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SCHOOL OF ECONOMIC & BUSINESS SCIENCES

Explaining the Use and Non-Use of Smart Cities Services in Johannesburg: Residents' Perspectives

A research dissertation submitted by
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for the Degree of

Master of Commerce (Information Systems) by Research

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Abstract

One of the aims of the development of Smart City initiatives is to provide electronic services that address residents' information needs. Local governments in South Africa have realised that e-government can improve service delivery. There are currently government e-services that are designed to meet residents' information needs and transform Johannesburg into a Smart City. However, local governments face the challenge of deficiencies in the use of government e-services. In order to ensure that all residents benefit from Smart City services there is a need to understand the use and non-use of these services. This research has been conducted in Johannesburg to understand what makes people use or not use the provided Smart City services. In this context, Smart City services refer to government e-service websites and government city Wi-Fi.

The research was addressed from an interpretive perspective employing qualitative methods. The theoretical framework of government websites utilisation developed by Wang (2014) was used as a theoretical grounding. Data was collected through in-depth semi-structured face-to-face interviews with open-ended questions. Twelve interviews were concluded. The results confirm Wang's (2014) theoretical framework in that all the major concepts: value, user needs, effectiveness of government websites, and alternative information sources were reflected as influencing the use and non-use of Smart City services. In addition the results extend Wang's (2014) framework with additional important core concepts: awareness, access, and trust. These concepts are particularly important to residents' participation in a developing country context and can be used to create a deeper understanding of how different types of residents engage or don't engage with Smart City services. In the pursuit of Smart Cities, local governments can use the results of the study to establish measures that can increase the use of free Wi-Fi around the city and government websites.

A paper from this research report has been peer reviewed and was accepted for the Community Informatics Research Network (CIRN) conference which was held at Monash University in Italy, Prato. The title of the paper is: Explaining the Use and Non-Use of Smart

Cities Services in Johannesburg: Residents' Perspectives. On the 9th, 10th, and 11th November 2015, I attended the CIRN conference in Italy and presented the paper. The paper will be part of the conference proceedings.

I presented my research proposal at the 2015 Southern African Computer Lecturers' Association (SACLA) conference Masters and Doctoral Symposium in Johannesburg on the 2nd July 2015.

Key Terms: Smart Cities, Smart City' Services, e-government, use of e-services

Smart Cities: The adapted definition of Smart Cities indicates that a Smart City is a city that utilises ICT technologies to deliver services efficiently and effectively to the citizens (Lee & Lee, 2014). The focus of the study is on ways in which information systems can contribute to the development of Smart Cities (Backhouse & Cohen, 2014). For the purpose of this research, these ways are restricted to the development of e-government services that address residents' needs and preferences.

Smart City services: Smart City services are services delivered through ICT technologies (Lee & Lee, 2014). For the purpose of this study, these services are scoped as e-government websites and free government Wi-Fi services around the city.

E-government: E-government refers to the practice of using ICT to deliver automated government services to the residents (Kaisara & Pather, 2011). Smart City services provided by the government are considered to be part of the e-government initiative (Chourabi, Walker, Gil-Garcia, Mellouli, Nahon, Pardo & Scholl , 2012; Kogan & Lee., 2014; Lee & Lee, 2014).

1 CHAPTER ONE: INTRODUCTION

1.1 Introduction to Chapter One

This chapter is the introduction to the study and it addresses eight different aspects of this research study. First, the chapter provides a background of the study to introduce the Smart Cities phenomenon. The next part of the chapter discusses the problem statement and this section provides a description of the phenomenon being investigated. The purpose of the study then follows; this part has been broken down into aims and objectives of the research. Before explaining the context in which the study was conducted, the chapter presents the central research question and the sub-questions. Subsequently, the context of the study is discussed. After this section, an introduction to the research paradigm and method adopted in the study is provided. The chapter proceeds to an introduction to the significance of the study. This part outlines the importance of the research to theory and to practitioners. Before providing a conclusion of chapter one, an outline of the structure of the entire research report is provided.

1.2 Background of the Study

The concept of a Smart City has increasingly attracted academics and practitioners' attention (Lee & Lee, 2014). Different authors view a Smart City through different lenses depending on their field of study (Backhouse & Cohen, 2014; Hollands, 2008). Therefore, there are currently different perspectives of a Smart City. Nevertheless, the idea that Smart Cities initiatives can facilitate the development of Smart City services that meet residents' information needs and ensure a comfortable, innovative, liveable environment for the residents has gained acceptance and it is appealing (Allwinkle & Cruickshank, 2011; Carter & Belanger, 2005). In the context of this study, the term 'Smart Cities services' refers to e-government electronic services (e-services) that meet residents' information and service needs (Hollands, 2008; Lee & Lee, 2008). According to Lee and Lee (2014), e-services can be defined as services that are facilitated by Information and Communication Technologies (ICT).

In an attempt to transform cities into Smart Cities, governments are increasingly developing and implementing government e-services (Lee & Lee, 2014). The aim is to provide efficient and effective services that reach people in different societies and areas. E-government initiatives have the potential to be an equaliser by making information services available to all residents from different societal levels and communities. On the other hand, because e-government services can only be accessed by residents who have internet connectivity and the resources required to connect to the internet, they also have the potential to create inequity. Residents who are unable to use these services may be disadvantaged because they may not get the services they need or they may be getting the services in a costly way, in terms of transport and time to access the services offline.

Several authors affirm that the extent to which the provided e-government services meet residents' information needs and preferences is one measure of the success of Smart Cities initiatives (Lee & Lee, 2014). The city and provincial governments in South Africa have also realised the need to implement Smart Cities initiatives in cities in South Africa (Das, Burger & Eromobor, 2012; Kaisara & Pather, 2011; Mutula & Mostert, 2010; Odendaal, 2003).

1.3 Problem Statement

In South Africa, there are currently various private organisations that adopt ICT to deliver services to their clients (Kaisara & Pather, 2011; Mutula & Mostert, 2010; Odendaal, 2003). These organisations include banks and airline companies. Residents of Johannesburg, a city of South Africa, expect the same level of information access and personalisation from the public services as they receive from the leading private organisations such as banks and airline companies (Kaisara & Pather, 2011; Mutula & Mostert, 2010; Odendaal, 2003). This argument has support from Ke and Wei (2004) who establish that greater use of the internet has redefined the public expectations of the services provided by the government. In order to respond to this increased demand for information services, local governments in cities in South Africa have taken steps to develop and implement e-services to enhance the service delivery process (Kaisara & Pather, 2011; Mutula & Mostert, 2010).

In Johannesburg, several government websites have been designed to deliver government information and services to residents and to strengthen the interaction between local governments and residents. The government websites include the city of Johannesburg website (www.joburg.co.za) which offers a wide range of services that include: registering an

email address and receiving rates, water and electricity invoices online and making payments, and the interactive map that helps residents find their way around the city. The other website is the Department of Home Affairs website; this website provides information about passport, identity document applications, and any other information related to Home Affairs. Another example of a government website is the Johannesburg traffic fines website; e-services provided here include checking fines online and making payments.

The city government has also embarked on broadband infrastructure investments in an attempt to provide internet connectivity to the residents (Kaisara & Pather, 2011; Mutula & Mostert, 2010). The hope is that internet connectivity will allow all residents to have access to such government e-services (Mutula & Mostert, 2010). The city government aims to ensure that the delivery of e-services is equitable. There are currently several areas where free internet connectivity in the form of 'Wi-Fi' is provided to the residents in Johannesburg. Wi-Fi is defined as wireless internet connectivity, and Wi-Fi hot-spots refer to places where wireless internet access is provided (Bernaschi, Cacace, Iannello, Vellucci, & Vollero, 2009).

Despite South Africa's significant investments in ICT with the aim of providing internet connectivity and government e-services to the residents, several studies have reported a low use of these services (e.g. Bwalya & Healy, 2010; Kaisara & Pather, 2011; Maumbe, Owei & Alexander, 2008; Mutula & Mostert, 2010).

Reports from the Gauteng City Region Observatory (GCRO) Quality Of Life (QOL) surveys were used to identify residents' use of e-government and the internet. The reports indicate a low use of the internet and a low use of e-government information services. GCRO was established in 2008 as a partnership between the University of the Witwatersrand (Wits), University of Johannesburg (UJ), and the Gauteng Provincial Government (GPG). One of the specific roles of the GCRO is to collect and store strategically useful data and surveys. Figure 1 presents a snapshot of the GCRO 2013 QOL survey internet and e-government use results. The results indicate that 63.9% of residents had not accessed the internet in the past four weeks, and 97.1% of residents do not use the internet to obtain government information. These reports illustrate a mismatch between investments in and the use of e-government services. The reports have been sourced from the GCRO website (www.gcro.org).

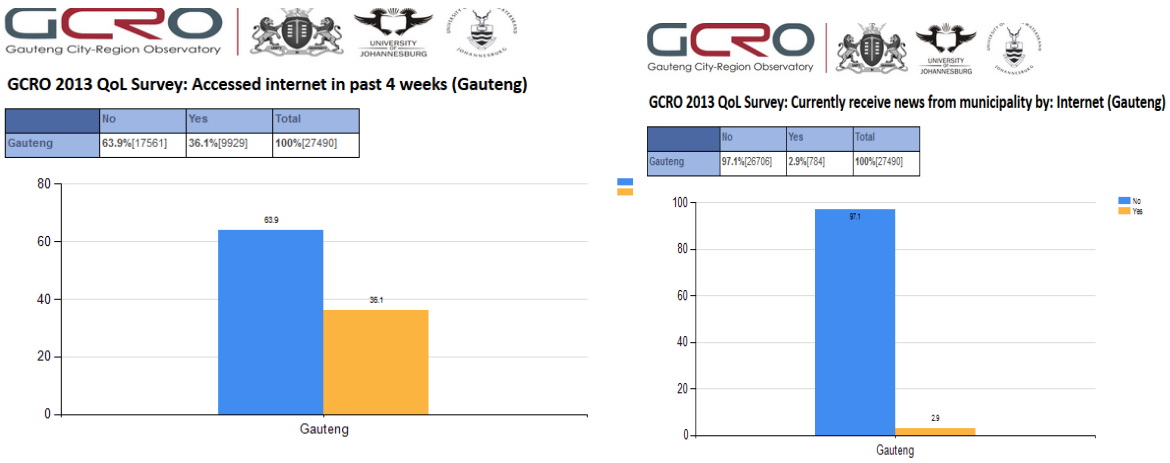

Figure 1: GCRO 2013 QOL Survey report: Internet and e-government services use

It is unclear why residents do not use the internet and the provided e-government services. This argument points to the idea that there might be specific reasons why residents are not using the provided e-government services (Carter & Belanger, 2005). Perhaps these services do not sufficiently address the residents' needs. In their study, Kumar and Best (2006) identified a positive relationship between the presence of the internet facilities in the villages and the use of the government e-services in India. This means that the lack of internet facilities might lead to the non-use of the provided government e-services (Kumar & Best, 2006). While this seems to be a reasonable co-relation, there is currently no empirical evidence indicating that the same relationship applies to residents' of Johannesburg.

Smart Cities service initiatives may not work unless local governments understand why residents use or do not use the provided e-government services. This argument has support from several studies that affirm that the success of e-government service initiatives is dependent on the engagement and participation of the residents (e.g. Carter & Belanger, 2005; Hung, Chang, & Yu, 2006). The development of Smart City services requires creative, flexible, open-minded residents who are willing to take-up the provided e-government services (Carter & Belanger, 2005; Giffinger, Fertner, Kramar, Kalasek, Pichler-Milanović & Meijers, 2007).

1.3.1 Phenomenon under investigation

This study specifically focuses on residents' use and non-use of these two services: the web-based government e-services, and the free Wi-Fi services. These two services are selected because they address two important aspects of the Information Systems (IS) perspective of Smart Cities: digitally connected living and informated living (Backhouse & Cohen, 2014).

The concept of an informated business was first introduced by Zuboff (1988) and it emerged from the idea that information systems automate manual systems and in the process, generate information that supports decision making processes and daily activities. Informated living is where information systems are used to support decisions and actions in people's daily lives and they generate further useful information in the process. Being digitally connected is a prerequisite for informated living. Digitally connected living is defined as the extent to which residents' have access to all resources required to access and use the internet and e-services (Backhouse & Cohen, 2014). The use of web-based government e-services is an example of informated living and the use of Wi-Fi around the city is an example of the digitally connected living dimension of Smart Cities.

1.4 Purpose of the study

The specific purpose of the study is to identify concepts that explain why residents' use or do not use Smart City services.

1.4.1 Aim

The aim of this research is to explain residents' use and non-use of Smart City services provided in Johannesburg and identify why residents use or do not use the provided Smart City services.

1.4.2 Objectives

The specific objectives of the research are outlined as follows:

- Collect empirical evidence to explain residents' use and non-use of the Smart City services under investigation.
- Seek theoretical concepts that explain residents' use and non-use of these Smart City services

1.5 Research Question

The concerns illuminated in the problem statement translated into the following central research question:

How can we explain the use and non-use of the provided Smart Cities Services?

1.5.1 Sub-questions

- How can we explain the use and non-use of Wi-Fi services around the city?
- How can we explain the use and non-use of government Websites?

1.6 Context of the study

The study was conducted in South Africa, specifically in Johannesburg. According to statistics South Africa (2015), Johannesburg is the largest city in South Africa, 72.7% of the population in Johannesburg consist of a 'working age' (15-64 years old) group of individuals, while 19.2% comprise of residents undertaking higher education studies (Statistics South Africa, 2015). Residents from all parts of South Africa settle in Johannesburg either for higher education studying or for employment. In this regard, like thousands of cities and communities around the world, Johannesburg faces intractable challenges that include providing integrated services that meet residents' information needs and demands, and being sustainable (Chourabi et al., 2012).

1.7 Introduction to Research Paradigm and Method

This is an interpretive research study that employs the qualitative research method to address the research question. One-on-one in-depth semi-structured interviews were conducted and the interview responses were used to answer the central research question. Semi-structured interviews enabled the researcher to ask additional follow-up questions and probe for deeper understanding. The sample was drawn from the population of residents in Johannesburg and twelve interviews were concluded. This sample is in accordance with what other researches and experts recommended and have used (Dayson, 2010; Moore, 2011; Russell, 2013). A purposive sample strategy was used to select participants with the desired contextual characteristics and data collection ended when a pattern of evidence that addressed the central research question was reached. An interview guide with open-ended questions was used to ask each participant questions. These interviews were digitally recorded. Informed consent to conduct and record the interviews was obtained from every participant before the interview. Upon completion of the interviews, the digital audio files were transcribed and coded by use of closed coding and opening coding techniques.

1.8 Introduction to Significance of the Study

1.8.1 Contribution to Theory

The study made use of Wang's (2014) framework for government website utilisation, and the applicability of this framework in the Johannesburg context was investigated. The study identified that the major concepts in Wang's (2014) theoretical framework: value, effectiveness, user needs, and alternative information sources apply in the current context. Most importantly, the study revealed that there is a need to extend Wang's (2014) framework. The study adds these core concepts: trust, access, and awareness to the framework to make it applicable in a Johannesburg context. These concepts are particularly important to residents' participation in a developing country context and can be used to create a deeper understanding of how different types of residents engage or don't engage with Smart City services.

The study makes an important contribution to theory by employing the qualitative methodology to discover additional theoretical elements that are not well represented in the current theories. Wang (2014) argues that previous quantitative studies in the e-government service use field have hindered the discovery of new theoretical concepts that may provide an understanding of the use and non-use of e-government services. By moving beyond just verifying the variables represented in existing theories, the study deepens the understating of the use and non-use of e-government services.

1.8.2 Contribution to Practice

The study provides an understanding of the reasons underpinning residents' use and non-use of the provided e-government services. If not used by the residents, e-government services developed to address residents' information needs might eventually become obsolete (Lee & Lee, 2014). Hence the provided e-services will not deliver improvements in the quality of life of the resident; this will lead to wasted investments (Lee & Lee, 2014). The research helps local governments direct their attention to the different approaches that can be employed to address barriers to the use of e-services, and ensure that the Smart city services developed to meet residents' needs do not become obsolete.

Given that several cities in South Africa: Bloemfontein, Cape Town, Durban, Johannesburg and Tshwane, are putting in place plans to become Smart Cities (Das, Burger & Eromobor,

2012; Kaisara & Pather, 2011; Mutula & Mostert, 2010; Odendaal, 2003), the study provides direction that may guide their processes and sustain these cities towards their goal of addressing residents' information needs and becoming Smart Cities.

1.9 Structure of the Research Report

The remainder of the research report is structured as follows. The chapter that follows is a literature review chapter and it provides a review of the relevant literature. A literature review was conducted to identify research studies that investigated the use of e-government services, and theories and models adapted by these studies. Chapter two also provides a background discussion on Smart Cities and Smart Cities definitions. Chapter three is the theoretical framing chapter and it consists of the choice of the underpinning theoretical framework and a justification for its selection. In arguing for these choices, a summary of background literature describing the contributions and shortcomings of past research is provided. Chapter four is the research methods chapter and it consists of the methodology section of the study. The methodology section of this research document provides information related to the research paradigm, research methods, a debate about rigor in qualitative research, and validity and reliability of the current study. Chapter five is the analysis chapter and it shows the analytical procedures followed when collecting and analysing data. The aim is to transparently present the procedures that have been followed to address the central research question. This chapter thoroughly presents the sampling procedure, interview process and data analysis. Chapter six is the discussion chapter; it provides a discussion of the findings in relation to literature and data. Chapter seven is the conclusion chapter; the chapter provides a discussion on how the research questions have been answered, contributions, research recommendations, future research directions, and limitations of the study. Lastly, a reference list and appendices are provided. Appendix A provides a research instrument of the study and a covering letter to potential respondents motivating them to participate. Appendix B provides an ethical clearance letter from the university community. Appendix C provides raw data in a form of interview transcripts and Appendix D provides processed data from Atlas.ti, grouped into codes.

1.10 Conclusion of Chapter One

The chapter provided a background discussion of Smart Cities. This was followed by a problem statement and the phenomenon being investigated. The chapter also provided the purpose of the study, which was divided into aims and objectives of the research. From there the central research question and the sub-questions were presented. This was followed by an overview of the context of the study. An introduction of the selected research method was presented. Subsequently, the chapter provided an introduction to the significance of the study. The significance of the study was broken down into two parts: the contribution the study makes to theory, and the contribution the study makes to practice. Lastly, the chapter ends with an outline of the structure of this research report.

2 CHAPER TWO: LITERATURE REVIEW

2.1 Introduction to the Literature Review

The aim of the literature review was to investigate studies that examine the use of e-government services, as well as the academic theories that were used to underpin these studies. The literature review focused on the adoption, appropriation and use of e-government services. The literature review is divided into four discussion areas. The first two areas present a discussion on the background to Smart Cities and e-government and also on the conceptualisation and definitions of Smart Cities. The third discussion area focuses on the academic theories that were used to underpin the relevant research studies on the use of government e-services and the gaps identified in each theory. This is followed by a review and critique of studies on the use of e-government services. The research gaps identified in these studies are discussed. The literature review chapter culminates in a table summarising some of the factors that were identified and that were found to influence the use of e-government services.

