under responsiveness had the highest average ratings of all attributes considered under efficiency. This suggest the level of importance of responsiveness to citizens. Of most important is the perception that the government officials must send follow up emails to inquiries; e-Government should provide automatic responses to online submissions; citizens should be able to make inquiries online and the government should display clear timelines for delivering services. Accordingly, the need for timelines, avoiding backlogs emerged during the evaluation of the prototype.

7.3.3 Achievement of socially desirable outcomes

Data was gathered to evaluate the achievement of socially desirable outcomes. The focus was on equity, self-development, trust, environment sustainability and e-participation. In terms of promoting equality, establishing e-Government access/or resource centres in rural and semi-rural areas for better access is the most important factor for contributing to citizen-centric e-Government. This is followed by a need for content on government websites for disadvantaged people. Furthermore, citizens prefer to see content for ethnic minorities

needs; the provision of cultural and religious information and providing having websites in local language. These findings can be explained by the dominance of multiple tribes with different cultures, a huge rural population base and the use of different local languages.

In relation to self-development, respondents indicated their preference for distance learning resources on e-Government; free access to ICT resources such as computers, printers, scanners and the Internet; the provision of software applications in e-Government resources centres that develop social and network skills of children and the provision of low-cost ICT training programs offered through the government. These findings suggest that, if the government is taking the e-Government route, it also need to equip its citizens with the right resources to avoid exclusion. There is also need for funding to train and acquire the needed resources for e-Government. During the interviews, one of the participants stated that: *“We need proper funding, right now we are not financially independent. We are independent in operations but not financially. We need enough funds to be able to develop systems, and secondly it is about employment, we need to recruit the right people for the right job that is skilled one. Because the issue of funds go hand and hand with the skills development, you may find for the last two years people don’t go for training or seminars, keep them updated with technology”*.

With respect to trust, respondents felt for the need of credible information coming through government websites; informing citizens about upcoming policies that affect them; including statements on security and privacy on government sites; enhance the trustworthiness of online interactions with government; have a regulatory framework to ensure citizen e-Government interactions and the public organisations commitment to protecting information held in their systems. Namibia needs to relook at her legal framework and incorporate bills and laws that promote e-Government. For example, something like South Africa’s ECT ACT of 2002 could provide a good starting point. However, such laws and e-Government need to be promoted by campaigns to create awareness among the citizens.

Environment sustainability was also evaluated. Results suggest that the Namibian government should promote environment sustainability activities such as saving energy by

switching off ICT equipment once they are no longer in use; reduce duplication of effort through e-Government; promote the formulation of environmentally friendly policies and recycling consumables. Governments, through e-Government, are taking a slow approach to fulfilling the needs for environmental friendliness ICTs (Karunasena & Deng, 2012). Findings from this study suggest it is important that environmental sustainability through e-Government is attained.

Respondents showed a keen interest in e-Government that could promote e-participation. It was noted that there is a preference for an e-Government that inform citizens about upcoming policies; allow for online participation in public and policy making discussions; that consider citizens' opinion and the ability to set up an agenda for public discussions. In other words, there is a perception that e-Government should accommodate e-participation.

7.3.4 e-Government supporting facilities

Chapter 6 found that ICTs access, ICT skills, community-based partnerships, citizen information needs, ICT infrastructure and attitude towards the technology as important factors that support the implementation of e-Government. These factors could be considered when designing e-Government. Chapter 6 and evaluations of the prototype revealed that most citizens make use of mobile phones. Furthermore, participants that took part in the evaluation of the prototype showed to have ICT skills of completing and submitting a form. However, the elderly might be sceptical to use e-Government on their own as revealed during the prototype evaluation. Furthermore, certain groups of citizens might not understand certain features e.g. uploading a file and having the patience to read instructions and warning signs on the e-Government platform. Hence, community-based partnerships can play a pivotal role in accessing e-Government and offering technical support where necessary. Radio and newspaper were confirmed as major sources of information. Furthermore, participants in the evaluation of the prototype confirmed the availability of mobile network in urban settings and its shortage in rural areas. A finding that data remains costly was confirmed by participants' hesitancy to use their own data during the evaluation of an online prototype- even though this was not part of the requirements of evaluating the m-Government

prototype. Nevertheless, participants portrayed a positive attitude towards e-Government given the challenges of long queues and poor services offered at government departments.