2.2 Background Discussion on Smart Cities

The history of Smart Cities begins in 1994, with investigations of Smart Cities being carried out in the Netherlands (Besselaar & Beckers, 2005). The concept of the Digital City (DDS) was launched as an experiment in Amsterdam (Besselaar & Beckers, 2005). The DDS was a project that aimed to use ICT to transform both the urban structures and the lives of the residents in Amsterdam (Besselaar & Beckers, 2005). In addition, the project aimed to increase the role of ICT in the process of reshaping the city's global economy and geographical dimensions (Besselaar & Beckers, 2005). According to the DDS project initiatives, the availability of advanced ICT infrastructure was necessary if the local society was to become connected. Since its establishment in 1994, the DDS has attracted the attention of both the press and academic researchers (Besselaar & Beckers, 2005).

In recent years, research studies in the Smart Cities field are being conducted in countries throughout the world (Kogan & Lee, 2014). The majority of the population in most countries

is now settling in cities (Chourabi et al., 2012; Lee & Lee, 2014), and the Smart Cities concept has been identified as a way of managing the rapidly increasing urban population and also addressing the information needs and preferences of the residents (Kogan & Lee, 2014). According to Kogan and Lee (2014), more than 50% of the world's population is settled in urban areas and, by 2050, this percentage is likely to increase to 70%. This argument is supported by Lee and Lee (2014) who point out that in 2009, half of the total global population consisted of people living in cities and that, in 2030, more than 60% of the total global population will comprise people living in the urban areas.

Within the context of this increasing urban population, local governments in cities around the world are seeking different ways of efficiently and effectively addressing the residents' information and service needs. Local governments are realising that ICT may play a key role in improving the service delivery process. Several researchers in the field of Smart Cities argue that technology has a vital role to play in developing Smart City services that meet the information needs and preferences of urban residents (Hall, 2000; Hollands, 2008; Kogan & Lee, 2014; Lee & Lee, 2014).

The information systems (IS) aspect of the Smart City services refers to the e-services provided by means of ICT technologies (Lee & Lee, 2014). The same definition addresses the e-government phenomenon. E-government refers to the practice of using ICT in order to deliver automated government services to the people (Kaisara & Pather, 2011). The Smart City services provided by the government are considered to be part of the e-government initiative (Chourabi et al., 2012; Kogan & Lee., 2014; Lee & Lee, 2014).

According to Lee and Lee (2014), there are several examples of cities and regions developing Smart City initiatives with the aim of gaining the benefits inherent in the Smart City services. The majority of these cities are located in Europe, America, Australia and Asia. Kogan and Lee (2014) highlight that at least 102 Smart City projects have been implemented in these cities. The majority of such projects have been initiated in European cities, followed by cities in the USA and then cities in Asia. By demonstrating its commitment to the development of e-government services (Mutula & Mostert, 2010), South Africa has also joined the movement towards Smart Cities.

South Africa is one of the leading countries in Africa in the development of e-government services. The South African government has put in place policies and projects to promote the

development of e-government services (Mutula & Mostert, 2010; Kaisara & Pather, 2011). There are several successful e-government projects in place in South Africa, including the Independent Electoral Commission (IEC) e-procurement system that facilitates open and transparent bidding for government tenders, the South African Revenue Service's (SARS) e-filing system that enables residents to conduct tax-related transactions, and the National Information System (eNaTIS), the e-government system that is used to apply for driving licences and which addresses issues relating to the licensing of motor vehicles (Mutula & Mostert, 2010). With successful e-government projects such as these, South Africa has demonstrated its leadership on the African continent countries in the development of e-government services (Maumbe et al., 2008).

2.3 Smart City Conceptualisation and Definitions

The prevailing interest in the Smart Cities phenomenon has triggered several theoretical and technology-led discussions on the concept (Lee & Lee, 2014). Chourabi et al. (2012) maintain that because the concept of Smart Cities is still new, the defining and conceptualising of the concept is still in progress. Several authors have attempted to conceptualise and define Smart Cities. However, each author views a Smart City differently depending on the discipline and the phenomenon being investigated. This section contains a review of some of the definitions of Smart Cities that have been proposed. The aim of this section is to provide an understanding of the way in which various writers view Smart Cities. This culminates in a description of the definition adopted for the purposes of in this study.

In a study conducted by Giffinger et al. (2007), a Smart City is defined as the use of modern technology in everyday urban life. According to Giffinger et al. (2007), urban technology includes the use of ICT and modern transport technologies that improve urban traffic as well as the mobility of the residents. Giffinger et al. (2007) propose six factors that may be used in order to conceptualise a Smart City. These factors include Smart Economy, Smart People, Smart Governance, Smart Mobility, Smart Environment and Smart Living. The Smart People concept is relevant to the IS discipline because the success of Smart City initiatives depend on the extent to which residents are willing to take up and use the services.

On the other hand, Hall's (2000) view of a Smart City focuses primarily on infrastructure. He argues that a Smart City is a city in which advanced integrated materials, sensors, electronics and networks, which are interconnected with computerised systems, are used to design,

construct and maintain the structures required for power, water and transportation. According to Hall (2000), a Smart City's infrastructure must be designed, implemented and maintained using computer systems that comprise databases as well as tracking and decision-making algorithms. This definition of a Smart City is situated within the context of the computer science, software engineering and civil engineering disciplines (Hall, 2000) and provides a good example of the way in which various writers define a Smart City, depending on their field of study.

Lee and Lee (2014) consider a Smart City to be a city that utilises ICT technologies in order to deliver services efficiently and effectively to the citizens. Thus, this definition is aligned to the IS discipline. However, regardless of the different viewpoints of various authors, all the definitions have a common premise, namely, that the Smart Cities concept incorporates the use of ICT in order to develop Smart Cities (Backhouse & Cohen, 2014).

2.3.1 Smart City Definition Adopted for this Study

This study is based in the IS discipline and, thus, the focus of the study is on ways in which information systems can contribute to the development of Smart Cities (Backhouse & Cohen, 2014). For the purpose of this study, these ways are restricted to the development of government e-services that address the service needs and preferences of residents. This approach is based on the argument that it is imperative for a Smart City to use information systems and applications to automate the manual service delivery process, address the information needs and preferences of residents efficiently and effectively and, ultimately, informate residents (Lee & Lee, 2014). The 'informate' concept emerged from the notion that information systems automate manual systems and also generate information that supports the users' decision-making processes and daily activities (Zuboff, 1988).

This study adopts the premise that a Smart City may be conceptualised on the basis of two dimensions, namely, informated living and digital connectedness. Informated living refers to access to information and also the generation of information that assists in the making of everyday decisions. This dimension is facilitated by digital connectivity and access to automated information and services. The use of informated living services depends on the residents' access to both the internet and automated services. This can be referred to as digitally connected living (Backhouse & Cohen, 2014). Digitally connected living is defined as the extent to which residents have access to the applications, hardware devices, network

infrastructure, the necessary e-skills and all the resources required to access and use the information services provided (Backhouse & Cohen, 2014).

For the purpose of this study, the following factors (illustrated in Table 1) are identified as those areas that may be of relevance to both informated living and digitally connected living.

Table 1: Elements of Informated Living and Digital Connected Living

Elements of informated living	Elements of digitally connected living
Finding and using accommodation and the necessary utilities; ensuring health and safety; finding and taking opportunities for leisure, entertainment and cultural pursuits, finding your way around the city and using information for studies) (Backhouse & Cohen, 2014)	Access to the internet; access to free Wi-Fi access to the e-services provided; owning a handheld communication device with internet connectivity and computer literacy (software, hardware, connection)) (Backhouse & Cohen, 2014)

2.4 Popular Models and Theories in the E-government Field

This section discusses the characteristics of some of the models and theories that have been used in the e-government field. The section also explains the reasons why some theories were not used in this study. The majority of studies on e-government are based on theories and models that have evolved in the developed countries. The majority of these studies were conducted using a positivist research paradigm and employed quantitative research methods and, thus, the theories used may not be suitable for use in a qualitative study. In addition, because the models are not specific to the e-government context, they do not provide a holistic explanation of the use and non-use of e-government services. Finally, a table outlines some of the motivational factors discussed for not using certain theories and models for the purposes of this study. Thus, Table 2 presents an explanation for each model, the variables in each model and the reasons why each model was not used in this study.

Quantitative user-centred models in Information Systems, for example the Technology Acceptance Model (TAM), Diffusion of Innovation Theory (DOI) and Unified Theory of Acceptance and Use of Technology (UTAUT) model have been used in research on government e-service use and are included in the following discussion. In most studies these models were combined with variables from the Service Quality model and the e-commerce trust models and, thus, these models are also included in the discussion.

The TAM is one of the models that have been introduced into the e-government field. TAM is an attitude-based model that can be used to predict the use of e-government services (Carter & Belanger, 2005; Carter & Weerakkody, 2008). TAM was proposed by Davis (1989) with the aim of developing an instrument that would predict the adoption of a new technology. The Theory of Reasoned Action (TRA) proposed by Ajzen and Fishbein (1972) was used as a theoretical grounding for the development of TAM. According to TRA, beliefs influence intentions and intentions influence action (Ajzen & Fishbein, 1972). TAM was based on the premise that the acceptance and use of a new technology may be explained by the users' internal beliefs, attitude and intention as they relate to adopting and using the technology (Davis, 1989).

The TAM variables include perceived usefulness (PU), which is defined as the degree to which a person believes that using a particular system will enhance his or her job performance (Davis, 1989) and perceived ease-of-use (PEOU), which is defined as the extent to which a person believes that using a particular system is both easy and simple (Davis, 1989). It is clear from these definitions that the variables assume that users will have interacted with the underlying technology and that they are capable of assessing both the perceived usefulness and the perceived ease of use. However, these assumption would not be appropriate in this study. For example, the assumption that all the residents have access to the underlying technology may result in some of the contextual concepts specific to an e-government context being overlooked. In addition, the variables do not fully represent an e-government study. They assess the residents' perceptions only, with the aim of predicting the use of a technology, and do not provide an explanation of the use of the technology. Thus, in the light of these factors, TAM was considered insufficient for theoretically grounding the current study.

The UTAUT model was proposed by Venkatesh and Davis (2000) as a modification to TAM. Eight behavioural models were used as the theoretical grounding for the development of UTAUT. These models include the Theory of Reasoned Action (TRA), TAM, the motivational model, the Theory of Planned Behaviour (TPB), a model combining TAM and TPB, the model of PC utilisation, DOI, and Social Cognitive Theory (SCT) (Venkatesh & Davis, 2000).

The UTAUT holds that there are four key variables that may be used to predict the users' intention to adopt a new technology (Venkatesh & Davis, 2000). These variables include performance expectancy, effort expectancy, social influence and facilitating conditions (Venkatesh & Davis, 2000). Some studies have found that the UTAUT variables of effort expectancy, performance expectancy and social influence may determine the users' intention to adopt and use e-government services (Awuah, 2012; Carter et al., 2011; Carter & Weerakkody, 2008; Taiwo et al., 2012). However, testing UTAUT in the context of this study only may result in some of the unique contextual practicalities of the current context being overlooked, as the variables represented in UTAUT do not specifically address an e-government context. In addition, the variables attempt to predict behaviour and not to provide an explanation for behaviour. UTAUT is also a quantitative model (Venkatesh & Davis, 2000) and, thus, it does not address issues that are specific to a qualitative interpretive study. It was for these reasons that UTAUT was not used to ground this study.

Rogers's (1995) DOI is also an attitude-based theory that has been used in the e-government field (Carter & Bélanger, 2005; Van Dijk, Peters & Ebbers, 2008). DOI was developed in order to describe how an innovation diffuses through a social system (Rogers, 1995). Rogers (1995) defines diffusion as a process by which an innovation is communicated through certain channels between the members of a social system. An innovation refers to an idea that is perceived as new (Rogers, 1995). According to Rogers (1995), the rate of innovation diffusion is affected by five variables, namely, relative advantage, complexity, compatibility, trialability and observability. Rogers (1995) defines each variable as follows. Relative advantage refers to the degree to which a new innovation is perceived to offer greater benefits than the previous innovation, while complexity refers to the extent to which an innovation is seen to be easy both to use and to understand. Compatibility refers to the extent to which an innovation is compatible with the existing beliefs, values, cultures and experiences of the users, while trialability refers to the degree to which an innovation may be experimented with before use. Finally, observability refers to the visibility of the results obtained from the use of the innovation.

However, the main problem is that the variables in DOI are not specific to an e-government context. In addition, like TAM, the DOI is based on the assumption that everyone involved engages with the technology and thus access, as an important variable in the e-government field, is not represented in the model. Finally, as a positivist model, the model predicts the

adoption of a new technology and does not aim to provide an in-depth explanation of the use and non-use of the technology (Rogers, 1995). This study sought to explain the reasons why residents either use or do not use the Smart City services provided and thus testing this model would not be sufficient for the purposes of this study.

The e-commerce trust model has also been used in research into the use of e-government services. The trust model was originally proposed in the field of e-commerce and includes the following four high-level variables (McKnight, Choudhury & Kacmar, 2002): disposition to trust, institution-based trust, trusting beliefs and trusting intentions (Mcknight et al., 2002). However, these variables are specific to a business context and not to an e-government context. Trust may be defined as the perception of confidence in the reliability and integrity of the electronic marketers (Lean, Zailani, Ramayah & Fernando, 2009; McKnight et al., 2002). The proposed trust models focus on the users' initial trust in the web vendor delivering the e-services (McKnight et al., 2002).

Despite the fact that the trust model has been used successfully in past studies (e.g. Horst, Kuttschreuter & Gutteling, 2007), it was deemed inappropriate for the purposes of this study. The main reason for this was that the trust model was originally proposed in the field of e-commerce and it addresses trust in a business context and not trust as it applies in e-government (Mcknight et al., 2002). Wang (2014) argues that relying only on models that have been developed for business presents an obstacle to the formulation of a holistic explanation of the use of the e-government phenomenon. E-commerce portals are unlikely to invoke similar trust concerns to e-government services (Kaisara & Pather, 2011). The aim of this study is to ascertain how the trust concept applies in an e-government context and also how it influences the decisions of the residents either to use or not to use the Smart City services. Thus, despite the fact that it may be possible to identify some existing trust concepts in the current study, the aim of this study is to discover the trust concepts that are applicable in the e-government context.

Some studies have investigated the intentions of citizens to use e-government services using the Service Quality (SERVQUAL) theory proposed by Parasuraman, Zeithaml and Berry (1988). The five dimensional format of the SERVQUAL model enables service delivery organisations to measure their level of service quality along each dimension (Parasuraman et al., 1988). SERVQUAL was originally measured on ten aspects of service quality, namely: reliability, responsiveness, competence, access, courtesy, communication, credibility,

security, understanding customers and tangibles (Parasuraman et al., 1988). Parasuraman et al. (1988) later refined the model, reducing it to five useful dimensions, namely, reliability, responsiveness, assurance, empathy and tangibles. However, these variables were developed for a business context and are not specific to e-government, as SERVQUAL addresses the quality of service in a business context and not in an e-government context.

Wang (2014) identified the limitations of past models and theories and stated that in order to explain the use and non-use of e-government services, an interpretive approach is required. An interpretive approach would facilitate the discovery of new theoretical concepts that would explain the e-government services phenomenon in a specific context (Wang, 2014). Wang (2014) adopted this approach and developed an interpretive model that explains the use and non-use of e-government services in China. Owing to its explanatory power, the model developed by Wang (2014) provides rich contextual concepts that explain the use and non-use of e-government services. However, it would not be sufficient to only test the model in an African context. Maumbe et al (2008) posit that testing models directly based on practical experiences garnered from other countries in a South African context would not be feasible. It might be helpful to adopt the model for the purposes of this study but the researcher would have to be open to identifying new theoretical elements that are significant in an e-government context in a developing country.

Table 2: Motivational Factors for not Using the Models

Model	**Description of the model**	**Variables in the model**	**Why the model was not deemed suitable for the purposes of this study**
TAM	The Technology Acceptance Model (TAM) is an attitude-based model that is aimed at predicting the adoption of a new technology.	Perceived usefulness (PU) and perceived ease-of-use (PEOU)	The model is not specific to the e-government field There is an assumption that all the users have access to the new technology The model is a quantitative model and does not have the ability to explain the phenomenon in question The variables in TAM are not representative of an e-government context

Model	Description of the model	Variables in the model	Why the model was not deemed suitable for the purposes of this study
UTAUT	UTAUT is an extension of TAM	Performance, expectancy, effort expectancy, social influence and facilitating conditions	Similar to TAM, The model is not specific to the e-government field There is an assumption that all the users have access to the new technology The model is a quantitative model and does not have the ability to explain the phenomenon in question The variables are not representative of an e-government context
Rogers' (1995) Diffusion of Innovation Theory (DOI)	DOI is an attitude based model that describes the way in which an innovation diffuses through a social system	Relative advantage, complexity, compatibility, trialability and observability.	The model is based on the assumption that all the users have access to the technology The model is a quantitative model and does not have the ability to explain the phenomenon in question although it does predict behaviour The model is not specific to the e-government field The variables in the model do not represent an e-government context
The e-commerce trust model	The trust model was originally proposed in the field of e-commerce and focuses on the users' initial trust in the web vendor	Disposition to trust, institution based trust trusting beliefs and trusting	The trust model was originally proposed in the field of e-commerce and, thus, it addresses trust in a business context but not

Model	Description of the model	Variables in the model	Why the model was not deemed suitable for the purposes of this study
	delivering the e-services	intentions	trust in an e-government E-commerce portals are unlikely to invoke similar trust concerns as compared to e-government services These trust variables were developed for a business context and are not specific to e-government
SERVQUAL	The SERVQUAL model enables service delivery organisations to measure their level of service quality	Reliability, responsiveness, assurance, empathy and tangibles	SERVQUAL addresses service quality in a business context, but not in the e-government field The SERVQUAL variables were developed for a business context and are not specific to e-government

2.5 Studies on the Use of E-government Services

The purpose of this section is to examine the way various schools of thoughts have investigated research questions similar to the research question posed in this study. Both qualitative and quantitative studies are included in the discussion.

The literature reveals that the user-centred models and theories such as TAM, DOI, trust models and UTAUT do not produce similar results in every context. The reasons for this include the fact that each context is different and also that it is not possible to generalise these models to every context. For example, four studies conducted by different researchers, namely, Carter and Bélanger (2005), Lean et al. (2009), Lopez-Sisniega (2009) and Shajari and Ismail (2013) all adopted variables from TAM, DOI, and trust theory to develop conceptual frameworks for e-government service adoption and use. Although these studies adopted similar theories in order to investigate the factors that influence the use of e-government services, some of the factors identified in the studies differed. Carter and

Belanger (2005) found that the following variables had a major influence on the citizens' decision to use e-government services, namely, perceived ease of use, compatibility and trustworthiness, while the findings of the study conducted by Lopez-Sisniega (2009) showed that trust in the internet, trust in the government, perceptions of convenience, perceptions of compatibility, internet access, perceptions of ease of use and perceptions of relative advantage all influence the citizens' decision to use e-government services. In their study, Shajari and Ismail (2013) found that trust, perceived usefulness, perceived ease of use, compatibility and social influences all influence the citizens' intention to use e-government services. The results of the study by Lean et al. (2009) revealed that perceived usefulness, perceived relative advantage and perceived image have an influence on residents' use of e-government services. The contextual differences may provide an acceptable explanation of the reason why the results of the studies differed. The models proposed in each study were empirically tested in different countries and, because different countries have different contextual factors, one model may not yield the same results in every context.

Studies have also adopted a combination of TAM, DOI, and UTAUT in order to develop and propose a conceptual model that determines the willingness on the part of citizens to use e-government services (Alateyah, Crowder & Wills, 2013; Carter & Weerakkody, 2008; Phang, Sutanto & Kankanhalli, 2006). However, despite the fact that the studies adopted similar theories, they identified some different influential factors. For instance, Alateyah et al. (2013) found technical infrastructure, computer and information literacy, lack of awareness, culture, quality of service and web design to be the main influential factors, while a study conducted by Carter and Weerakkody (2008) indicated that relative advantage and trust have a significant influence on citizens' decisions to use e-government services. On the other hand, Phang et al., (2006) found that perceived usefulness, perceived ease of use and internet safety influence citizens' decision to use e-government services. This also highlights that not all the variables are significant in every context. There is, therefore, a need to understand each context and to be open to identifying specific variables that apply to the context under investigation.

Furthermore, in two studies conducted by AlAwadhi and Morris (2008) and Chan, Thong, Venkatesh, Brown, Hu and Tam (2010). UTAUT was used to develop and test a model that examines the factors that influence the use of e-government services. Both these studies revealed different results. AlAwadhi and Morris (2008) identified three major factors that influence the use of e-government services, namely, performance expectancy, effort

expectancy and peer influence, while Chan et al., (2010) found that trust in and the convenience of e-government services are the strongest determinants of the use of e-government websites. It is worth noting that the models proposed in these studies were empirically tested in different countries and that the social setting in these countries may not have been the same. This may explain why the findings were different. Another possible reason is that it is not possible for UTAUT to be generalised to different contexts. It is important to understand each context and not to assume that one model fits every situation.

Although the above-mentioned studies attempted to identify the factors that influence residents' decision to use e-government services, the question regarding the residents' knowledge of how to use the services and the computer literacy required to use such services has not been answered. Maumbe et al. (2008) argue that one of the reasons why e-government initiatives fail to be used effectively by the inhabitants of African countries is because existing e-government models do not incorporate the provision of knowledge and computer literacy programmes. In addition, it has been identified in past studies that there appears to be an assumption that all residents are computer literate. In contrast to African countries, it may be that the developed countries do not face the challenge of a shortage of computer skills and shortcomings in the residents' knowledge of how to use the e-government technology.

In South Africa, a country of diverse socio-economic groupings, not all residents possess the skills required to access and use e-government services (Kaisara & Pather, 2011). It would thus not be feasible to make the assumption that all residents possess the ability required to use the services. If e-government services are to be used in South Africa, it is important that local governments ensure that issues around computer skills development and training are incorporated into the e-government initiatives and that they are addressed (Mutula & Mostert, 2010). It is therefore essential that e-government studies investigate the concepts surrounding computer literacy and e-skills.

It is evident from a review of past research that the use of e-government is an area that may benefit from studies that employ an interpretive paradigm. The majority of the studies in the e-government field that were reviewed were conducted using a positivist paradigm. For example, four studies conducted by Alateyah et al. (2013), Carter and Weerakkody (2008), Horst et al. (2007) and Phang et al. (2006) adopted variables from existing theories and models in order to develop and test models that identified the factors that influence the use of

e-government services. All the studies aimed to predict and generalise behaviour – a common practice for positivist researchers (Klein & Myers, 1999). However, as a result of this approach, the studies did not provide an in-depth explanation of the residents' use of e-government services (Wang, 2014).

Moreover, the use of a deductive paradigm and a model-testing approach also did not allow the studies to provide a holistic explanation of the use of e-government (Wang, 2014). For example, Phang et al.'s (2006) study found that the two TAM variables, namely, perceived usefulness and perceived ease of use, are major factors that influence the use of e-government services. However, the study did not offer an interpretation of how these variables influence use, in which context, and the type of residents involved. The main reason for this is that interpreting and providing in-depth explanation of the phenomenon under investigation is not a requirement for positivist researchers (Klein & Myers, 1999). Thus, more studies that seek to explain the use of e-government services through the residents' interpretations of, and the meanings they assign to, the phenomenon are required.

In addition, because of the model-testing approach adopted, the majority of the studies reviewed did not contribute new e-government theoretical constructs that would provide a more insightful explanation of the use of e-government services. In fact, Wang (2014) argues that the testing of models and theories focused originally on business had prevented the studies in question from paying close attention to the contextual factors specific to the e-government field. Shajari and Ismail (2011) and Horst et al. (2007) tested variables from the TAM and trust models to identify whether these variables influenced the use of e-government services. The studies found that the two TAM variables, namely, perceived usefulness, and perceived ease of use, explain the users' intention to use e-government services. However, the studies did not reveal any contextual factors that apply specifically to the e-government field. It is important that studies that seek to explain residents' use of e-government services are both context specific and sensitive to the unique experiences of the residents (Maumbe et al., 2008).

Nevertheless, some of the variables that emerged from past studies may perhaps be relevant to the current study despite the argument that the testing of the variables represented in the models without an openness to identifying new theoretical concepts is not sufficient to provide a deeper explanation of the phenomenon in question. In various studies conducted by Gilbert, Balestrini and Littleboy (2004) and Lai and Pires (2009), TAM was combined

with some constructs from SERVQUAL in order to develop an e-government adoption model. In the study conducted by Gilbert et al. (2004), financial security and the cost of using e-government services were identified as two of the major influential factors. These factors may be relevant in a South African context. Maumbe et al. (2008) argue that, because of the huge gap between the wealthy and the poor in South Africa, it is highly probable that financial issues may influence the use of e-government services. The results of a study conducted by Lai and Pires (2009) revealed three dimensions that influence citizens' use of e-government services, namely, information quality, system quality and social influence. These factors may be relevant but they are not deemed to be sufficient to explain the use of e-government services in South African cities. In addition to identifying whether the previously discovered variables emerge in the current study, there is also a need to uncover other concepts that have not been addressed in previous studies.

In order to provide an in-depth explanation of the phenomenon of e-government, it might be helpful to use qualitative methods. The results of a systematic literature review conducted by Turner, Kitchenham, Brereton, Charters and Budgen (2010) show that the majority of researchers have used quantitative methods to study the use of e-government services. This indicates a methodological gap. Etim (2010) argues that the use of qualitative methods may help in a further examination of the results of quantitative methods and also to uncover additional factors. Etim (2010) found that socio-economic descriptions are significant in the context under investigation in his study and, in addition to surveys, focused group interviews were used to further examine the results of the survey. The reason for this was that some of the critical factors, such as socio-economic factors, were not present in the models that Etim (2010) had tested in the surveys conducted. This argument further supports the claim that, when investigating the use of e-government, it is important to be open to identifying new concepts that are not represented in the existing models and theories. In addition, this approach may be facilitated by the use of qualitative methods (Wang, 2014).

There are very few, if any, studies that aim to explain the use of government Wi-Fi services and government websites in South Africa. The majority of the studies on e-government use have been conducted in developed countries and very few in African countries (Maumbe et al., 2008). For example, five independent quantitative studies conducted by Bélanger and Carter (2008), Chen, Jubilado, Capistrano and Yen (2015), Teo, Srivastava and Jiang (2008), Welch, Hinnant and Moo (2005), and Belanche, Casaló, Flavián and Schepers (2014) adopted

some of the trust theory constructs in order to propose and test a model of trust in the use of e-government services. Bélanger and Carter (2008) identified that fear of identity theft and the loss of privacy constitute the major factors that influence citizens' decisions to use the e-government service, while Chen et al. (2015) found that trust in the e-government technology, trust in the government and prior experience with the e-government technology have a direct influence on the decision of citizens to use e-government services. On the other hand, Teo et al. (2008) found that trust in the e-government technology does not influence the users' decision to use e-government services and that only trust in the government affects the users' decision to use such services. Welch et al. (2005) found that trust and the users' satisfaction with the e-government influence citizens' decisions to use e-government services, while Belanche et al. (2014) found that all dimensions of trust influence citizens' decisions to use e-government services. Although all these trust variables may be relevant in the current context, none of the studies mentioned were conducted in Africa. The appropriateness of testing experiences from the developed countries in an African context is an issue of concern (Maumbe et al., 2008). Nevertheless, it would be helpful to identify whether these variables emerge in a South African context without testing the models directly.

The majority of the studies on the use of e-government reviewed focused only on the use of government e-services without taking into account the issue of access to these services. For example, two independent studies conducted by Hung et al. (2006) and Ozkan and Kanat (2011) built on TAM, TPB and trust theory to develop a conceptual framework that identifies factors that influence citizens' use of e-government services. The findings of the study conducted by Hung et al. (2006) reveal that perceived usefulness, perceived ease of use, perceived risk, perceived trust, compatibility, and self-efficacy are the major factors that influence citizens' choice to use e-government services. However, the concept of the use of the internet and access to the services did not play a role in the study. On the other hand, the results of the study conducted by Ozkan and Kanat (2011) indicate that trust, perceived behavioural control and users' attitude successfully explain users' intention to use e-government services. Again, there appears to be an assumption that access to the required resources is not a challenge. However, in South Africa, the privilege of accessing the internet is not yet available to all (Kaisara & Pather, 2011) and it would, thus, not be feasible to work on the assumption that all residents would be able to access the internet when they needed to use government e-services. In fact, e-government studies conducted in a South African context report that the majority of people in South Africa live in townships where it is not

easy to access internet services (Maumbe et al., 2008; Meyer, 2009; Mutula & Mostert, 2010). It is therefore important to address the concept of access to the internet and the devices required to connect to the internet when investigating the use of e-government services in South Africa.

Although the studies reviewed identified the factors that influence the use of e-government services, the non-use of the services has not been sufficiently addressed. Past studies have not provided an explanation for the low use of e-government services (Wang, 2014). For example, Pham (2012) proposed a conceptual framework for the use of e-government services. The proposed framework was anchored in DOI and the Quality Management Theory. Accessibility, interactivity, confidentiality and civic engagement were identified as the major factors that influence citizens' decisions to use e-government services. However, the study did not address the non-use of the services. Similarly, two studies by Alawneh, Al-Refai and Batiha (2013) and Tan, Benbasat and Cenfetelli (2008) investigated the use of e-government services but without attempting to address the non-use of these services. Tan et al. (2008) found that trust and the quality of e-government websites constitute major factors that influence the adoption of e-government websites, while Alawneh et al. (2013) found that security and privacy, trust, accessibility and awareness affect satisfaction and influence citizens' decisions to use e-government services. However, the studies do not provide a clear explanation of why some residents do not use the services. Wang (2014) posits that past studies have not addressed the low use of e-government services because these studies have tended to focus on e-government as a whole and have not narrowed their attention to the use and non-use of e-government services. However, the issue of the non-use of government e-services is significant and thus it is important that studies that aim to explain the use of e-government services in South African cities also incorporate the issue of non-use.

It would appear that studies that have not merely tested models, but which have brought to light new contextual factors that address the specific context under investigation, have provided an adequate explanation of the use of e-government in the context under investigation. For example, Naugle (2011) combined TAM and DOI in order to identify the variables that influence the use of e-government services. In addition to testing the variables characteristic of these models, the study investigated the influence of age, income, race, gender and ethnicity variables on the use of e-government services. The findings indicate that citizens' income is highly related to the use of e-government services, although this variable

was not present in the adapted models. This implies that only testing the models may mean that other reasons underpinning the use and non-use of e-government services are ignored. Russell (2013) also moved beyond model testing and conducted a qualitative study to identify and analyse the reasons behind citizens' decisions to use e-government services.

Despite the fact that TAM was used as a theoretical framing for this investigation, the results indicate that perceived barriers to e-government services, benefits from e-government services, trust and privacy factors are the main factors influencing the decisions of citizens to use e-government services. However, none of these factors are represented in TAM. Thus, these studies prove that directly testing models and theories without being open to identifying new concepts is not sufficient for understanding the use and non-use of e-government services.

Table 3 presents a summary of some of the factors identified in past studies. The table depicts the theories and models used in each study and the research methods adopted. The studies cited in the table are grouped in such a way that studies that used similar theories and models are grouped together.

Table 3: Factors that Influence Residents' Use of E-government Services

Author	Article title	Theories, models used	Methodology	Factors that influence use
Carter and Bélanger (2005)	The utilization of e-government services: citizen trust, innovation and acceptance factors	TAM, DOI and trust theory	Quantitative	Perceived ease of use, compatibility, and trustworthiness
Lean et al. (2009)	Factors influencing intention to use e-government services among citizens in Malaysia	TAM, DOI and trust theory	Quantitative	Perceived usefulness, perceived relative advantage and perceived image
Lopez-Sisniega (2009)	Barriers to electronic government use as perceived by citizens at the municipal level in Mexico	TAM, DOI and trust theory	Quantitative	Trust in the internet, trust in the government, perceptions of convenience, perceptions of compatibility, internet access, perceptions of ease of use and perceptions of relative

Author	Article title	Theories, models used	Methodology	Factors that influence use
				advantage
Shajari and Ismail (2013)	Testing an adoption model for e-government services using structure equation modeling	TAM, DOI and trust theory	Quantitative	Trust, perceived usefulness, perceived ease of use, compatibility and social influences
Shajari and Ismail (2011)	Key factors influencing the adoption of e-government in Iran	TAM, DOI and trust theory	Qualitative interviews	Perceived usefulness, and perceived ease of use
Horst et al. (2007)	Perceived usefulness, personal experiences, risk perception and trust as determinants of adoption of e-government services in the Netherlands	Trust theory and TAM	Quantitative	Perceived usefulness of the e-government services
Naugle (2011)	Assessing adoption theory in relation to the electronic application for government sponsored health insurance	TAM and DOI	Quantitative	Citizens' income
Russell (2013)	Electronic government barriers and benefits as perceived by citizens who use public services	TAM	Qualitative interviews	Perceived barriers to the e-government services, benefits from the e-government services, trust and privacy
Alateyah et al. (2013)	Factors influencing citizen intention to adopt e-government in Saudi Arabia	TAM, DOI and UTAUT	Quantitative	Technical infrastructure, computer and information literacy, lack of awareness, culture, quality of service and web design
Carter and	E-government adoption: a	TAM,	Quantitative	Relative advantage

Author	Article title	Theories, models used	Methodology	Factors that influence use
Weerakkody (2008)	cultural comparison	UTAUT and DOI		and trust
Phang et al. (2006)	Senior citizens' acceptance of information systems: a study in the context of e-government services	TAM, UTAUT and DOI	Quantitative	Perceived usefulness, perceived ease of use and internet safety
Etim (2010)	The adoption and diffusion of information and communication technology in the base of the pyramid population of sub-Saharan Africa: a study of Nigerian university students	TAM, UTAUT and DOI	Mixed method Quantitative and qualitative	Perceived ease of use, cost and quality of the e-government services
Wang (2014)	Explaining the low utilisation of government websites: Using grounded theory approach	Grounded theory approach	Qualitative	Effectiveness of government websites, value of government websites, users' needs, and alternative information sources
Gilbert et al. (2004)	Barriers and benefits in the adoption of e-government	TAM, DOI and SERQUAL	Quantitative	trust, financial security, information quality, time, and the cost of using e-government services
Lai and Pires (2009)	Testing of a model evaluating e-government portal acceptance and satisfaction	TAM	Quantitative	Information quality, system quality, and social influence
Kafaji (2013)	Evaluating the role of service quality as a mediator on user satisfaction in e-government applications	SERVQUAL	Quantitative	Perceived value of the service and the quality of the information obtained from the service
Bélanger and Carter (2008)	Trust and risk in e-government adoption	Trust	Quantitative	Fear of identity theft and loss of privacy
Belanche et al. (2014)	Trust transfer in the continued usage of public e-services	Trust	Quantitative	Trust
Chen et al.	Factors affecting online tax	Trust	Quantitative	Trust in the e-

Author	Article title	Theories, models used	Methodology	Factors that influence use
(2015)	filing: an application of the IS Success Model and trust theory			government technology, trust in the government, and prior experience with the e-government technology
Teo et al. (2008)	Trust and electronic government success: an empirical study	Trust	Quantitative	Trust in the government
Welch et al. (2005)	Linking citizens' satisfaction with e-government and trust in government	Trust	Quantitative	Trust and users' satisfaction with e-government
Hung et al. (2006)	Determinants of user acceptance of the e-government services: the case of online tax filing and payment system	TAM and trust theory	Quantitative	Perceived usefulness, perceived ease of use, perceived risk, perceived trust, compatibility, and self-efficacy
Ozkan and Kanat (2011)	E-government adoption model based on theory of planned behaviour: empirical validation	TAM and trust theory	Quantitative	Trust, perceived behavioural control, and users' attitude
AlAwadhi and Morris (2008)	The use of the UTAUT model in the adoption of e-government services in Kuwait	UTAUT	Quantitative	Performance expectancy, effort expectancy, and peer influence
Chan et al. (2010)	Modeling citizen satisfaction with mandatory adoption of an e-government technology	UTAUT	Quantitative	Trust in and convenience of the government services
Awuah (2012)	An empirical analysis of citizens' acceptance decisions of electronic-government services: a modification of the unified theory of acceptance and use of technology (UTAUT) model to include trust as a basis for investigation	UTAUT and trust theory	Quantitative	Perceived trust

Author	Article title	Theories, models used	Methodology	Factors that influence use
Taiwo et al. (2012)	User acceptance of e-government: integrating risk and trust dimensions with the UTAUT model	UTAUT and trust theory	Quantitative	Performance expectancy, peer influence, trust, and risk
Carter et al. (2011)	An investigation of the antecedents to adoption from the individual taxpayers' perspective	UTAUT and trust theory	Quantitative	Performance expectancy, social influence, computer anxiety and trust in government
Alawneh et al. (2013)	Measuring user satisfaction from e-government services: lessons from Jordan	SERVQUAL and trust theory	Quantitative	Security and privacy, trust, accessibility, and awareness
Tan et al. (2008)	Building citizen trust towards e-government services: Do high quality websites matter?	Trust and SERVQUAL	Quantitative	Trust and quality of the e-government websites
Pham (2012)	Users' perceptions of e-government services: a study of Danang, Vietnam	DOI	Quantitative	Accessibility, interactivity, confidentiality, and civic engagement
Van Dijk et al. (2008)	Explaining the acceptance and use of government internet services: a multivariate analysis of 2006 survey data in the Netherlands	DOI	Quantitative	Availability of the internet services, knowledge of these services and users' preferences in using the internet services

2.6 Summary of the Literature Review

Several studies have investigated the use of government e-services in order to identify the reasons that affect residents' use of the e-services provided. The majority of these studies were conducted using a positivist research paradigm and employing quantitative research methods. Quantitative user-centred models in Information Systems such as TAM, DOI, and UTAUT have been used in research into government e-service use. These studies identified a variety of factors that influence the use of government e-services. However, because the studies borrowed theoretical variables from existing theories and models, some of which were focused originally on business, the studies tended to overlook the contextual conditions

of e-government. Because of the model testing approach adopted, the studies did not contribute new theoretical constructs to explain the government e-service phenomenon. In addition, some of the concepts that may be significant in a developing country context, such as access to both technology and the skills required to use such technology, are not sufficiently represented in the existing studies and models.