7.4 Conclusion

This chapter presented the evaluation process of this study's proposed model of citizen-centric e-Government. Results from the evaluation of the proposed model were presented. The chapter concluded with a discussion of findings from evaluating the proposed model. Conclusions were drawn on the factors of citizen-centric e-Government model. The majority of factors that were found important in Chapter 6 were also found critical in the study findings of the prototype evaluation. The proposed model was revised to reflect findings from evaluation.

CHAPTER 8: RECOMMENDATIONS AND CONCLUSIONS

8.0 Introduction

This chapter concludes the study. In this capstone chapter, the research objectives are reviewed, against which pertinent conclusions from this exploratory research are presented. This chapter also justifies the research in terms of its contribution to the body of knowledge in a number of interrelated fields. Although every effort has been made to address the research objectives of the study as they pertain to e-Government evaluation from the citizens' perspectives in the context of a developing country, it is acknowledged that no single study can claim to adequately address every unknown problem during the research process.

8.1 Response to the key research questions

The principal research aim of the study was to develop “citizen-centric e-Government model for effective service delivery in Namibia”. The associated research question was framed so that the principal aim of this research could be achieved:

How can Namibian e-Government service delivery be more citizen-centric?

The concomitant research sub-questions were as follows:

1. What services do Namibian citizens desire from the governmental Ministries identified for this research?
2. What are factors contributing to the effectiveness of e-Government services in Namibia?
3. What are the necessary alternative infrastructural requirements to enhance the accessibility of e-Government services in Namibia?
4. What would the ideal citizen centric e-Government service model look like?

These questions have been answered, culminating in the proposition of a citizen-centric e-Government model. The following paragraphs provide a more detailed description of how these four questions were answered.

What services do Namibian citizens desire from the governmental Ministries identified for this research?

Chapter 2 of this study showed that different e-Government maturity models propose different levels of sophistication on e-Government. Chapter 3 went on to consolidate e-Government services as those that allow for online payment, filling and submitting online application forms, downloading government application forms/statement for use, tracking progress of application online, downloading archives and searching interactive information. Data collection and analysis showed that all these services are important to the citizens of Namibia. Though regarded as important, it was surprising that filling and submitting online application forms was not considered among the three most important e-Government services. Interestingly, downloading application forms was rated second in terms of importance.

What are factors the contributing to the effectiveness of e-Government services in Namibia?

Data analysis of Chapter 6 and 7 showed that if Namibia's citizen-centric e-Government is to be effective, efforts have to be made for promoting efficiency, openness and responsiveness. Efficiency could be improved by re-designing public sector functions, improving ICT infrastructure, sharing public information and having an IT enabled public service. Openness could be achieved by displaying public policy drafts, disclosing budget and expenditure, making provisions for citizens to complain over the internet, publishing tenders online and displaying staff contact details and their roles. Lastly, those who participated in the study indicated that the ability to make online inquiries, receiving follow-up emails on service requests from

government officials, tracking applications online and an automatic response to online submissions are important factors for promoting responsiveness.

What are the necessary alternative infrastructural requirements to enhance the accessibility of e-Government services in Namibia?

This study identified different infrastructural requirements suitable for a citizen-centric e-Government. These include the ICTs used to access the Internet. The majority of respondents indicated that they use smart phones. However, rural based respondents indicated that they own feature phones that can only text and make voice calls. This is consistent with findings in the literature (Stock et al., 2013). Another important component was the ICT skills. Respondents portrayed an appreciation of using the Internet for other services. Hence, these skills could be extended to e-Government. However, it remains imperative that the government makes e-Government awareness campaigns and train users. Community-based partnerships were also found an important component of citizen-centric e-Government. Participants indicated that e-Government could be implemented through local schools and libraries to promote accessibility and the availability of technical support. Citizen information needs and sources of information were identified. Interestingly, respondents do not search for information from Facebook neither do they call someone for information as observed in previous studies (Peters et al., 2015). The Internet and radios are the most used sources of information. Hence, the government's implementation of a citizen-centric e-Government should exploit these technologies, as they are the ones widely used as sources of information. Lastly, ICT infrastructures namely access to the national grid was more of a concern to rural dwellers. However, all respondents indicated that the cost of accessing the Internet remain unattainable. These findings suggest alternative sources of energy have to be explored for rural dwellers while the costs associated with accessing the Internet have to be explored. The government could consider subsidizing the costs of Internet when one is accessing e-Government platforms.

What would the ideal citizen centric e-Government service model look like?