In addition, the literature reviewed identified other research gaps. Firstly, most of the studies were conducted in a developed country context, with very few studies being conducted in Africa. The argument is thus that it may not be appropriate to test experiences from industrialised countries in an African context and, therefore, more studies that explain the use and non-use of e-government services in African cities are required. Secondly, the non-use of e-government services has not been sufficiently addressed in the studies reviewed, with the majority of the studies focusing on the use of these services but overlooking the non-use. The issue of the low use of e-government services may therefore benefit from further research.

It is evident from the review of past research that the use of government e-services is an area that could benefit from studies that use an interpretive paradigm, qualitative methods and an interpretive model developed specifically for the e-government field.

2.7 Conclusion

Chapter two presented the literature review section of this research study. Firstly, the chapter contained a background discussion on e-government and Smart Cities. This was followed by a discussion on the conceptualisation and definitions of Smart Cities currently in use. The chapter then discussed the models and theories that have been adopted to investigate the use of e-government services. This was followed by a discussion of various studies in the e-government use field, their findings and the gaps identified. A table summarising some of the factors that influence the use of e-government services was presented. The chapter culminated in a summary of the literature review. The next chapter presents the theoretical framework that was selected to ground the current study, as well as an argument for the appropriateness of the framework selected.

3 CHAPTER THREE: THEORETICAL FRAMING

3.1 Introduction to Chapter Three

Chapter three presents the theoretical framing of the study and discusses the theoretical framework that was adopted for the purposes of the study. The chapter explains the choice of this theoretical framework and justifies the selection of the framework in question. In order to do this, the chapter summarises the background literature and describes the contributions and shortcomings of past research. This is followed by the section on the theoretical underpinning of the study. This section explains the characteristics of the theory deemed appropriate for the purposes of the study and how Wang's (2014) theoretical framework meets these requirements. The chapter then contains a description of the theoretical concepts contained in Wang's (2014) framework and the relationships and contexts of these model. This section is followed by an evaluation of the quality of Wang's (2014) theoretical framework. The quality of Wang's (2014) theory was evaluated based on Weber's (2012) criteria for evaluating the strength of a theory. The evaluation outcomes accordingly revealed that Wang' (2014) framework was sufficient for the purposes of the study.

3.2 Background Literature

As discussed in chapter two, previous studies have demonstrated the applicability of existing models and theories to the e-government field. These studies identified a variety of factors that influence the use of government e-services. However, because the studies had borrowed theoretical variables from existing theories and models, some of which were originally focused on business, the studies overlooked the contextual practicality of e-government (Wang, 2014). For example, positivist models and theories such as TAM, UTAUT and DOI do not address the concept of the residents' access to the e-services provided. In addition, the trust theories address trust in a business context and not trust as it applies in government.

Current studies on the use of government e-services do not provide a holistic and thorough explanation of the use of such services (Wang, 2014). This may be the result of the fact that these studies were based on past models and theories that do not address the contextual practicalities of e-government. In addition, because of the model testing approach, the studies

did not contribute new theoretical elements to the government e-service phenomenon (Wang, 2014).

3.3 Theoretical Underpinning

Weber (2012) defines a theory as the existence of things, properties these things possess, states these things experience and the events the things undergo. Theories provide a representation of someone's perceptions of how a subset of real-world phenomena should be described (Weber, 2012). It is essential that academic studies are underpinned by good quality theories (Weber, 2012)

3.3.1 Characteristics of the theory required for this study

This research study aims to examine and explain both the use and the non-use of the government e-services developed to meet the residents' information needs and to transform Johannesburg into a Smart City. In order to illuminate and address the research question adequately, the study required an interpretive theory or theoretical framework that was not originally based in a business context. It was imperative that the theory be based in the e-government field and that it took into account phenomena at a broader societal level than just business. In addition, it was deemed necessary that the theoretical framework selected should facilitate a rich understanding of the use of government e-services.

3.3.2 Selected theoretical framework

The study seeks to study the phenomenon of the use and non-use of e-government services using a theoretical framework of government website utilisation as proposed by Wang (2014). Despite the fact that Wang's (2014) model was not constructed in the context of a developing country, it was, nevertheless, found to be superior to the models discussed in the literature review because it was developed from an interpretive perspective, it is an e-government theoretical framework and, thus, it considers the phenomenon in question at a societal level. Unlike the other models, the variables in Wang's (2014) model are specific to an e-government context. Therefore, the model was selected for the purposes of this study because it met the characteristics of the required theory as described while the other models did not possess these characteristics.

Wang (2014) employed an inductive approach in order to build a theory that identifies new theoretical elements that can be used to examine the use of e-government websites. Consistent with Weber's (2012) definition of theory, the theoretical framework of government website utilisation helped the researcher to explain the phenomenon under investigation and facilitated the understanding of the phenomenon.

Wang's (2014) study is based on the assumption that reality is subjective and, thus, that it differs from person to person. Accordingly, his assumption of human behaviour is that reality is individually constructed and that people behave differently. Wang (2014) employed a subjective approach in order to study the different behaviours of people, arguing that an objective approach may have hindered the holistic examination of the phenomenon under investigation.

The framework was based on the notion that government websites are created in order to provide information and e-services that address the residents' information and service needs. This study aimed to provide a holistic explanation of the residents' use and non-use of government e-services from an interpretive perspective. Thus the framework selected served as the basis of interpretive research which sought to explain the residents' use of the government e-services provided (Wang, 2014).

The theoretical framework provided sufficient richness to enable the researcher to explore the phenomenon under investigation in the study. Walsham (2006) affirms that, in interpretive studies, theory may be used as an initial guide to the data collection process. For the purposes of this study, the theoretical framework proposed by Wang (2014) was used as an initial guide with which to formulate the interview questions. During the data analysis process, the theoretical framework helped the researcher to make sense of the data which had been collected.

At the end of the study, the researcher reflected on the appropriateness and shortcomings of the framework selected and identified whether the framework would require modification to be applied in a different context. The results from the data analysis identified that, although the framework applied in the context of the study, it needed to be extended.

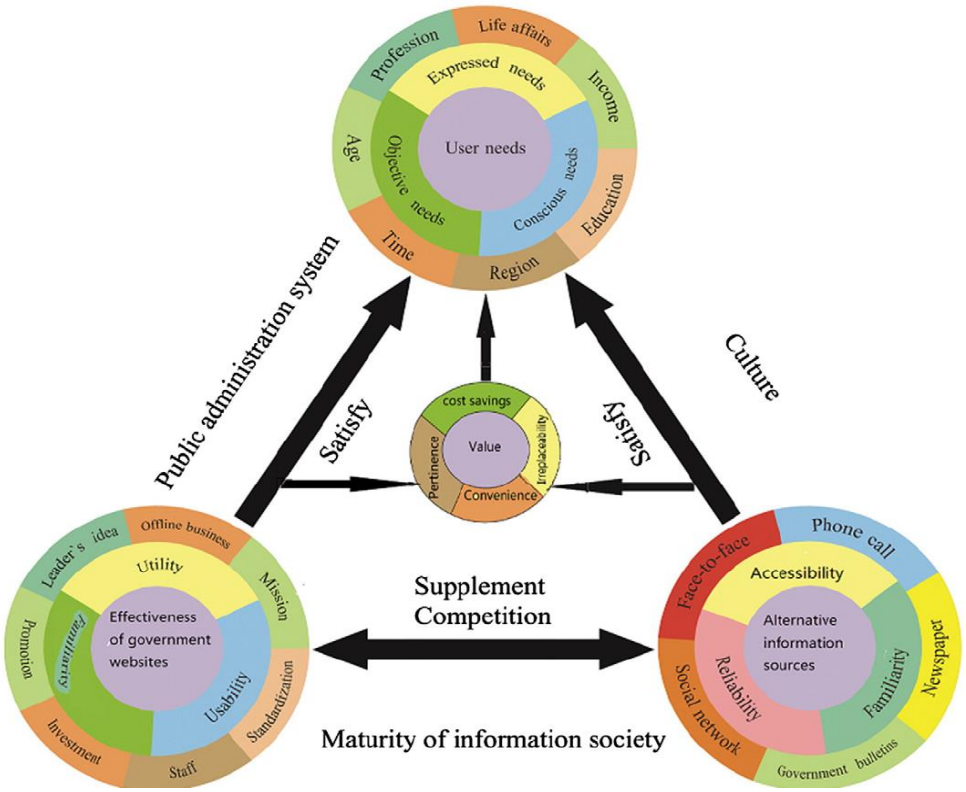

Figure 2: The Integrated Theoretical Framework of Government Website Utilisation Proposed by Wang (2014)

3.4 Theoretical Concepts of the Theory of Government Website Utilisation

This section provides a description of the concepts, associations, and states in the theoretical framework of government websites utilisation. By iterative data comparison and analysis, Wang (2014) identified four core concepts that explain the use of government websites: value of website, effectiveness of government websites, user needs, and alternative information sources. Value was identified as the essence of government websites use and a central status of the relationship network of the four core concepts (see Figure 2). Each concept is made up of sub-categories and there are dimensions for each sub-category. Provided below is a discussion of the core concepts in the framework and their sub-categories and dimensions.

3.4.1 Core concept: Value of government websites

Value is the core category that reveals the essence of the use of government websites (Wang, 2014). Wang (2014) identified four sub-categories that construct the value variable. These sub-categories are: pertinence, convenience, cost savings, and irreplaceability.

A. Pertinence

Government websites are built to provide information and e-services to the residents (Wang, 2014). The pertinence sub-category states that information and e-services provided on government websites should be related to the life, work, and interest of the intended users (Wang, 2014). Local governments and their departments must know who their intended users are and what practical needs and demands these users have (Wang, 2014).

B. Convenience

Convenience means that a government website should reduce efforts made by the residents when attempting to use the government services and it should improve their efficiency when obtaining information or transacting with government agencies (Wang, 2014). According to Wang (2014) there are several dimensions that are required for an information and service delivery website to be convenient. These dimensions are: availability, affordability, accessibility, and usability. This means that a government website should be available to the residents at an affordable cost; it should be easy to access and use (Wang, 2014).

C. Cost saving

This sub-category refers to the extent to which the use of the website saves time and money or reduces paperwork for both government and the residents (Wang, 2014).

D. Irreplaceability

Irreplaceability takes the notion that if government websites own distinctive information resources or functions that cannot be obtained from other sources, then they will attract more users (Wang, 2014).

3.4.2 Core concept: Effectiveness of government websites

This concepts state that the extent to which the website can successfully deliver government information and e-services to the residents can increase its utilisation (Wang, 2014). Wang (2014) identified that to fully achieve this goal, a website requires three properties: utility, usability, and familiarity.

A. Utility

Utility of a government website refers to its capability to satisfy the needs of the users (Wang, 2014).

B. Usability

This refers to the extent to which a website is readily available, easy to find, and easy to operate (Wang, 2014). According to Wang (2014) the following dimensions were identified as indicators of usability: readability, findability, learnability, searchability, understandability, and accessibility.

C. Familiarity

Familiarity refers to the residents' using habits of government websites and the extent to which the residents are familiar to these websites (Wang, 2014).

3.4.3 Core concept: User needs

The concept states that the users' information needs explain the use of the government websites (Wang, 2014). This core concept is made of two sub-categories: facets of user's needs and context of user's needs for government information and e-services (Wang, 2014).

A. Facets of user's needs for government websites

Users' needs for government information and services exist in three stages: expressed need, conscious need, and objective need (Wang, 2014).

B. Context of users' needs for government websites

Wang (2014) identified that users' needs for government websites are influenced significantly by their profession, life affairs, income, education level, region of stay, timing of the need, and age.

3.4.4 Core concept: Alternative information sources

This concept refers to channels other than government websites that the residents can use to obtain information and satisfy their information needs and demands (Wang, 2014). For instance, some people may believe that the use of newspapers, TV, and communication with other people sufficiently address their needs for information. In this regard, the use of alternative information sources is helpful in explaining why some people do not use the

provided e-services (Wang, 2014). Alternative information sources have three sub-categories: accessibility, familiarity, and reliability (Wang, 2014).

A. Accessibility

   People who choose to use alternative information sources may believe that these sources are more accessible (Wang, 2014).

B. Familiarity

   Many people do not like to try new technology so they prefer to use information sources with which they are familiar with (Wang, 2014).

C. Reliability

   Wang (2014) found that users may prefer alternative information sources because they believe they are more reliable than e-government services.

3.5 Relationship between the four core concepts

Relationship between effectiveness of government websites and user needs

Wang (2014) argues that for a government website to be considered effective, information and e-services provided should satisfy the needs of the residents. Residents' satisfaction with the information and e-services provided through a website is influenced by three properties: utility, usability, and familiarity of a website (Wang, 2014). Government websites should satisfy the users' expressed, objective, and conscious needs (Wang, 2014).

Relationship between alternative information sources and user needs

Similar to the relationship between effectiveness of government websites and user needs, for the users to turn to alternative information sources, these sources should effectively address users' information needs (Wang, 2014).

Relationship between effectiveness of government websites and alternative information sources

Wang (2014) identified that the number of alternative information sources determine the replaceability of the government websites. This means that if the residents have different options to choose from when fulfilling their information needs, this might explain the low use of government websites. Wang (2014) identified four kinds of relationships between

government websites and alternative information sources: overlap, complement, competition, and replacement.

Relationship between value and the three other concepts

According to Wang (2014), relationship between 'effectiveness of government websites', 'user needs' and ‘alternative information sources' explains the value of the use of government websites.

3.5.1 Context of government website utilisation

Wang (2014) found that the public administration system, culture, and level of maturity of information society form the basis of contextual factors influencing the use of government websites. For instance, public administration systems influence the mission of government websites, the ideas of officials in-charge of e-government, and the participation of citizens in the public affair (Wang, 2014). The level of maturity of an information society also emerged as a concept that explains the residents' choice between online and offline government services Wang (2014).

Figure 2 presents the relationship between all the core concepts. Value is positioned at the centre of the relationship network. The four core categories are located in the central points of each circle, their properties and dimensions are located in the second layer and their contexts are located in the third layer. Relationships between core concepts are demonstrated by arrows. The three contextual factors of the use of government websites are illustrated on the outside of the arrows.

3.6 Evaluation of Wang’s (2014) Theoretical Framework of Government Websites Utilisation using Weber’s (2012) Criteria

Weber (2012) states that the quality of a theory can be evaluated from two perspectives: parts of a theory, and a theory as a whole. The evaluation of parts of the theory should focus on the quality of the individual components that make up the theory (Weber, 2012). Weber (2012) indicates that all theories should have three parts: constructs, association between constructs, and the states the constructs cover. The idea of constructs can be mapped to the idea of concepts in an interpretive theoretical framework. In a high quality theory, the three parts are

defined precisely to clearly indicate the boundary and the domain of the theory (Weber, 2012).

The evaluation of the theory as a whole focuses on the quality of the theory as a whole rather than attributes of its parts (Weber, 2012). A criterion for evaluating a theory as a whole is consists of five concepts: importance, novelty, parsimony, level, and falsifiability (Weber, 2012). A theory should possess the above mentioned qualities for it to be considered of high quality as a whole (Weber, 2014). Importance refers to the extent to which a theory addresses interesting phenomena. From the view point of practice, importance refers to the extent to which a theory improves the efficiency and effectiveness of a certain activity in practice (Weber, 2012). According to Weber (2012), novelty refers to the extent to which the papers employing the theory under evaluation will be accepted for publication in major journals. There are several ways that can be used to determine the novelty of a theory. First, the theory's focal phenomena might not have been addressed sufficiently by prior theories. Second, a theory might be considered novel if it addresses assisting phenomena in a different way. Third, a theory might be considered novel because it makes an important change to existing theories.

Parsimonious theories use a small number of constructs/concepts and associations to predict or interpret a phenomenon efficiently and effectively (Weber, 2012). Level refers to the extent to which a theory is neither too narrow nor too broad with regard to the phenomena being covered (Weber, 2012). Weber (2012) indicates that a theory should be middle-ranged; it should not be too constrained or too general. Falsifiability states that a theory should have the ability to examine the conditions researchers believe are likely to lead to the falsifiability of the theory (Weber, 2012). However, because the theory of government website utilisation proposed by Wang (2014) was developed from an interpretive perspective, the falsifiability attribute is not applicable. Interpretive studies do not seek to falsify theory (Klein & Myers, 1999). Thus the falsifiability attribute is excluded from the evaluation of theory in the current study.

The evaluation criteria proposed by Weber (2012) were used to pinpoint the strengths of the theory of government website utilisation proposed by Wang (2014). This evaluation demonstrates the strength and relevance of the theory as a theoretical framing for the current study. Table 4 presents a summary evaluation of the theory of government website utilisation.

Table 4: Summary evaluation of Wang's (2014) theoretical framework of government websites utilisation

Criteria	**Summary Evaluation**
Parts	
Constructs	The core constructs and their dimensions are clearly defined. The core constructs are: value, effectiveness of government websites, user needs, and alternative information sources. The boundaries of the theory are clearly articulated. The theory covers the use of government websites that deliver information and electronic services to the residents.
Association	In Wang's (2014) paper, associations between the core constructs are clearly articulated. Arguments used to support associations are clear and rigorous
States	A discussion on the states that are inside the boundary of the theory is provided in the paper
Whole	
Importance	The paper provides clear reasons why the theoretical framework is important for practice. The theory addresses the e-government phenomenon which is an emerging field that has gained interest from both academics and practitioners.
Novelty	The phenomenon addressed by the theoretical framework had not been sufficiently addressed by prior studies. Because prior studies borrowed theoretical variables from existing theories and models, some of which were originally focused on business, the studies overlooked the contextual practicality of e-government (Wang, 2014). The theory covers gaps in the e-government field
Parsimony	The theoretical framework is parsimonious because it uses four core concepts and fewer associations to provide a powerful explanation of the use of government websites. Although each core concept is further broken down into dimensions and properties, this richness does not over-complicate the model.
Level	The theoretical framework is a middle-range theory, thus it is framed at an appropriate level

3.7 Conclusion of Chapter Three

The theoretical framing chapter of the study presented a theory that has been adopted to ground the current study and a justification for its selection. A summary of background

literature describing the contributions and shortcomings of past research was provided first. This was followed by the theoretical underpinning section; this section explained the characteristics of the required theory and how Wang's (2014) theoretical framework meets these requirements. Subsequently, the chapter provided a description of the theoretical concepts in Wang's (2014) framework and the relationships and contexts. This section was followed by an evaluation of the quality of Wang's (2014) theoretical framework using Weber's (2012) criteria of evaluating the strength of a theory. Lastly, a conclusion ends the chapter. The next chapter will discuss the research methods and paradigm used in the study.

4 CHAPTER FOUR: RESEARCH METHODS

4.1 Introduction to Chapter Four

The methodology section of this research document first presents a discussion of different research paradigms in Information Systems, this leads to the selected paradigm and a justification of its selection. The study is based on the interpretive paradigm. Next the chapter argues for the selected research approach which is the qualitative approach. From there an illustration of how sampling was done is provided. This is followed by an argument for the selected sample size. The data collection procedure is provided after the sample size section, and this section consists of the research instrument development. Subsequently, the chapter provides the data management strategy used in the research. This part is followed by an argument about rigor in qualitative research. The chapter then presents a discussion of how the verification and validity mechanisms are woven into the research methods to ensure that the current study is rigorous. Then information related to the ethical procedures is presented. A conclusion ends the chapter.

4.2 Research Paradigm

A research paradigm refers to a belief system or world view that is grounded in a set of assumptions (Chua, 1986). These assumptions guide the investigation and influence how the research problem is addressed (Chua, 1986). Even though Chua's (1986) original ideas were formulated and are based on the accounting discipline, they have gained acceptance from researchers in the IS discipline (Orlikowski & Baroudi, 1991). Typically an IS academic research study is associated with a specific philosophical perspective or paradigm (Orlikowski & Baroudi, 1991). There are three accepted research paradigms in the IS discipline and these paradigms are: positivism, interpretivism, and critical paradigm (Klein & Myers, 1999; Orlikowski & Baroudi, 1991). These paradigms have been borrowed from Chua’s (1986) work.

Positivist researchers aim to discover an objective social reality that exists (Klein & Myers, 1999; Orlikowski & Baroudi, 1991). In a positivist study, relationships within phenomena are presumed to be known and fixed (Orlikowski & Baroudi, 1991). These relationships are investigated by use of research instruments. The main characteristic of positivism is that the world is ordered and can be studied objectively (Klein & Myers, 1999; Orlikowski & Baroudi, 1991).

Interpretive research examines and interprets phenomena with the aim of understanding the deeper structure of phenomena (Klein & Myers, 1999; Orlikowski & Baroudi, 1991). Interpretivist researchers are interested in dealing with people, capturing their social beliefs, and studying the complexity of human sense making in a particular situation (Klein & Myers, 1999; Orlikowski & Baroudi, 1991). In this type of research, the knowledge of reality is obtained through social constructions such as language, consciousness, and shared meanings (Orlikowski & Baroudi, 1991).

A research study is classified as critical if the main aim of the study is to critique the existing social view and transform the existing conditions (Chua, 1986). In this type of study, the restrictive conditions of the status quo are addressed (Chua, 1986). Similar to the interpretive paradigm the critical paradigm contradicts the positivist paradigm and portrays the assumption that social reality is shaped by people (Klein & Myers, 1999; Orlikowski & Baroudi, 1991). Even though both interpretive and critical paradigms have similar methodological assumptions, there are some aspects that separate the two paradigms (Chua, 1986). First, the critical researcher assumes that people can consciously act to change their social and economic conditions (Chua, 1986). Second, researchers adopting the critical paradigm assume that human ability is constrained by certain aspects of social, cultural, political dominations, natural laws, and resource limitations (Chua, 1986; Orlikowski & Baroudi, 1991). Third, one unique feature of the critical paradigm is the attention the researcher pays to evaluation (Orlikowski & Baroudi, 1991). Additionally, unlike interpretive researchers, critical researchers use self-consciousness in their studies and they address the main conflicts in power relationships (Chua, 1986).

The three paradigms of studying the world can be differentiated according to three sets of beliefs and assumptions: belief about knowledge, belief about physical and social reality, and relationship between theory and practice (Chua, 1986).

The first set of beliefs, classified as belief about knowledge pertains to the notion of knowledge and these beliefs can be subdivided into two set of assumptions: epistemological assumptions and methodological assumptions (Chua, 1986). Epistemological assumptions decide what is to be considered as acceptable truth (Chua, 1986). While methodological assumptions indicate the research methods that are considered appropriate for the collection of what is considered valid evidence (Chua, 1986). In this regard, what is considered to be an appropriate research method will depend on how truth is defined (Chua, 1986). Thus the two sub-divisions of assumptions are related.

The second set of beliefs consists of assumptions about the object of study, and the physical and social reality (Chua, 1986). Three sub-divisions of assumptions exist in this set of beliefs: ontological assumptions, human intention and rationality assumptions, and assumptions about societal order or conflict (Chua, 1986). Ontology is concerned with the nature of reality (Chua, 1986; Orlikowski & Baroudi, 1991). There are two aspects of ontology in research studies: objectivism and subjectivism (Chua, 1986; Orlikowski & Baroudi, 1991). Objectivism portrays the idea that social entities exist in reality and that they are external to the social actors (Chua, 1986; Orlikowski & Baroudi, 1991).While subjectivism takes the notion that social phenomena are created from perceptions, actions, and interactions of social actors (Chua, 1986; Orlikowski & Baroudi, 1991).

The third set of beliefs that can be used to differentiate the three paradigms is constructed by the relationship between theory and practice (Chua, 1986). This refers to the relationship between knowledge and the empirical world (Chua, 1986). The purpose of knowledge in the world of practice is addressed by these set of beliefs (Chua, 1986).

With reference to Chua's (1986) work, the underlying philosophical assumptions of positivism, interpretivism, and critical paradigms are outlined and contrasted in Table 5.

Table 5: Paradigm comparison table adapted from Chua (1986)

Assumptions about:	**Positivist**	**Interpretive**	**Critical**
A:**Beliefs about Knowledge**			
Epistemology	Theory is separate from observation, observation may be used to verify or falsify theory.	Sought scientific explanation of human intention, knowledge of the world is intentionally constituted through a person's lived experiences	Criteria for judging theories are temporal and context-bound
Methodology	Favours quantitative methods of data collection and analysis which allow for generalisation.	Encourages ethnographic work, case studies, and participant observation	Commonly uses historical, ethnographic research, and case studies
B: Beliefs about physical and social reality			
Ontology	Empirical reality is objective and external to the subject. Human beings are not seen as sense makers of social reality but are characterised as passive objects	Human beings are considered to be sense makers of social reality. Social reality is emergent, subjectivity is created and objectified through human interactions	Human beings have inner potentialities that are prevented from full emergence by restrictive mechanisms.
Human intention and Rationality	Single goal of utility-maximisation assumed for both individuals and firms. Assumes a means-ends rationality	All actions have meaning and intentions that are retrospectively endowed and that are grounded in social and historical practices	Human intention, rationality, and agency are accepted, but are critically analysed in false consciousness and ideology
Societal order/conflict	Societies and organisations are essentially stable. Conflict may be managed through the design of appropriate information systems control	Social order assumed. Conflict mediated through common schemes of social meaning	Fundamental conflict is widespread in society. Conflict arises because of injustice and ideology in the social, economic, and political domains. These items obscure the creative dimension in people
C: Relationship between theory and practice			
	Information Systems specify means, not ends. Acceptance of extant institutional structures	Theory seeks to explain action and to understand how social order is produced and reproduced	Theory has a critical imperative: the identification and removal of domination and ideological practices

4.2.1 Paradigm choice

The current study has been addressed from an interpretivist philosophical perspective. The choice of the interpretive paradigm was motivated by several aspects. To begin with, the decision on the paradigm selection was influenced by the nature of the research problem, research question, and the research context. To address the identified research problem in the current study, the research question is concerned with how we can explain the use and non-use of Smart City services, to try and understand why residents use or don't use the provided Smart City services. This question may have multiple explanations and thus does not favour positivist assumptions. In addition, the study seeks to investigate a complex, dynamic social phenomenon which has not been sufficiently addressed by past positivist research studies that attempted to address similar research questions. This is because positivist studies do not seek to interpret phenomena and may provide a limited view of the phenomenon of interest. The interpretive paradigm is favoured because it considers the nature of the subject and real world complexities; an interpretive approach has the potential to produce deep insights into the phenomenon of interest (Klein & Myers, 1999). Thus the adoption of this paradigm facilitated a richer understanding of the residents' use and non-use of the provided e-services.

Moreover, the interpretive paradigm is selected because the purpose of this study is to investigate the lived experiences of residents with regard to the use and non-use of the provided e-services and their perceived barriers and benefits of using these services. When investigating these lived experiences, the author understands that her experiences and personality will have an effect on how she analyses the findings, and her presence will affect the context in which the study is conducted and data is collected.

The focus of the interpretive paradigm is not on prediction and generalisation but on understanding of meaning. This is one of the features of the interpretive paradigm that motivated for its selection in this study. The current study does not seek to predict or generalise the findings, but rather to understand the phenomenon through meanings that people assign them and produce rich understanding of the residents' use of e-services. Because there is no interest in the challenging of power structures and evaluation, the critical paradigm was not appropriate for the study.

The author's philosophical beliefs about this research also influenced the choice of the interpretive paradigm. The author believes that knowledge of reality is gained through social

interactions, and her assumptions about research are in-line with assumptions of the interpretive paradigm.

4.3 Research Approach

Researchers on the subject of e-government have extensively used quantitative research design, primarily surveys. In the current study, the researcher aimed to address the phenomenon of e-government use and sought to understand and explain the experience of residents with regard to the use and non-use of Smart City services. Thus this type of detailed information cannot be sufficiently addressed by the quantitative method. The identified positivist studies propose lists of factors that influence the use and non-use of government e-services. However, some factors that influence the use of these services have not been represented in these studies. The current study seeks for ways to surface other possible concepts that might not come out of a positivist research. In this regard, the study employed the qualitative research method to illuminate and address the research question.

Qualitative research is a systematic mode of inquiry that investigates complex social structures, interactions, and processes (Bhattacherjee, 2012). This approach is in-line with the interpretive paradigm. As an interpretive researcher, the author in this study favours qualitative research method because she believes that the best way to understand reality is to engage in sense-making rather than hypothesis testing.

4.4 Sample Selection

The population for the study comprised residents in the city of Johannesburg, South Africa, with the requisite sample being selected from this population. In the main, qualitative studies employ a purposive sampling strategy in terms of which the participants are selected based on whether they possess certain desired contextual characteristics as well as the extent to which they are deemed to have the ability to provide useful information (Bhattaterjee, 2012; Patton, 2005.

This section discusses the link between Wang’s (2014) framework and the sampling matrix that was used to purposely select the participants. Wang's (2014) framework identified age, education level, profession and income as key dimensions in understanding different user needs. In order to make it easy to identify potential participants without the need for invasive

questioning, the researcher decided to select the participants for the study based on employment status as a combined indicator of both profession and income level. Thus, three dimensions, namely, age, education level and employment status, were used to inform the sampling strategy (see the matrix depicted in Table 6). Wang's (2014) framework also included other characteristics such as time, region and life affairs, but these were omitted in the interests of simplifying the study. The study was conducted within a relatively small region and at a single point in time and it would have been difficult to include life affairs in the selection of the participants, although discussions of life affairs did take place during the interviews.

Table 6 presents the purposive sampling criteria that were used in order to select the participants. The theoretical sampling in the case of interpretive qualitative research does not necessarily require representativeness on the part of the respondents (Wang, 2014). A small sample was selected for the purpose of conducting in-depth interviews. There was no intention to generalise from the sample but rather to use it to identify additional concepts in the model and to understand the phenomenon in question through the participants' interpretations of their use and non-use of e-government services. The sampling matrix was used to guide the data collection process.

Table 6: Purposive Sampling Criteria for Sample Selection

	Employed		**Unemployed**	
Education level; Age	18-34	35>	18-34	35>
Did not complete high school				
Completed high school				
University degree/higher learning institution degree				

4.5 Sample Size

The size of the sample was determined by the pattern of evidence which emerged and which was required to address the research question. This pattern emerged when the researcher was

no longer able to identify new significant themes or information. Qualitative research generally uses small, focused samples that are appropriate to the phenomenon of interest rather than large random samples (Bhattacherjee, 2012; Patton, 2005). Interviews were conducted with twelve participants. The sample size was in accordance with the sample size recommended and used by other researchers and relevant experts (Dayson, 2010; Moore, 2011; Russell, 2013). In fact several studies have identified that saturation is usually reached before ten interviews have been conducted (e.g. Sweeney, 2008). The data analysis chapter discusses how the themes and a pattern of evidence emerged from the interviews.

4.6 Data Collection

Semi-structured interviews in English were conducted. During the interviews open-ended questions were posed. I used an interview guide to inform the specific questions posed to each participant. Some of the interviews were conducted in public areas (parks and streets), some in the participants' homes and others in my office.

With regard to the interviews that were conducted in public areas, I approached potential participants based on the extent to which they appeared to possess the contextual characteristics noted in Table 6. When approaching potential participants, I first introduced myself and gave an explanation of the details of the study I was conducting. I then presented the participants with a participation letter (see Appendix A). The interviews commenced only after the potential respondents had agreed to participate in the study. When I experienced problems finding participants with the desired contextual characteristics, I used some of my personal networks to identify possible participants and I also asked existing respondents to suggest people who possibly possessed the required characteristics. Depending on the participants' availability, I scheduled a meeting with them via email, face to face, or via a telephone call. When requesting a meeting with the participants, I introduced myself and provided a description of my study. Some of the respondents indicated that they preferred to be interviewed in my office while some respondents invited me to their homes. The interviews were usually conducted during the day and during lunch hour (12 a.m. – 4 p.m.). The decision to conduct interviews at this time was solely based on the participants' availability.

The interviews were digitally recorded. The informed consent of every participant was obtained before the interview commenced while pseudonyms were used to ensure the

participants' anonymity. Upon completion of the interviews, the digital audio file was transcribed. I also took field notes during the interviews. These field notes focused on key points of interest. The order in which the interviews were conducted is represented by the order in which the interview transcripts are numbered in Appendix C.

4.6.1 Research Instrument

The following research question was formulated: How can we explain the use and non-use of the Smart City services provided? In the interests of effective data collection, the research question was addressed by formulating the following two objectives:

1. To explain the use and non-use of Wi-Fi in the city
2. To explain the use and non-use of government e-service websites

The first research objective addresses the digital connected aspect of Smart Cities, while the second objective addresses the informated living aspect of Smart Cities. These interview objectives are in line with the research sub-questions presented in chapter 1 and are intended to answer the sub-questions which, in turn, address the central research question.

Wang (2014) identified three categories of interview questions that may be used to guide interviews. These categories include users' experience with government websites, attitude towards government website use, and problems with government websites (Wang, 2014). Wang (2014) used these categories to uncover core concepts and their underlying dimensions and contexts during the interviews he conducted. This study replicates Wang's (2014) approach. The questions in the interview guide were divided into three areas of questioning, namely, residents' experience with Smart City services, problems with Smart City services, and residents' attitude towards the use of Smart City services. These concepts delineated areas of discussion in the interview. However, because the interviews were semi-structured, I was not limited to discussing only these issues. Topics referring to the four core concepts in Wang's (2014) framework and their dimensions were included in the questions contained in the interview guide and they were included in the probing questions. This ensured a close link between the research instrument and the theoretical framework.

Table 7 illustrates the objectives of each research question, the main interview questions relating to each objective, and the areas discussed in the interviews. The main interview questions and the discussion areas were adapted from Wang's (2014) framework. The main

interview questions were divided into sections, namely, questions aimed at participants who had used Smart City services and questions aimed at participants who had not used any of the Smart City services under investigation. The actual interview guide with the probing questions is contained in Appendix A.

Table 7: Development of the Research Instrument

Research question objective	**Wang's (2014) categories of questions**	**Interview questions**	
		Participants who have used Smart City services	**Participants who have not used Smart City services**
Explaining the use and non-use of Wi-Fi in the city (Digital connected living)	Residents' experience with Wi-Fi services	1. Have you used the city Wi-Fi before? 2. What are your needs as regards the city Wi-Fi 3. How did you learn about the city Wi-Fi hotspots when you visited them for the first time? 4. Which Wi-Fi hotspot do you use most? 5. Are there any alternative means you use to connect to the internet?	1. Have you tried to use the city Wi-Fi before? 2. Do you know that it exists? 3. What do you use to connect to the internet? 4. Why do you choose to use that way of connecting to the internet? 5. Do you know anyone who uses or has used the city Wi-Fi?
	Problems with Wi-Fi services	1. Is it or was it always easy to use the city Wi-Fi? 2. Do you or did you connect immediately to the city Wi-Fi?	1. Please explain why you have not used the city Wi-Fi. 2. What do you think are the main reasons for the low use of the Wi-Fi provided in the city?
	Residents' attitude towards the use of Wi-Fi services	1. Do you think it is necessary to improve the use of the city Wi-Fi? 2. What measures do you think would be helpful for improving the use of the city Wi-Fi?	1. Do you think it is necessary to improve the use of the city Wi-Fi? 2. How can the government encourage you and other people who have not used the city Wi-Fi to make use of it?
Explaining the use and non-use of government e-service websites (Informated living)	Residents' experiences with government e-service websites	1. Have you visited the government e-services websites? 2. What are your needs as regards the government websites? 3. How did you learn about the government websites before visiting them for the first time? 4. What government e-service website do you visit on a regular basis? 5. Which functions of these	1. Do you know someone who uses or has used government websites? 2. Have you tried to use government websites? 3. Do you know that these websites exist? Are you familiar with them or aware of them? 4. Do you have access to these websites? 5. What means do you use to obtain government-related information?

Research question objective	Wang's (2014) categories of questions	Interview questions	
		Participants who have used Smart City services	**Participants who have not used Smart City services**
		websites do you use? Why?	6. Why do you choose to use that particular source of government information? Is it more accessible/more familiar/more reliable than government websites?
	Problems with government e-service websites	1. Did you find these services useful? 2. Was it easy to use them and did you achieve your goal? 3. Are they always easy to use?	1. Please explain why you have not visited the government e-services websites? 2. What do you think are the main reasons for the low use of the government e-service websites?
	Residents' attitude towards the use of government e-service websites	1. Do you think it is necessary to improve the use of the city government e-service websites? 2. What measures do you think would be helpful to improve the use of government e-service websites?	1. Do you think it is necessary to improve the use of the city government e-service websites? 2. How could we encourage you and other people to use these government websites?

4.7 Data Management

In order to ensure efficient and effective management of data, the researcher had back-ups of collected data. This included hard copies of the field notes and transcripts of interview recordings. Two recording devices were used to collect data. Upon completion of the interviews, audio files were immediately saved on the researchers' personal computer. File-names were created and pseudonyms were used for each participant.

4.8 Rigor in Qualitative Research: Tracing the Debate

According to Morse, Barrett, Mayan, Olson and Spiers (2002), rigor in qualitative research is defined as the researcher's adoption of verification strategies and self-correcting mechanisms that ensure reliability and validity in the analysis of data. Rigorous research applies appropriate research tools that meet the stated objectives of the study (Morse et al., 2002). In addition, rigorous research must be transparent and explicit, and clearly describe what has been done in clear simple language (De Wet & Erasmus, 2005; Morse et al., 2002). Morse et al., (2002) argues that without rigor, research becomes worthless and loses usefulness. Hence

a great deal of attention must be directed towards ensuring reliability and validity in all research methods employed in a study (De Wet & Erasmus; Morse et al., 2002).

Researchers have criticised qualitative research, arguing that a lack of methodological procedure in qualitative research defeats and rejects reliability and validity measures (De Wet & Erasmus, 2005; Morse et al., 2002). In addition, challenges to rigor in qualitative research increased as a result of the emergence of statistical packages and developments of computing systems that support quantitative research (Morse et al., 2002). This led to increased doubt in qualitative research findings. However, in their study, De Wet and Erasmus (2005) demonstrated that there are currently computing software programs that have been developed to assist the analysis of qualitative data and facilitate the organisation and procedural analysis of qualitative data. They argue that qualitative computing software programs can be used to ensure reliability and validity of qualitative data.