This study proposed a model of citizen-centric e-Government model for a developing country. The model proposed that, citizens mainly access the Internet by mobile phones hence; the design of e-Government should be compatible with mobile phones and desktops. Furthermore, the government has to find ways of developing e-Government services that are compatible with feature phones. The model also proposed training for e-Government use. In addition, community-based partnerships, affordability of the Internet and coming up with an e-government that exploit information sources widely used by citizens are important factors that should be considered during designing of e-Government. In addition, the model proposed that a citizen-centric e-Government should:

- Have features for facilitating the delivery of service (quality information, e-Service and user orientation),
- Promote the efficiency of public organisations (organizational efficiency, openness and responsiveness) and achieve socially desirable outcomes

8.2 Evaluation of the research

According to qualitative practice, the major evaluation methodology that was adopted in this research is that of confirmability of the research, rather than arguing for reliability and validity, as is usually the case in the quantitative school. This encompassed several research tactics to enhance the credibility, transferability and dependability of the research outcomes.

8.3 Contributions of the research

The research main contribution was the proposition of a citizen-centric e-Government framework that is suitable for the Namibian government. This framework outlines critical elements that include: factors of e-Government services and factors that should be considered when implementing e-Government. The factors of e-

Government services defined services that were considered critical by the respondents. Quite often in the literature, studies focus on e-Government services alone without going further to enlist the critical factors that should be considered when implementing e-Government. This study went further to identify factors of e-Government implementation. Understanding of the context was used to define factors that influence e-Government implementation. Furthermore, these identified factors are according to the perspective of the users. In Africa, little research on e-Government has been done focusing on citizen perspective. Apart from furthering our understanding of e-Government in the Namibian context, the research makes a number of broader theoretical and methodological contributions.

8.3.1 Theoretical contribution

A comprehensive literature review of prior work on the dimensions for evaluation of e-Government service from citizens' perspective was undertaken. This enabled the conceptualization of an e-Government model, which can potentially be deployed to inform the analysis and understanding of a citizen-centric perspective of e-Government success in Namibia. The research, based on analysis of its empirical data, contributes to the field of e-Government by presenting a model for assessing e-Government service success based on citizens' perspectives. The model encompasses citizens' expectations, which accommodate the functionality and the motivation to utilise the e-Government services, as well as facilitating conditions, which encompass both enabling infrastructure and government preparedness.

This is a holistic and multi-perspective model that informs both the design of e-Government and evaluating the characteristics of a citizen-centric e-Government. Methodologically, this research is a useful example of the mixed methods research that is expected to inform other e-Government researchers who have an interest of conducting a similar study.

8.3.2 Practical contribution

The outcomes of this research have imperative practical implication for implementing e-Government in Namibia. The e-Government model developed in this research will enable government to establish an overarching strategy for monitoring and evaluating e-Government systems.

To the arena of e-Government, the research has contributed a model that bridges the gap between the government and citizens who are the users of the e-Government services in Namibia. Closing this gap will widen the scope of e-Government systems evaluation to include multi-dimensions that embodies citizens' perspectives. To managers and project sponsors, this model contributed a foundation to build on by considering citizens' expectations and facilitating conditions when conducting e-Government project evaluation.

8.4 Future research

In the course of this study that focused on developing a citizen-centric model of e-Government, a number of issues that needs more attention were brought to light. Addressing these issues will advance the understanding of e-Government and e-Government evaluations, and the ways to evaluate e-Government initiatives in developing countries. However, not all issues were addressed in this study because of time and resource limitations; thus, this section presents outstanding areas worthy of consideration for future research.

The outcomes of the study underscore the significance of providing e-Government services that aligns with citizens' expectations. Future research could investigate the importance of the dimensions on a larger scale that includes more selected e-Government services.

Furthermore, as the improvement of citizens' expectations and facilitating condition

dimensions helps to increase usage of e-Government services, there is a need to understand their impact on society from the social, economic, and governance perspective; hence, evaluation of e-Government remains vital.