Some qualitative researchers argue that because these terms: reliability and validity originated in the quantitative paradigm and they are not appropriate in qualitative research (Altheide & Johnson, 1998). This argument resulted in qualitative researchers using less of the reliability and validity terminology (Morse et al., 2002). Lincoln and Guba (1985) replaced the reliability and validity with the concept of 'trustworthiness'. Trustworthiness is measured by four concepts: credibility, transferability, dependability, and confirmability. They argued that these criteria are appropriate for evaluating qualitative research and can be used to replace the reliability and validity concepts. Their argument was based on the notion that each research paradigm requires paradigm-specific criteria for addressing rigor.

The concept of trustworthiness received extensive criticism from researchers. Morse et al., (2002) argued that the trustworthiness criteria neglects to ensure rigor during the research process and presents the risk of researchers missing threats of validity and reliability. The foundation of this argument was the growing concern that the emergence of the trustworthiness concept led to a tendency for qualitative researchers to focus on the tangible outcomes of the research rather than building verification strategies that ensure rigor in their research methods. He further argues that the trustworthiness concepts are unlikely to be valued or accepted as indices of rigor in qualitative research. Morse et al., (2002) emphasises the importance of the reliability and validity concepts and argues that qualitative researchers should return to this terminology and reclaim responsibility for reliability and validity by

implementing verification strategies and self-correcting mechanisms when conducting qualitative research.

This study agrees with the argument presented by Morse et al. (2002) and argues that it is important for reliability and validity measures to be retained in qualitative research studies. The reliability and validity strategies of ensuring rigor are built into the research methods in the current study and this is demonstrated when outlining the research methods in the current chapter and when providing a report on the data analysis procedure in Chapter Five. This helped the researcher instil confidence in her findings by producing a report with a well formulated method of analysis. Morse et al. (2002) identified verification strategies that can be used to maintain reliability and validity and ensure rigor in qualitative research.

4.9 Validity and Reliability of the Current Study

The verification strategies proposed by Morse et al. (2002) were used to ensure validity and reliability of the study. In qualitative research, verification strategies refer to mechanisms used during the process of research to ensure reliability and validity and contribute to ensuring rigor of the research (Morse et al., 2002). These mechanisms involve checking, confirming, making sure, and being certain about the decision and choices made when conducting the study (De Wet & Erasmus, 2005; Morse et al., 2002). Morse et al. (2002) affirm that when adapted appropriately, the verification strategies force the researcher to correct the direction and analysis of the study. This ensures that the completed report presents reliable and valid findings (Morse et al., 2002). Because of this argument, these mechanisms were woven into every step of the research methods for effective results. In addition, in order to build a solid reliable and valid product the study was conducted iteratively.

According to Morse et al. (2002), there are six verification strategies that ensure reliability and validity, hence rigor of qualitative research. These strategies are: investigator responsiveness, methodological coherence, appropriate sampling, collecting and analysing data concurrently, thinking theoretically, and theory development. The current study adapts these verification strategies and incorporates them into each research method in order to ensure reliability and validity, and rigor of the research.

The first verification strategy entails the investigator's responsiveness. The analytical work and critical thinking of the researcher underlines most of the decisions made in research, thus

research findings are only as good as the investigator (Morse et al., 2002). The researcher exercised her creativity, sensibility, open mindedness, and flexibility in order to respond to data in a way that ensures that the research findings are both valid and reliable. This involved critically identifying how to determine that saturation has been reached and responsiveness in selecting categories when analysing data and deciding whether or not the categories hold.

The second verification strategy is the methodological coherence. The aim of the methodological coherence is to ensure that there is a relationship between the research question and the components of the selected methodology (Morse et al., 2002). In the current study, the employed research methods are directly related to the central research question and sub-questions.

The third verification strategy indicates that sampling must be appropriate. This means that appropriate sampling techniques should be used to select participants who have the ability to provide rich information that sufficiently address the phenomenon under investigation. Sampling adequacy must be directed by saturation or a pattern of evidence both in data collection and in the analysis (De Wet & Erasmus, 2005; Morse et al., 2002). In the current study, a purposive sampling matrix underpinned by theoretical characteristics was used for sampling and data collection ended when a pattern of evidence that addressed the central research question was reached.

Collecting and analysing data concurrently makes up the fourth verification strategy of ensuring rigor. The iterative interaction between data collection and data analysis is the essence of attaining reliability and validity (De Wet & Erasmus, 2005; Morse et al., 2002). The researcher moved back and forth in between data collection and data analysis processes. This helped her identify and correct errors and threats to validity and reliability earlier in the research process. As Morse et al. (2002) assured, this verification strategy helped the researcher identify when to stop data collection and analysis, when to continue, and when to modify the research process in order to achieve reliability and validity and ensure rigor.

The fifth verification strategy entails thinking theoretically. This involves having a theoretical foundation, checking and rechecking to ensure that the research methods engage concepts identified in theory (De Wet & Erasmus, 2005; Morse et al., 2002). The study is underpinned by theoretical concepts adapted from Wang (2014).

The last verification strategy is theory development. Especially in the grounded approach qualitative studies, valid and reliable theories should be developed as an outcome of the research process. The current study surfaced additional theoretical concepts that extend Wang's (2014) framework. Together these verification strategies contribute to ensuring rigor by building valid and reliable research findings and they were successfully applied in the current study.

4.10 Ethical Procedure

To ascertain voluntary participation, the author ensured that participants are aware that they have the freedom to not participate in the study, and if they are not comfortable with responding to certain questions, they are free to not respond. Voluntary participation was explained in the participants' letter attached in appendix A. In addition, the covering letter includes information about the study. This information helped participants decide whether or not they wish to participate. The residents were assured that the survey is both confidential and anonymous. This was assured by not requesting the respondents to provide any identifying information. Residents below the age of 18 were not invited to participate in the interview

The identity of the residents who participated in the study has been protected and pseudonyms were used for each participant. The author reports honestly on the findings of the study to avoid bias results. Data collection, analysis and interpretation procedures were not manipulated.

The study conformed to the standards of ethical conduct enforced by the university committee. The following information has been submitted to the university research ethics committee: the research proposal, a complete ethics application form, details of how the respondents' rights will be protected, informed consent form, and the research interview guide. The research has been approved by the university research ethics committee (non-medical), protocol number: H15/06/81. The ethics approval certificate is provided in Appendix B.

4.11 Conclusion of Chapter Four

This paper presented the research paradigm and methods that were used in the study. This is an interpretive study that employs qualitative methods. The general argument is that this approach facilitates a rich understanding of the use and non-use of Smart City services. The sample selection procedure and an argument for the selected sample was presented. This was followed by a presentation of the data collection procedures and the development of the research instrument. The adapted data management strategy was also demonstrated. The chapter presented an argument about rigor in qualitative research and illustrated how verification strategies that ensure reliability and validity were built into the research methods to ensure rigor. Before ending the chapter, information related to the ethical procedures was presented. Then a conclusion ends chapter four. Chapter five is the analysis chapter and it shows the analytical procedures followed when collecting and analysing data.

5 CHAPTER FIVE: ANALYTICAL PROCEDURES

5.1 Introduction

This chapter explains the analytical procedures followed in the collection and analysis of the data. The aim of the chapter is to discuss the procedures that were followed in order to address the central research question. The chapter presents the sampling procedure followed, the interview process and the data analysis procedure in detail. This is followed by a discussion of the way in which each code was applied. The researcher is of the opinion that the study makes a contribution to best practices in qualitative research by ensuring that the analytical procedures which were followed are transparent. Verification strategies and self-correcting mechanisms were introduced during every stage of the research methods used. Raw data in the form of the interview transcripts is contained in Appendix C, while Appendix D presents the processed data grouped into core concepts and their categories. This chapter reports only on the analysis procedure followed, while the discussion chapter discusses the data which was collected in the form of quotations.

5.2 Sampling

A purposive sampling strategy was used in order to select participants who possessed the desired characteristics. The sampling was carried out in accordance with the matrix presented in Table 8. Wang's (2014) framework was used to inform the contextual characteristics represented in the matrix (see Chapter four). The requisite data was collected using semi-structured interviews. The data collection process ended when a pattern of evidence that addressed the research question had emerged. A total of twelve interviews were conducted. The profiles of the respondents in the sampling matrix are presented in Table 8. In order to preserve the participants' anonymity pseudonyms, selected by each participant, were used. These pseudonyms are presented in Table 8 and refer to the twelve residents who were interviewed.

I encountered an interesting challenge during the data collection. Unemployed residents of Johannesburg who had not had any education or who had not completed high school, and who were older than 35, did not feel comfortable responding to the questions posed during the interviews. Three participants who possessed these contextual characteristics had been

invited to participate in the study. They indicated vehemently that they did not know anything about the internet and, thus, they were unable to answer the questions posed. The three interviews were terminated after the question, "What do you use to connect to the internet?" One of the responded replied dismissively, "I don't know what that is". I tried to explain but the respondent expressed his lack of interest and sounded both intimidated and annoyed. I did not force him to continue and the interview was terminated. The fact that the interviews were conducted in English may also have contributed to this challenge. There are eleven official languages in South Africa and English is not the home language of all South Africans. None of these respondents was included in the sample.

It is important to note that the theoretical sampling strategy used in an interpretive qualitative approach does not necessarily require representativeness on the part of the respondents (Wang, 2014). Even though questioned by several writers from other research perspectives (Morse et al., 2002), subjectivity and a lack of replicability does not create problems in qualitative interpretive research. In this study, the researcher was seeking to provide rich descriptions of the important areas that should be taken into account during the attempt to understand Johannesburg residents' use and non-use of Smart Cities services. There was no intention to generalise the research findings. This does not, however, suggest that the study did not make a significant contribution to theory and to practice.

Table 8: Sampling Matrix and Respondents' Profiles

	Employed		Unemployed	
Education level; age	18–34	> 35	18–34	> 35
Did not complete high school	Thabo	Steven	Isaac	
Completed high school	BraGee	Peter	Max	Baba Khumalo
University degree/higher learning institution degree	Andile, and Maria	Mrs Jane	Samie	Jacob

5.3 Interviews

I conducted semi-structured, face-to-face interviews using open-ended questions with several residents of Johannesburg. I used an interview guide to direct the questions posed to each participant. Interviews were conducted with residents who were using or who had used Smart City services and also those who had not used these services. This helped me to gain a better understanding of the reasons why people use or do not use Smart Cities services.

I conducted the interviews and the initial data analysis concurrently. On completion of the first two interviews (Andile and Bra Gee), the digital audio files were transcribed and printed out. I read through the hard copies of the transcriptions several times and then transferred soft copies of the transcripts to Atlas.ti for the computer assisted analysis process. A number of interesting categories around awareness, access and trust emerged from the transcripts and were identified as important elements which should be explored in the next interviews. As a result of the fact that the analysis was conducted during the initial stages of the study, the categories that had emerged were then included in the form of additional probing questions. Because the interviews conducted were semi-structured, I was able to add probing questions to the main interview structure for each participant. Hence, the main interview structure remained unchanged to ensure that the interview questions remained closely allied to the research questions.

The following two interviews (Maria and Isaac) were conducted with the aim of collecting additional data. It was during these two interviews that a pattern of evidence began to emerge. The interviews confirmed the categories around the notions of value, user need, effectiveness and alternative sources, as previously identified by Wang (2014). In addition, as the initial data analysis process proceeded, additional core concepts (trust, access, and awareness) were identified. This required further data support. Interviews were then conducted with three participants (Jacob, Baba Khumalo and Max). However, no new concepts or categories emerged from these interviews although the additional concepts that had emerged in the previous interviews were confirmed. Nevertheless, before concluding that a pattern of evidence that addressed the central research question of the study had emerged, I found it necessary to conduct additional interviews in order to uncover more evidence that supported the concepts that had been identified. Accordingly, five more interviews were conducted (Mrs Jane, Peter, Samie, Steven and Thabo).

5.4 Detailed Data Analysis Procedure

The data analysis process was divided into the following five stages, namely, preliminary processing of data, closed coding, open coding, creation of categories and their properties, and the establishment of relationships between the core concepts. These stages were conducted iteratively through the continuous comparison and analysis of the data. This approach is based on the argument of Miles and Huberman (1994) that the data analysis process consists of four iterative stages, namely, data collection, data reduction, data display, and the drawing of conclusions. Several other studies also describe qualitative analysis as an iterative process that includes collecting data, coding and establishing concepts (e.g. Morse et al., 2002; Seidel, 1998). Categories and relationships are discussed in chapter six – the discussion chapter.

5.4.1 Preliminary Processing of the Data

I personally transcribed each interview, one at a time. Listening to the audio recordings while transcribing the data gave me an opportunity to pay close attention to the data and to understand fragments of it before the coding process began. In addition, it also helped me focus on the way in which the participants had responded to the questions and also to their tone of voice. I made hard copies of the transcripts and read through them several times. This provided an initial sense of the important issues arising from the data. For example, after reading through the hard copies of the first three interviews, it became apparent that awareness and access were key concepts that affected the use and non-use of Smart City services.

Copies of the interview transcripts were then imported into Atlas.ti and the volume of material in each interview was reduced by categorising data into initial themes. The use of electronic coding software helped in the organisation and classification of the data. The initial themes that emerged were, in fact, the four core concepts which had been adapted from Wang's (2014) theoretical framework. These included user needs, effectiveness, value, and alternative sources of information. The selection of the categories was also based on a preliminary sense of what was important. This, resulted in the introduction of an initial level of closed coding analysis and open coding analysis at this preliminary stage.

5.4.2 Closed Coding

Coding refers to the process of classifying and categorising textual data segments into concepts that can be used to uncover patterns in data (Bhattacherjee, 2012). This process involved selecting fragments of data from the transcripts and assigning these fragments to categories that belonged to a certain code family. This contributed to data reduction. Before starting the coding process, codes were created. The core concepts adapted from Wang's (2014) theoretical framework were used as the starting codes while the properties of each core concept were used as sub-codes for the purposes of a more detailed closed coding analysis. Each transcript was read and coded before the researcher moved on to the next one. Even though at this stage interview material was assessed in relation to the categories identified in Wang's (2014) theoretical framework, new concepts emerged. For example, it was identified at this stage that awareness, access and trust should be independent core concepts with their own sub-codes.

5.4.3 Open Coding

Open coding is a coding process that aims to identify and uncover concepts that are hidden within textual data (Bhattacherjee, 2012). I coded the interviews exhaustively with the aim of uncovering new concepts that were not represented in the theoretical framework. I was specifically seeking ideas and concepts that had emerged as both relevant and significant because, although they were not represented in Wang's (2014) theoretical framework, they had been presented repeatedly in the interviews.

However, the open coding was not limited to this stage of the data analysis. During the preliminary processing of the data and the closed coding, an element of open coding was introduced into the process. This ensured that I was open to identifying new concepts at every stage of the data analysis. New categories emerged during this stage. Some of these supported the core concepts and sub-categories as proposed by Wang (2014), while others validated the new core concepts: access, awareness and trust.

When new codes emerged, the previously analysed data was then re-analysed in light of the new codes. This led to the data being re-read several times. Multiple codes were sometimes attached to a single data segment. Atlas.ti was used to group the codes according to shared characteristics. The software also helped me identify the number of quotations that were related to a code and to ascertain the amount that had been said in relation to a specific code

across the participants. This helped me to keep track of the themes which occurred most frequently, the context in which they occurred, and how they were related to each other. At this point, in line with the approach suggested by Seidel (1998), I endeavoured to keep the holistic picture in mind and to reflect on the relationships between the research questions and the recurring themes, I also paid close attention to surprising, unsuspected, hidden and conflicting issues which emerged from the data.

The Atlas.ti software electronic journal feature was used in order to record steps in the analysis process and my reflections on the data. As previously indicated by De Wet and Erasmus (2005), this helped to illuminate, in a logical order, the procedures followed. The journal entries also proved useful during the writing of the analysis chapter of the research report. In some cases I copied and pasted the paragraphs from the Atlas.ti journals to parts of the analysis chapter and, thus, it may be said that some of the writing process began during the coding stages. The Atlas.ti software provides a system of electronic tools for organising, retrieving and verifying data. This facilitates the effective and efficient organisation and procedural analysis of data. The software also enabled me to devote more time to reflecting on the data and the emerging concepts, and to ensuring rigour than on trying to organise the data.

5.5 Explaining how the Concepts were Coded and Justifying the Additional Concepts

This section discusses how the coding was applied to each concept. Wang's (2014) theoretical framework formed a basis for the study as it provided concepts, established a research focus, and furnished an approach to understanding the research findings. Wang's (2014) description of the categories was used to decide with which category each phrase would be associated. This description of categories is contained in the theoretical framing chapter in section 3.4, under the heading "Theoretical Concepts of the Theory of Government Website Utilisation". For example, according to Wang (2014), convenience means that a government website should reduce the extent of the efforts made by residents when they attempt to use the government services. In addition, convenience should improve efficiency when the residents obtain information or transact with government agencies. The convenience sub-concept was used whenever the participants in the study mentioned issues relating to the level of convenience or efficiency involved when they availed themselves of services or transacted with government agencies, as well as the availability of the Smart City services.

In cases in which the data did not relate to any of the categories identified in Wang's (2014) framework, I added certain concepts (awareness, access, and trust) based on the frequency of their occurrence in the data and the extent to which they emerged as common themes. Despite the fact that awareness, access and trust do not appear in Wang's (2014) model, they have been identified in the literature (Bertot & Jaegar, 2006; Dugdale, Daly, Papandrea & Maley, 2005; Maumbe et al., 2008; Mutula & Mostert, 2010; Wang & Chen, 2012).

With regard to awareness, in an e-government study conducted in South Africa, Maumbe et al. (2008) reported that the majority of the residents in South Africa were not aware of the e-government initiatives that had been put in place in the country and that this explained the low use of these services.

Regarding access, Mutula and Mostert (2010), writing in the context of e-government initiatives in South Africa, argued that it would appear that most people in South Africa live in rural areas in which there is limited access to ICT services. This substantiates the identification of access and its relevance in this study. This argument is also supported by Bertot and Jaegar (2006) and Dugdale et al. (2005), who maintain that making e-government technologies accessible to every type of residents should facilitate effective use.

The identification and use of the trust concept in coding is substantiated by studies that identified trust as a variable that influences the use of government services (e.g. Bélanger & Carter, 2008; Chen et al., 2015; Teo et al., 2008). In addition, Lopez-Sisniega (2009) argues that trust in the government may explain why residents decide to use government e-services.

The discussion above explains the decisions made regarding the category with which each phrase would be associated. It also explains how the additional categories were identified and substantiates the identification and use of these categories, with evidence from relevant literature. The three concepts of awareness, access and trust emerged from the study as additional concepts to those in Wang's (2014) framework. It must, however, be borne in mind that this does not necessarily mean that they are the only additional concepts that may be relevant in a developing country context or that they are the most important. It is recommended that additional studies be conducted to test the model further.

The discussion below explains how each concept was used. Quotations attached to each concept are contained in Appendix D.

5.5.1 Core Concept: Value

Value is one of the categories that was adapted from Wang (2014). This study also identified value as a core concept with pertinence, irreplaceability, cost saving, and convenience as the four sub-categories of the core concept of value (Wang, 2014). These sub-categories were used in the coding process.

The convenience sub-concept was used whenever the respondents mentioned issues around the convenience and efficiency which had characterised their access to services or their transactions with government agencies and also the availability of the Smart City services. Cost saving was used whenever cost savings was mentioned in relation to time and money, and a reduction in the paperwork for both the government and the residents, and also when residents mentioned issues around the efficiency of the Smart City services. Irreplaceability was used whenever the respondents mentioned issues around the replaceability and distinctive features of the Smart City services, or the provision of functions and information that could not be obtained through other means. The pertinence code was used whenever there was a reference to the attractiveness of the Smart City services, as well as those which met needs and provided functions and services that were relevant to peoples' life, work or personal interests.

5.5.2 Core Concept: User needs

The concept of user needs was identified by Wang (2014) as one of the concepts that influence residents' decision either to use or not to use government websites. Wang (2014) identified that user needs in respect of government websites are influenced by the profession, financial circumstances, education level, timing of the need, and age of the users. The data further suggested that personal circumstances and study needs may influence residents' decisions to use these services.

The timing of residents' needs emerged whenever there was an indication that the timing of the need influenced the need to use Smart City services while study needs emerged whenever a segment of data indicated that the respondents' need for Smart City services was influenced by school and studies. Profession was relevant whenever there was an indication that profession or work-related needs influenced the need to use Smart City services. The majority of the respondents indicated that their need for Smart City services was influenced significantly by their personal interests and circumstances and it was for this reason that the

personal circumstances code was created. Finances, originally identified as income in Wang's (2015) framework, was attached to data segments that indicated that the residents' financial circumstances influenced their need to use Smart City services. Education level was deemed to be relevant whenever there was an indication that the residents' level of education influenced the need to use Smart City services, while age was relevant whenever there was an indication that residents' need for Smart City services was influenced by their age range.

5.5.3 Core Concept: Effectiveness of Smart City Services

According to Wang (2014), the effectiveness of government websites implies that they should successfully deliver government services and information to the residents. The initial framework indicated that a government website should have three properties, namely, utility, usability and familiarity, if the website is to achieve the goal of effectiveness. These three properties were used to code the data.

The familiarity code was attached to segments of data that indicated that the residents' use or non-use of Smart City services was influenced by their level of familiarity with the services while utility was used whenever the residents mentioned issues around the capability of Smart City services to satisfy their needs and demands. The usability property covered issues related to the ease with which government websites could be found, learnt and understood.

5.5.4 Core Concept: Alternative Sources

Alternative sources refer to channels other than the Smart City services that residents use to meet their needs (Wang, 2014). This core concept includes three sub-categories, namely, the accessibility, reliability and familiarity of the alternative information sources. The three sub-categories were used in order to code the data.

The accessibility of alternative source was used when a respondent mentioned or indicated that other sources were more accessible than the government websites. This category was also used when there was a sense of convenience in respect of the alternative sources. The familiarity of the alternative source was used when a respondent mentioned or indicated that the other sources were more familiar compared to the government websites. Similarly the reliability of the alternative source was used when a respondent mentioned or implied that other sources of information were more reliable than the Smart City services.

5.5.5 Core Concept: Awareness

Awareness emerged as a core concept that explained the use and non-use of Smart City services. It was treated as a broader code with sub-categories. The sub-categories of the core concept of awareness included marketing which relates to advertisements, findability and knowledge of the existence of Smart City services.

Advertisements was used whenever the residents mentioned advertisements as a way that could increase the use of Smart City services. Findability was attached to segments of the data that suggested that Smart City services were not being used because they were not easy to find while the core concept of knowledge was used when the respondents mentioned that the use of Smart City services was influenced by the extent of the residents' knowledge of the existence of such services and knowledge of where to find them.

5.5.6 Core Concept: Access

Despite the fact that access was not identified as a core concept in Wang's (2014) framework, access emerged as a concept in this study. Connectivity and location of residence emerged as sub-categories of the core concept of access. Connectivity was used whenever there was an indication that internet connectivity, devices and resources influenced the use and non-use of Smart City services while location of residence was used whenever there was an indication that the region in which the residents lived determined their access to the services. Computer skills and e-skills were discussed as part of the core concept of access. This aspect addressed access as regards the residents' personal capability and knowledge of how to use the services.

5.5.7 Core Concept: Trust

Trust was not identified as a core concept in Wang's (2014) framework. However, in this study, during the analysis of the individual interview transcripts, trust emerged as a core concept that explained why some residents use Smart City services and why some choose not to use these services. The following sub-categories emerged: trust in the information provided, trust in the physical safety of the environment where the services are available, trust in the technology, trust in the government and reputation of the e-government services. These sub-categories were then used to code the data.

The trust in the information provided code was attached to segments of data that suggested that the residents' decision to use Smart City services was influenced by their trust in the information provided. Trust in the environment where the services are available was used when there was indication that residents did not use Smart City services because of a perceived lack of safety in the environment in which the services were located. Trust in technology was used when the residents mentioned that trust in the internet or Smart City technology influenced their decision to use the services while the trust in the government code was used when there was an indication that residents did not use Smart City services because they do not trust the government or when they indicated that they used the services because they trusted the government. The concept of reputation emerged during the open coding process. It was classified as a sub-code of trust because some of the respondents indicated that they did not trust the government websites and Wi-Fi services because of adverse reports they had had from other people.

5.6 Conclusion

This chapter provided a detailed explanation of the analytical procedures that followed when the requisite data was collected and analysed. Concepts were developed and the chapter explained how each concept was used. The chapter commenced with a general introduction and this was followed by an outline of the sampling procedure used during the study. The interview procedure was then described. This was followed by an outline of the detailed data analysis process which was used. An explanation of how each concept had been used in the analysis was provided and the chapter was then concluded. The next chapter is the discussion chapter. This chapter focuses on the concepts and relationships which emerged, using relevant theory, evidence in the form of quotations and pertinent literature.

6 CHAPTER SIX: DISCUSSION CHAPTER

6.1 Introduction

The previous chapter reported on the way in which the data had been analysed. For the additional concepts that had emerged during the data analysis, additional literature was sourced that provided support for the findings. This chapter discusses the findings of the study in the light of the literature reviewed and the additional literature sourced. The discussion is categorised into core concepts, while evidence in the form of quotations from the interview transcripts is used to support the arguments.

The order of the chapter is as follows. The first section provides an overview of the research questions in order to explain the relationship between the two sub-questions and the reason why the concepts which had been identified were relevant to both the sub-questions. Each core concept, namely, value, user needs, effectiveness, alternative sources, awareness, access, and trust is discussed in the light of relevant theory, pertinent literature, and evidence from the interviews. The relationships between the core concepts is illuminated. The extended framework is then presented. This is followed by a conclusion.

6.2 Overview of the Research Questions

The research aim of this study was to explain the use and non-use of Smart City services. In other words, the study sought to understand the reasons why residents either use or do not use Smart City services when such services are provided. Two Smart City services were identified, namely, internet connectivity in the city and government e-service websites. The central research question was divided into two sub-questions. The first sub-question referred to the use and non-use of Wi-Fi services in the city, while the second sub-question referred to the use and non-use of government e-service websites. However, it emerged from the data that there appeared to be a close relationship between the use of government e-service websites and internet connectivity. Andile (Line 24) stated:

> *"People don't use government e-services because they don't have connectivity, so if they roll-out free Wi-Fi, especially in townships and rural areas, it will help the government to connect to the people on an easier basis*."

Mrs Jane had the following to say:

"*It will only be used by people who are able to use it and those who have access to the internet, but those people who don't have access to the internet; they will not be able to use these things*".

Mrs Jane (Line 22) supported the argument that access to internet connectivity influences the use of government e-service websites. Dugdale et al. (2005) found that it is essential that the issue of access to the internet is centrally considered by the government when strategies for implementing e-government services are developed. Kumar and Best (2006) also identified a positive relationship between the presence and use of internet facilities and the use of government websites in a village in India. This helps to explain why similar concepts emerged in respect of the two sub-questions in this study. In examining the evidence in an effort to answer the research questions it became clear that the two sub-questions were not revealing different evidence. Consequently, in the discussion below, both of the sub-questions are addressed simultaneously – the use and non-use of city Wi-Fi and government websites. However, this is purely for discussion purposes.

6.3 Core Concept: Value

The data suggested that value is a core concept that influences the residents' decision either to use or not to use Smart City services. This finding supports Wang's (2014) argument that value is one of the concepts that influence the use of e-government services. Despite the fact that the qualitative data in this study produced a richer explanation of the reason why value may influence use, the findings are fairly similar to Park's (2008) report that economic value and personal value may cause residents to use e-government services. As reported by Park (2008), personal value may be associated with convenience while economic value is related to finances. The four sub-categories of value identified by Wang (2014), namely, pertinence, convenience, cost saving, and irreplaceability, were identified in the data. The quality of the service provided emerged as an additional property that explained the value of Smart City services. This finding is similar to Parasuraman et al.'s (1988) SERVQUAL model which indicates that the quality of the service provided by a service provider determines the consumer's decision to continue to use the service (Parasuraman et al., 1988).

6.3.1 Pertinence

Pertinence is one of the dimensions of the core concept of value that influenced the use of Smart City services. This dimension indicates that, if Smart City services are to be used, it is

essential that relevant information and government services are provided to the residents (Wang, 2014). This, in turn, implies that the information and services provided on a government website should be related to the life, work and interest of the target users (Wang, 2014). According to Wang (2014), if the pertinence attribute is to be realised, the government e-services must be attractive and government officials must know who the intended users are and what their needs are. Kaisara and Pather (2011) maintain that residents expect the same communication protocol that applies in everyday life to apply to government e-services. In other words, as in real life, residents expect to receive information that matches their expectations and meets their needs in a timely manner. In addition, if Smart City services are to be used, they must be attractive and their functions must relate to people's everyday lives. Mutula and Mostert (2010) and Wang (2014) support this argument by indicating that the attractiveness of a website influences the use of such a website.

In support of this argument Andile (Line 67) stated:

> "*A website should captivate you, you should be like WOW! Now we are talking. But sometimes I look at the city of Johannesburg website and I am like hae! No like the city of Johannesburg website is too plain. It is like white, I think it is still white and orange, something like that. And sometimes the links are outdated and then when you try to communicate with the city of Johannesburg people through the website they don't respond*".

His comment highlights the fact that government websites should be attractive and captivate the users if they are to be used. Andile's further comment about the links being outdated shows that the communication protocol on the website does not match real-life protocol. In terms of real-life protocol he would receive an immediate response but, in the online protocol, this is not happening. This means that there is a gap between the two communication protocols and this is discouraging him from using the websites.

Pertinence also indicates that, if Smart City services are to be used more, it is vital that they address the needs of the target population (Wang, 2014). According to Maumbe et al. (2008), e-government services should be tailored to meet the needs of the users to ensure that they are used effectively. Wang (2014) also found that addressing the needs of the target population is a major factor that influences the use of e-government services. In other words, if these services are to be used, it is important that they meet the needs and demands of the intended

users. Some residents mentioned that they did not use government websites because the websites did not cater for their specific needs. For example, Thabo (Line 7) responded:

> "*Some other government websites I don't have interest in them, what I need is not available on the websites, for example I can't find edit software on the website* [Laughs]*."*

Max's (Line 14) comment that:

> "*They should identify their target market and cater to the needs of their market*."

is consistent with Wang's (2014) definition of pertinence, namely, that government e-services are developed to meet the needs of their target users and local governments should first identify both their target users and the needs of these users. This argument was supported by Isaac who stated:

> "*They should first ask themselves whom are they targeting so, like if, they are targeting students, they should use channels that students use to advertise the Wi-Fi*" (Isaac, Line 8).

6.3.2 Convenience

Convenience is part of the core concept of value. It indicates that it is important for Smart City services to ensure that it is easy for residents to obtain government information, transact with the government and conduct their day to day activities (Wang, 2014). Consistent with Wang's (2014) framework, the results of this study suggest that residents use Smart City services because they find them convenient. In saying:

> "*When I come to work I use the bus, so I use the city of Johannesburg Wi-Fi available at the Rea-Vaya*[1] *stations, it is fast, it is free.*"

Andile (Line 7) is, thus, implying that he uses the Wi-Fi service because it is convenient for him while he is waiting for the bus. Peter, an active user of the city of Johannesburg website stated:

> "*The first time when I used them was when I got my bill, I used to get my bill via post, but now they email them to me. So, if I have some queries, then I check the city's websites, I just go to www on my computer, then I click, the website is on my favourites now*" (Peter, Line 11).

[1] Rea Vaya is a bus rapid transit system in Johannesburg.

Peter's comment suggests that registering and being an active user of the website is more convenient than receiving bills through the post. Convenience was also a critical reason why Jacob, a regular user of the city of Johannesburg website, uses government websites. He responded:

> "*Look I am a researcher, I am always in front of the computer, I am not always out there. The only means for me to get current affairs is to go to the websites; this is what motivates me to use them. Because sometimes I will be busy doing my work. I find the websites easy in that way"* (Jacob, Line 33).

This also applied to Mrs Jane (Line 28), who indicated:

> "*And it is much easier to find information in your office than to go out and physically try to get information. So it is quick and easy when you use the websites to find information*".

Similarly, in a study that examined citizens' willingness to use e-governmental website services in the Philippines, Chen et al., (2015) found that convenience played a fundamental role in the use of e-government services. Similarly, in a study on the use of internet facilities by residents in the Eastern Cape, a province of South Africa, Meyer (2009) found that convenience was one of the determinants of the use of the facilities. For example, residents who had to travel long distances to reach the internet facilities did not use the services (Meyer, 2009).

6.3.3 Cost Saving

The results of this study support Wang's (2014) argument that cost saving is an important component of the value core concept, with this study finding that cost saving determines the use of Smart City services. The data suggested that residents were likely to value the Smart City services if these services either helped them save time and money or led to financial gains. This argument was supported by Peter (Line 15) who commented:

> "*You see our background as black people we are struggling and some people are still struggling even now. Free access to internet and information would be wow, why not. People are looking for work they are sending CVs, they can go use the free Wi-Fi and apply on the internet for free.*"

Bra Gee (Line 22) also commented:

"*But if I had to look-up something on YouTube you know like watching a video clip for like five minutes, it takes about 100MB and that costs like thirty rand so yah I would use free Wi-Fi.*"

This suggests that he would use free Wi-Fi to save on his data costs. In support for this argument, Isaac (Line1) said:

"*I use it to update my software or when I have software to download, mostly when I download stuff, it's easier if I am to download to use Wi-Fi so that I save my megabytes*".

Peter (Line 10), an active user of government websites, responded:

"*You know sometimes when you dial the city of Johannesburg line when you are calling them, you get this option to dial 1 to do this and then once you press you hold for a long time. So if you are using your own phone at home, it uses a lot of airtime it is very expensive, but then if you go to websites and then you click, click it is cheap and easy*."

His comment implies that he uses the government websites because they help him to save time and money. He also stated:

"*They should sell the importance of using e-services and tell people that they can get a response right there where they are instead of using transport money, petrol money to reach offices*."

Peter (Line 38) implies that saving travel time and money may encourage more people to use the websites. This result also supports Moon's (2002) findings that cost savings for both residents and municipalities are one of the expected outcomes of e-government services. In addition, the potential of e-government to reduce costs should increase the residents' use of e-government services (Warkentin, Gefen, Pavlou & Rose, 2002).

6.3.4 Irreplaceability

Irreplaceability refers to the fact that, if Smart City services have distinctive features and provide information that it is not possible to obtain from other sources, it is highly probable that the use of these services will increase (Wang, 2014). According to the data, this is likely to be based on the alternative choices that residents have. These results support Wang's (2014) finding that irreplaceability influences the use of e-government services. When asked whether she would use the government websites if other means of information did not exist, Maria (Line 53) stated:

"*I would use them when I am stuck, I have nothing else to use, because that would be the only option available to me. It is replaceable and the other means are more supportive*".

On the other hand, Andile (Line 18) commented:

"*If I had to choose I would take the city of Johannesburg Wi-Fi, yah, like it works, and it is better compared to other networks, your Vodacom's and your MTNs. I mean those guys are slow, hey, but the city of Johannesburg one is fast and it is always there*".

Both Maria and Andile referred to the Smart City services as being interchangeable and indicated that their choice may depend on the quality of service they receive from the source of service they choose. They may therefore have been referring to service quality in terms of the support offered by government websites and the speed of the internet. Maria was of the opinion that the websites were interchangeable with the walk-in service centres and this was one of the reasons why she had not used them. Andile (a frequent user of city Wi-Fi) voiced his opinion strongly that the city Wi-Fi was irreplaceable because the other internet service providers were slow and this influenced his use.

Some of the residents indicated that they did not need the government websites because they could be replaced by personal networks. For example, Bra Gee (Line 34) said:

"*I always manage to get by without those websites. I just call a friend, they will tell me. I am not saying every place I want to go I know, but most of the time where I want to go, someone has been there, or lives next to the place, you see? So answers are always around*".

6.4 Core Concept: User Needs

The data suggested that user needs was one of the core concepts that explained residents' decisions either to use or not to use Smart City services. Wang (2014) divided user needs into three levels, namely, objective needs, conscious needs and expressed needs. It was not, however, possible to identify these levels in this study. Other similar studies have also addressed the issue of user needs but without Wang's (2014) categorisation (e.g. Naugle, 2011). Wang's (2014) framework identified certain characteristics that influence needs, namely, timing of the need, education level, financial circumstances, age and professional needs. These were also identified in this study. Education level, financial circumstances and

age were identified as a combination of factors that reflected personal circumstances and that influenced users' needs for Smart City services. Accordingly, they were grouped as personal circumstances and discussed together. In addition, occupation-related needs emerged as a sub-category that influenced the residents' use of Smart City services. This category included school needs, professional needs and the needs of non-professional occupations.

6.4.1 Timing of the Need

The timing of the need emerged because the residents indicated that they would use Smart City services if they were available at a time when they needed them. For example, in saying:

> "*If I am in a city hotspot where Wi-Fi is available, chances are I am not going to use it because I am not there to be on the internet. Like when I am at the mall, I am not there for internet, I am there for shopping, so at that point in time when they are available, I don't really need them*" (Max, Line 2).

Max is implying that if the Wi-Fi were available at a time when he needed it then he would use it.

6.4.2 Personal Circumstances

Personal circumstances refer to those factors that determine residents' need to use Smart City services. For example, when asked what influenced his need for government websites, Jacob (Line 24) responded:

> "*It is what affects me on the ground that influences my need to find information. Load shedding affects me, if I am from work I go home and it is dark but when I left they were on, then I will be affected*".

This response suggests that his personal circumstances influenced his need to use the services. In addition, when Samie, a young student, was asked whether she used government e-services, she commented:

> "*I am not sure if I would use any of the services, because, I mean, I don't have to deal with paying rates and water because I am living at home, so my parents do that. And building plans as well, I don't want to deal with it; I think some people could use the websites, like people who are family heads*". (Samie, Line 11).

Samie may have made this comment because the most prominent e-services available on government websites involve bill payments, traffic fines and housing development

information. Samie's comment suggests that the circumstances in which people find themselves and the levels of responsibility they face influence their need to use Smart City services.

In the context of this study, personal circumstances were often a result of the residents' education level, finances and age. It emerged clearly from the data that these three effects are interrelated.