8.5 Conclusion

As in other developing countries, implementation of e-Government services in Namibia has been ongoing but at a slow pace. Improving service delivery through engaging ICTs has been an area of interest to the Namibian government since the year of attaining independence. While there has been a general improvement in policy frameworks for e-Government, implementation remains stagnant. Service delivery of the Namibian e-Government remains on the lower levels of most maturity models. E-Government platforms remain highly informational with little or no transaction that could be facilitated. Further complicating e-Government implementation is a wide gap in access to ICT resources between the rural and urban settings. Rural areas have poor ICT supporting infrastructure, mobile phones are the main ICT that is used to access the Internet and Internet access costs remain high. As such, this study took a citizen-centric approach to try and bridge the gap between the citizens and practitioners of e-Government who are responsible for its designing and evaluation. This study argued for creating value to the citizens through e-Government. Accordingly, this chapter reviewed actions that were taken to meet the study research questions that led to the proposition of a model of citizen-centric e-Government. A mixed methods research was used. Data analysis and findings shows that Namibian citizens are of the view that citizen-centric e-Government is one with a design that is compatible with smart mobile phones, feature phones and computers. To promote equal access between rural and urban areas, the e-Government should be implemented through local community-based partnerships such as using local schools and libraries. Furthermore, the government has to take into consideration the high costs of the Internet when designing an e-Government. Thus, the resultant e-Government should not require a lot of data for it to be accessed else the government could subsidise costs associated

with accessing e-Government platforms. Furthermore, awareness and training citizens on e-Government is an important component for its success. In light of these propositions, a citizen centric e-Government should allow citizens to access government services from the comfort of their homes, improve efficiency and promote sustainable development.

Future research in this field of e-Government and the principal limitations to the present research, as identified by the researcher, were presented. Finally, the researcher's point of view is that the provision of and evaluation of e-government services are highly complex processes, requiring a strong strategy that is cognisant of the fact that dimensions of effectiveness change over time.

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APPENDIX A: ETHICS CLEARANCE



NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY

FACULTY RESEARCH ETHICS COMMITTEE (F-REC)

DECISION/FEEDBACK ON RESEARCH PROPOSAL

Dear Ms Karin Amukugo

Research Topic: Developing a Citizen- Centric E-government Model for Effective Service Delivery in Namibia

Supervisor: Dr Anicia Peters

Qualification registered for: Doctoral

(Reference number of application: FACULTY RESEARCH ETHICS COMMITTEE REGISTRATION NUMBER: 04/2017)

Re: Ethical screening application No: F-REC-04/2017

The Faculty of Computing and Informatics (FCI) Ethics Screening Committee of the Namibia University of Science and Technology reviewed your application for the above-mentioned research. The research as set out in the application has been:

Approved	<input checked="" type="checkbox"/>
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(Indicate with an X, and N/A if not applicable and proceed)

We would like to point out that you, as researcher, are obliged to maintain the ethical integrity of your research, adhere to the ethical guidelines of NUST, and remain within the scope of your research proposal and supporting evidence as submitted to the F-REC. Should any aspect of your research change from the information as presented to the F-REC, which could have an effect on the possibility of harm to any research subject, you are under the obligation to report it immediately to your supervisor or F-REC as applicable in writing. Should there be any uncertainty in this regard, you have to consult with the F-REC.

We wish you success with your research, and trust that it will make a positive contribution to the quest for knowledge at NUST.

Recommendation: The application is approved: Recommendations of FCI/F-REC stated in the minutes of the meeting held on 28 March 2017, were addressed to the satisfaction of the Chairperson.

Sincerely,

Prof. Hippolyte N. MUYINGI
Chair: Faculty Ethics Screening Committee
Tel: +264-61-207-2888

The Questionnaire

Survey on Perceived Citizen Centric of e-Government Initiatives

This research aims to investigate your perceptions on the citizen centric of the e-government.

E-Government

In this survey, electronic government (e-government) refers to the use of information and communication technologies (ICT) in government activities for creating a better value for citizens. Thus, e-government includes electronic public service delivery (through websites, e-services, call centers), use of ICT in public organizations for internal administration and the use of ICT to enhance various socially desirable outcomes such as trust, equity, development of citizens, environmental sustainability and so forth.

This survey contains following sections

Part: demographic information

Part II : your public values about various e-government initiatives

Your assistance is requested in anonymously answering the questions. Your responses will be strictly confidential.

Thank you in advance.

Part I: Demographic Information

1. What is the name of the District and Region where you stay?

.....

2. What is your gender?

Male ☐

Female ☐

3. Are you employed?

Yes ☐

No ☐

Retired ☐

4. What is your highest level of education?

No School ☐

High School ☐

Degree/Diploma ☐

Postgraduate Degree ☐

Other Specify ☐

5. Do you use or pay your water services electronically (e-government)?

Yes ☐

No ☐

☐ Non profit

6. Do you use or pay your water services electronically (e-government)?

Yes ☐

No ☐

7. Which of the following electronic devices do you own and use?

Mobile phone ☐

Smart mobile phone ☐

Tablet ☐

Laptop / Personal computer ☐

8. Which device do you use mostly to access the Internet (e.g. smart mobile phone or tablet or laptop / personal computer)

Part II – The public value of e-government

This section seeks to establish what you would value and expect from the delivery of public services through an e-government. Please rate your responses according to the following scale given below. ***Please tick (✓) the appropriate box 5 = Highly important and 1= Not important at all***

9. How important is the information that gets delivered to you?

9a. Accurate information	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
9b. Up to date information	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
9c. Relevant information	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
9d. Simple to understand information	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1

10.To what extent are the following important to you?

10a. Payment online	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input checked="" type="radio"/> 1
10b. Fill and submit online application forms	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
10c. Download government applications forms/statements for use	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
10d. Track progress online	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
10e. Download archives (gazettes, reports, press release)	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
10f. Search interactive information (e.g. agriculture information, cattle dipping time table)	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1

11.To what extent are the following important to you?

11a. Well organized and user friendly website layout	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
11b. Simple (easy to remember) website addresses	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
11c. A single website which provides links to other government websites	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
11d. A single website which provides information about all the government services	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
11e. Common look and feel of websites	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
11f. Designing websites for none internet savvy people	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
11g. Frequently asked questions (FAQs) and site map	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1

12.To what extent do you think that improving the performance efficiency of public organization through e-government is important?

12a. IT enabled public service counters for better performance	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
12b. Re-designed public sector functions for better performance	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
12c. Improved ICT infrastructure within the public organisations for better performance.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
12d. Sharing public information among organisations through networks to reduce redundant information supply by the citizens.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
12e. Empowering public sector staff with ICT skills	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
12f. Cut excess staff by implementing information systems to reduce administration burdens on government.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1

13. To what extent do you think that improving the openness of public organizations through e-government is important?

13a. Public policy drafts, laws or regulations online for public consultation	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
13b. Public organizations disclose their budget/expenses online to show accountability of their expenses.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
13c. Public organizations disclose their annual plan and progress online to show their accountability of achieving public goals.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
13d. Citizens make complains online.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
13e. Publish tenders online to increase the transparency.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
13f. Display staffs contact information online.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
13g. Public organizations display their contact information online.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
13h. Display organizational charts, duties and responsibilities of public sector staff.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1

14. To what extent do you think that improving the responsiveness of public organizations through e-government is important?

14a. Display citizen charter online (citizen charter specifies the minimum number of days that a public organization takes to process or deliver a service).	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
14b. Ability to make inquiries online.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
14c. Government officials send follow up emails for your emails or inquiries.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
14d. Online case tracking (e.g. status of an application submitted to a government organization).	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
14e. Automatic responses to online submissions and emails.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1

15. To what extent do you think that promoting equality through e-government is important to you and the society?

15a. Provision of government websites' content in local language.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
15b. Establishment of e-government access/or resources centres in rural and semi-urban areas to provide better access to e-government services	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
15c. Websites which comply with the accessibility standards to support people with special needs (e.g. hearing, visual problems).	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
15d. Content for the socially disadvantaged people (poor people).	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
15e. Provide appropriate content to address the needs of ethnic minorities.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
15f. Provide cultural and religious information.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1

16. To what extent do you think that self-development of citizen as an outcome of e-government is important?

16a. ICT resources such as computers, printers, scanners, and Internet should be freely available for public use.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
16b. Low cost ICT training programs conducted by government centres.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
16c. Content that support students educationn. (e.g. digital text book, digital libraries).	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
16d. Software applications available in e-government resources centers that develop social and network skills of children.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
16e. Resources for distance learning.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1

17. To what extent do you think that trust as an outcome of e-government is important?

17a. Security and privacy statement of all government websites	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
17b. Trustworthiness of online interactions with government	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
17c. Public organizations protects your information held in e-government systems.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
17d. Credible information dissemination through government websites	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
17e. A regulatory framework to ensure citizens' e-government interactions.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1

18. To what extent do you think that ability to participate in democratic decision making through e-government is important?

18a. Government keeps you informed about upcoming policies that affect you through websites (e.g. online news letters, bulletin boards).	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
18b. The opportunity to actually participate online in public discussions and policy making.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
18c. The government takes your opinion for actual decision making.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
18d. Ability to post a topic (set up an agenda) for public discussions.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1

19. To what extent do you consider environment sustainability as an outcome of e-government is important?

19a. Developing e-government applications which help to limit duplication effort and resources.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
19b. Switch off computers, printers and other ICT equipment when not needed (energy saving).	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
19c. Reduction of paper printing (double side printing, use electronic copies).	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
19d. Recycling consumable equipment (e.g. papers, ink cartridges etc).	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
19e. Taking your inputs for implementing 'Green Information Technology' policy formulation within government.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
19f. Retire computers systems that are not energy efficient.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1

20. To what extent do you have access to ICTs supporting infrastructure?

20a. There is mobile cellular network where I stay.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
20b. I have access to the Internet.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
20c. There is reliable access to electricity where I stay.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
20d. I use solar panels for access to electricity.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
20e. I find the cost of internet access affordable.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1

21. To what extent do you feel you have adequate skills to make use of e-government services?

21a. I consider myself well informed about the use of computers and mobile phones to access e-government services.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
21b. I fear using computers and mobile phones for government services is complicated for me.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
21c. I have no problem using the Internet by myself to get government services	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
21d. I am perfectly able to explain the strengths and weaknesses of the Internet to others.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1

22. What is your perception on the following?

22a. Using the Internet to access government services is unrealistic.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
22b. Fast technological developments are a good thing	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
22c. I sometimes discuss with my friends how government can provide service using the Internet	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
22d. I doubt that the Internet is good enough for providing government services.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
22e. I prefer walking into a government office for service instead of using the Internet.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
22f. I am interested in using the Internet to get government services, but only if my friends and family are doing so	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
22g. Since I already know about the Internet, I will find out more about e-government services.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
22h. If you do not want to be left behind, using the Internet is necessary.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1

23. How do you feel over the need of community-based e-government engagement and support.

23a. Local schools should provide computers and technical support for e-government.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
23b. e-government has to be intergrated in local government library for support.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
23c. Government should provide training on e-government.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
23d. Government should engage in e-government awareness campaigns.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1

24. To what extent are the following true to you?

24a. The radio is my major source of information.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
24b. I get most of the information I want from facebook.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
24c. I use the television to gain access to information.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
24d. I search the Internet when looking for information.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
24e. I have to make calls to those I know when looking for information.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1
24f. The newspaper is my main source of information.	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1

The End

Thank You

APPENDIX C: INTERVIEW QUESTIONS

INTERVIEW QUESTIONS

Survey on Perceptions of Citizen Centric of e-Government Initiatives

This research aims to investigate your perceptions on the citizen centric of the e-government.

E-Governmet

In this survey, electronic government (e-government) refers to the use of information and communication technologies (ICT) in government activities for creating a better value for citizens. Thus, e-government includes electronic public service delivery (through websites, e-services, call centers), use of ICT in public organizations for internal administration and the use of ICT to enhance various socially desirable outcomes such as trust, equity, development of citizens, environmental sustainability and so forth.

Your assistance is requested in anonymously answering the questions. Your responses will be strictly confidential.

Thank you in advance.

1. Perceptions on delivering quality service through e-government

- a. Do you think delivery of quality public service through e-government is valuable to you?

- b. What do you expect from the delivery of public services through e-government?

- c. How does public service delivery through e-government in Namibia create value to you/what initiatives have been put in place?

- d. What expectations do you have about the value of quality information, e-service, channels and usability features of public service delivery channels?

- e. How do you think government should improve the delivery of public service through e-government for creating better value for you?

2. Perceptions about the value of operating effective public organisations through e-government

- a. Do you think operating effective public organisation through e-government is valuable to you?

- b. Why do you think operating effective public organisation through e-government is valuable?

- c. What do you expect from operating effective public organisation through e-government?

- d. How do you expect the operation of effective public organisation through e-government should create value to you?

- e. What is your perception on improving public sector efficiency, openness and responsiveness through e-government?

- f. How do you think the government should improve the value of operating effective public organisation through e-government for creating better value for you?

3. Perception about the value of achieving socially desirable outcomes through e-government

- a. What type of socially desirable outcomes do you expect from e-government?

- b. What type of socially desirable outcomes do you expect from e-government for your society?

- c. How ensuring equity through e-government is valuable to you and your society? Motivate your answer ?

- d. How ensuring self-development of citizens through e-government is important in your society? Motivate your answer

- e. How is building trust through e-government valuable to you and your society?

- f. How ensuring participation democracy through e-government is vital to you and your society? Motivate your answer?

- g. How is ensuring environmental sustainability through e-government valuable to you and your society?

- h. What e-government initiatives have been put in place in Namibia for ensuring equity, trust, participatory democracy, self-development and environmental sustainability?

- i. How do you think the government should improve the creation of socially desirable outcomes through e-government?