With regard to education level, the data suggested that user needs for Smart City services were influenced by the users' educational background. People of different education levels require different things from Smart City services. For example, the need of a resident with no high school education for different Smart City services may differ from that of a resident with a master's degree. For example, a resident with a low education level may be seeking educational opportunities. In support of this argument Isaac, a matric student, (line 19) said:

> *"And in schools, most of us are not told about these things, so what we learn now in school is that when we finish matric we have to go to university, so if they can give out information about the websites in schools, maybe we can use them to find school".*

The data suggested that, in some cases, uneducated people may not be able to articulate what their needs are and they may not be thinking in terms of Smart City services as a way of meeting their needs. For example, they may not see the need to access information online. This issue did not play a role in educational background in Wang's (2014) study. This may be because, in Wang's (2014) research, the majority of the residents interviewed had a higher education degree, and all the respondents had had experience with the internet (Wang, 2014). Jacob (Line 22) commented pensively:

> "*We come from different levels of education, education plays a role*".

In saying:

> "*Remember we are not all professionals, we are not all educated, we are not all information literate. So, of course, there will be challenges, it will not be used hundred percent*" (Mrs Jane, Line 21).

Mrs Jane supports the claim that education level influences the need to use Smart City services.

The data suggests that, in certain instances, user needs for Smart City services are influenced by age. Studies have shown that people from different age groups have different needs for e-government services (Naugle, 2011; Wang, 2014). The data from this study suggests that younger people are likely to have a greater need for free Wi-Fi services in the city compared to older people. Maria (Line 57) said:

> "*People that can't afford to buy data, for example students, high school kids. Those are going to be there the whole time, because we are a generation that we were brought up in technology. We have these things with us, around us, and if I can't afford to buy data every day, of course I am going to use city hot spots*."

When asked about the use of free Wi-Fi hotspots, Peter, an older family man (35 and above age group), responded:

> "*But now, with us we, besides, maybe we don't know how to use it, we have data, our companies offer us the 3Gs so you understand, it is easy, why do we have to compete with people that are still studying that don't have money. So free Wi-Fi is good, but for students*" (Peter, Line 8).

Age is also closely related to financial circumstances. The data indicated that younger residents were likely to use free Wi-Fi because of financial needs. This is the age group that is the most keen to use the internet but often they are not able to afford to buy data. A response from Thabo supports this claim. When asked about the use of free Wi-Fi, Thabo, a high school student, responded jovially and excitedly:

> "*For me free Wi-Fi does it hey, free Wi-Fi, because most of the time I download movies and they take two hours, and downloading something for two hours cost a lot of data, so with free Wi-Fi you just download unlimited*" (Thabo, Line 12).

6.4.3 Occupation-related Needs

Occupation-related needs encompass all types of work needs, as well as school and study needs. These categories were found to be similar because they all refer to needs imposed on residents as a result of their school or study requirements and their work requirements. It was clear from the data that, in the case of people who work, their needs are influenced by their work while the needs of students are influenced by their school work.

The school and study need category is not represented in Wang's (2014) framework. This may be the result of the samples used, as Wang's (2014) sample did not include students. On

the other hand, Johannesburg is home to several higher education institutions and high schools with people from all over South Africa and Africa settling in Johannesburg for educational purposes. This probably explains why school and study needs emerged as a concept that influences the residents' need for Wi-Fi services and government websites. This argument was supported by Peter. When asked what he thought about free Wi-Fi, Peter (Line 7) responded:

> "*It is good, but not for us grownups* [laughs] *but for youngsters, especially students, the city has a lot of students and during our time when we were studying it was very hard to get access to internet and now Wi-Fi is free and easy* [sounding excited] *you can do a lot of research you can download, you can do anything, so it is very good*."

Maria, a student at a higher education institution, indicated that she used government websites in order to obtain information for her research. She stated:

> "*I have never really had a reason to go to them. Well I am a student, besides my research part where I have to search what is going on in the city, what type of development plan they have for the city, besides that, there is nothing else I am using it for*" (Maria, Line 28).

In support of this point Isaac, a high school student who uses free Wi-Fi services, commented:

> "*Accessing internet makes things easier because, nowadays, the most important information you find on the web, all the answers, sometimes when we are too lazy to go through our books and all*" (Isaac, Line 3).

This comment indicates that he used Wi-Fi services for school-related purposes.

Similarly, for those residents who work, user needs for Smart City services were influenced by their profession. Consistent with Wang's (2014) findings, the results of this study suggest that people in different fields of work have different needs as regards government websites. When asked which government websites she used, Mrs Jane (a training officer) commented:

> "*The one that I normally visit is the home affairs one. I visited it because I was training students to show them that they can go to the home affairs website to see their marital*

status, I was training some high school kids for them to check and know their marital status[2]." (Mrs Jane, Line 10).

This indicated that her visit had been influenced by her job. Jacob (Line 26) responded:

"*As an IT specialist, I did some jobs that offer us an opportunity to know about government websites. Part of my job encouraged me to know. I learnt about them through my job and through being a specialist. We create websites that encourage public participation*."

The evidence presented above clearly indicates that people's professions may explain why they visit certain Smart City services.

6.5 Core Concept: Effectiveness of Smart City Services

The effectiveness of Smart City services emerged as a core concept that influenced residents' decisions to use Smart City services. Consistent with the findings of Wang (2014), familiarity, utility and usability emerged as sub-categories of the core concept of effectiveness. The evidence presented supports common themes in the relevant literature on effectiveness, usability, utility and familiarity. These concepts have been extensively investigated by several researchers (Shackel, 1991; Dillon & Morris, 1999; Wang, 2014). For example, Shackel (1991) used properties such as effectiveness and utility in order to measure usability, while Dillon and Morris (1999) extracted three pillars that underpin usability, namely, effectiveness, efficiency, and satisfaction. In his study, Wang (2014) suggested that utility, usability and familiarity can be used to measure effectiveness. In line with these findings this study found that all these concepts contribute to explaining residents' decisions either to use or not to use e-government services.

6.5.1 Utility

The utility of a government e-service refers to its capability in satisfying specific needs of the users (Kaisara & Pather, 2011; Wang, 2014). In order to be effective, it is essential that Smart City services are characterised by the property of utility. For example, Wi-Fi services should provide internet services without any connectivity problems (Kaisara & Pather, 2011). A complaint forum or an account payment function on a government website should ensure that residents receive feedback in real time, while an account payment function would enable

[2] Fraud related to official marriage records is common in South Africa.

users to see their payments reflected on their accounts (Kaisara & Pather, 2011). Kaisara and Pather (2011) argue that in order to gain more users, government e-services should enable the users to communicate with the government officials in a real-time environment. In other words, if Smart City services are to be used, they must have the necessary functionality and the functionality should work. Max (Line 5), a non-user of government Wi-Fi, commented:

> "*I think when you use the Wi-Fi, there will be connectivity issues, well it will connect but it will not connect often, and you can't really do anything, so it's not really helping me, there are problems and they do frustrate*".

This suggests that Max did not use the service because he thought it would not work and it might not address his needs.

On the other hand, Andile, a frequent user of the city Wi-Fi at the bus stations, stated categorically that he was continuing to use the service because it worked as expected. He stated:

> "*You know like sometimes in Soweto, MTN network is bad. So it is good to get Wi-Fi that is fast and quicker, so yah I prefer it because of that actually, besides saving, the speed of it; 95% it works.*" (Andile, Line 6).

Samie indicated that she rarely used the city Wi-Fi. She had tried to use it at one shopping mall but had not been successful. She had the following to say about the city Wi-Fi:

> "*Either connection is bad or you need passwords to connect to the Wi-Fi. I have tried it and like even loading the first page on google take forever* [laughs] *... And I think for me the thing that would really motivate me to use is it is if they increase the speed, then I would probably use it a lot more*" (Samie, Line 1 and Line 5).

Maria (Line 50) stated:

> "*You see SARS? SARS is a government entity and, for tax filing, there are times when they open their windows and I have used it, it is quite efficient. But now if SARS every time I am trying to submit something there is problem, I wouldn't use it. Because I would be thinking I am wasting my time here, this thing is wasting my time*".

The South African Revenue Service's (SARS) e-filing is one of the most successful and effective e-government projects in South Africa (Mutula & Mostert, 2010). As a result of its effectiveness, SARS e-filing is a widely used system. Data suggests that residents are happy to continue using the SARS e-filing system (Mutula & Mostert, 2010). This suggests that the

utility of e-government services influences the use of these services. Peter (Line 20) provided evidence to support this argument. He paid his accounts through the city of Johannesburg website and he had found the system to be effective. He commented:

> "*Ever since I have registered, on a monthly basis they sms me what I am owing and what my monthly bills are, what I have to pay, my rates and all. And I can even quickly go and check on the website when I need to know and I think, maybe for other services that I need to pay, I can just go to the website and check* [sounding confident]. *It is very, very useful, in fact, even effective.*"

Peter was clearly satisfied with the utility of the service he was receiving from the City of Johannesburg website and, as a result, had become a frequent user.

6.5.2 Usability

Usability refers to the extent to which government e-services are easy to operate (Wang, 2014). For example, a government website should make it easy for the user to ascertain how to obtain information and services. In other words, it should be easy to search for information on the website, and the website should be clear at a glance. Andile (Line 38) said:

> *"I haven't used it, I haven't. But there are times when I tried going to the website because I wanted to do something but I couldn't find what I was looking for."*

Andile had obviously tried to use the city of Johannesburg website and, because he had not been able to find what he was looking for easily, he had stopped using it. Wang (2014) also identified that if users find it difficult to use government websites, they will not use them.

On the other hand, Mrs Jane, a frequent user of the Home Affairs website, was happy with the usability of the website and stated that she would continue to use it. She said:

> *"Yes, I would continue to use the websites, they are easy, and they are easy to know some of the things, people are not aware of most of the things available on the websites"* (Mrs Jane, Line 19).

This evidence suggests that the usability of government e-services influences the use of these services. In other words, residents who experience the services as usable are more likely to continue using them, while those who find them difficult to use are less likely to use them.

6.5.3 Familiarity

Familiarity is one of the properties of effectiveness that influences the use of Smart City services. Familiarity refers to the extent to which residents feel comfortable using the services and this, in turn, relates to habits of use (Wang, 2014). Kaisara and Pather (2011) found that residents' familiarity with e-government services was based on previous visits. Residents who engage with the services regularly are more likely to experience them as familiar and then to continue to utilise them, while residents who do not engage with the services on a regular basis are likely to experience them as unfamiliar. Steven (Line 6) commented:

> "*Resetting the settings could be problematic; especially for old people and people who do not know how to change the settings, it might be very difficult for them to use the Wi-Fi.*"

This comment suggests that if people are not familiar with the services, they may not know how to use them and, in all probability, they would not use the services.

In addition Maria (Line 45) said:

> "*Familiarity. The website is not something that I am used to so it wasn't really familiar because it was my first time using it.*"

This evidence clearly suggests that when websites have a well-established look and feel, they appear more familiar to the users than would otherwise be the case. For example, if government websites resembled other government websites (e.g. SARS), people would feel that they were in a familiar space when they used them. This approach is encouraged by Kaisara and Pather (2011).

Baba Khumalo had the following to say in this regard:

> "*It also comes down to paradigm shift, shifting to using the websites when we need something and making it part and part of our lives*" (Baba Khumalo, Line 15)

Baba Khumalo thus implied that it is difficult for people to change from something with which they are familiar to something that they have not used before. He recognises that use would probably increase as more people become familiar with the websites.

6.6 Core Concept: Alternative Information Sources

The presence of sources that provide similar services to the Smart City services influences the use of these services. This description is consistent with Wang's (2014) argument that alternative information sources are one of the variables that influence the use and non-use of government websites. Kaisara and Pather (2011) found that the inability of a government website to respond to queries and provide automated responses and feedback would result in residents ceasing to use these websites and resorting to more traditional methods of communication.

Some of the participants compared the news obtained from city websites with news obtained from social media and news media as a way of highlighting their expectations of convenience and their perceptions of reliability. For example, in saying

> "*With Twitter I don't need to go and check, it just feeds into my phone*" (Maria, Line 39),

Maria is comparing using Twitter to using the government websites in order to obtain information. She clearly found Twitter more reliable and more convenient than the government websites. The City of Johannesburg makes use of Twitter to provide information about some of the e-government initiatives in the city and also some general information about the city. However, Maria was implying that Twitter was more convenient because she was receiving the information without having to take action. Bra Gee (Line 32) commented:

> "*News24 to me is very reliable, it is also truthful, information you get is very accurate, and it's not biased, it does not favour anyone, it just represents news as they are*".

Thus, Bra Gee was emphasising that he wanted information from sources that he considered to be reliable and unbiased, thereby implying that city sources may not meet these criteria. Steven, a non-user of government websites, expressed a lack of interest in the websites. He commented:

> "*I don't really follow information about the city, some stuff I just get by getting around, I ask around, I get information from rumours, I talk to people, I don't necessarily have to dig for it, like, I am not really interested*" (Line 17).

Steven's alternative information source was talking to people and he found that sufficient. He clearly perceived the government websites as providing information that he did not really need. Kaisara and Pather (2011) also found that residents tend to use alternative sources if

they feel that these sources are more reliable than others. This suggests that the presence of alternative sources influences residents' decisions to use Smart City services.

It emerged from the data that the walk-in service centres which people can physically visit for information and services are a further substitute for the services provided on the city websites. If people find it easier to go to the service centres for information and services instead of using the websites, the chances are they will not use the websites. In support of this assertion, Baba Khumalo (Line 15) commented:

> "*People feel like they should go straight to the government department to ask and get information they need. Some people are still used to the old fashioned style that, if you need information about something, you go to the government department to ask*".

6.7 Core Concept: Awareness

The study uncovered additional concepts such as awareness, access and trust that contribute to an insightful explanation of the use and non-use of Smart City services. All the respondents indicated that these three concepts play a role as essential motivators for the use of city Wi-Fi and government websites. Awareness is important because if people do not know about the services there is no possibility of them using the services (Maumbe et al., 2008). There are three sub-concepts within awareness, namely, marketing, which according to the data is similar to advertisements, knowledge of the existence of the services, and the findability of these services.

6.7.1 Marketing

The marketing of Smart City services is one of the key concepts that influence both the awareness and use of these services. Marketing refers to the various approaches and communication channels that may be used to advertise the services and raise the awareness of the residents (Maumbe et al., 2008). These may include TV, radio, newspapers, billboards, pamphlets, awareness campaigns, social media and posters. People have identified advertisements as playing the main role in marketing. In fact all the respondents in this study indicated that one of the reasons why they did not use Smart City services is that they were not advertised enough. For example, Jacob (a non-user of city Wi-Fi) stated:

> "*I don't know of them, for now I only know the one at the taxi rank, there is access there. I don't know where others are. I will look up on the internet to check how far the*

roll-out then I will know of them and I will be aware of whether I have access or not". (Jacob, Line 16).

Bra Gee (Line 36) angrily commended:

"*They do not tell us they exist, how are we supposed to know? I don't know I have never seen the websites anywhere, they can't just sit there on the internet expecting to magically found*".

Bra Gee is clearly implying that he does not use government websites because they are not advertised enough. Steven also appeared to be annoyed about the same issue. He responded:

"*These websites are important because we have to know what is happening in our country, I am talking about people who really want to know. But then why don't they advertise the websites?* [sounding annoyed]. *On TV it is not there, on radio, nothing! So it is like they are a secret*" (Steven, Line 15).

This argument is supported by Andile (Line 64) who commented:

"*I think it is about advertising, Yah I think government need to go on that huge advertising drive, they should just go out there and challenge the perceptions that we have as people. I think, if they do that, they will find that people will actually use city Wi-Fi and websites more*".

The evidence presented above suggests that people are not using Smart City services because these services are not advertised sufficiently to make the public aware of them. In an e-government study conducted in South Africa, Maumbe et al. (2008) reported that the majority of the residents in South Africa were largely unaware of the e-government initiatives which had been put in place in the country. This was primarily as a result of lack of effective marketing strategies that were aimed at advertising the services and raising the awareness of these initiatives (Maumbe et al., 2008).

In discussing advertisements as a way of raising awareness, several respondents had numerous suggestions to make about how these services could be advertised. For example, Jacob (Line 18) recommended:

"They should create awareness; they could use media platforms, go to radios, TV, they can advertise, they can use pamphlets, or physically advertise and inform the nation that there is this Wi-Fi roll out project that will help them. Tell people that they can use services that they couldn't reach. Because it is not always easy to go to the government

office and find an officer who will help you. If the systems are there and the services are operating there on the technology it is easy to connect and be able to use them".

Baba Khumalo (Line 7) commented:

"*They should use the media to make people aware. And in busy places like this one (pointing to the park) public spaces, they should advertise. Because you see like with the government, they have good policies but you see a lot of people don't know about them (sounding serious and concerned). The policies are good but communicating them to the people and implementing them is poor, that aspect of it is very poor.*"

The data suggests that, unless the e-government initiatives are advertised to make users fully aware of their existence, the use of the services will possibly remain low.

6.7.2 Knowledge of the Existence of the Services

Knowledge of the existence of Smart City services also forms part of the core concept of awareness. According to the data, some residents were not using Smart City services because they did not know that they existed. For example, when asked whether he had used any of the government websites, Bra Gee (line 36) responded:

"*We don't know about these websites, how are we supposed to know about them? Of course if I knew about them I would have taken a look at them, but I don't know."*

This suggests that people may make greater use of the services more if they had some knowledge of them. Knowledge may be acquired from several sources such as media and other people. Thabo (line 11) confirmed this by saying:

"*They should advertise it. Now we have free newspapers in Soweto, so if maybe they could also advertise it in the newspapers, because I mean we get the newspaper for free, so information about government websites should be in there, then when they are there we will be able to see. And many people can like the websites you know, because if you keep hearing about something several times, you would want to see what is this thing that people are talking about, you would want to check it out to see if it is real, then, if you find out that it is true, you will start using it. And they should also advertise in schools, tell matrics and Grade 11 students so that, when they finish school, they can have plans, they can visit the websites and have information."*

This comment highlights the fact that if people do not know about the services, it will not be possible for them to use them.

In addition, the data suggests that one of the reasons why residents do not know about the existence of Smart City services is that they are ignorant and, also, some people are not willing to change their old ways of doing things. In saying:

> "*I think most of us are also ignorant, we are not doing enough to utilise all the resources made available to us, so people should be educated about these resources, and also the effort should also be coming from us, the ones who want those services"* (Isaac, Line 16).

Thus, Isaac supports the argument that some people may not know about the services because they are not interested and also they are ignorant. Knowledge of these services may help residents to realise the benefits of using such services.

Isaac (Line 17) commented:

> "*All they have to do is to raise awareness, the rest is up to us, and they cannot force anyone to do something. The rest is up to us to go and use the resources. And in schools, most of us are not told about these things, so what we learn now in school is that when we finish matric we have to go to university, so if they can give out information about the websites in schools, maybe we can use them, we will be more attentive to this kind of things. They should provide information, just provide the information then we will work on our paths, whether we want to use the information or we don't want to use the information, they should do their part, and provide information*."

Isaac clearly recognised that awareness is important but that awareness without initiative is not sufficient. It is clear from these arguments that it is important that residents develop a positive attitude towards these services and also that they are willing to learn about them and use them.

6.7.3 Findability of the Services

The data suggests that one of the reasons why some residents do not use the Smart City services is because they do not know where to find them. With regard to the use of the city Wi-Fi, Maria (Line 20) commented:

"*People may not be aware of where to go for these hotspots. Do I need to be in a certain place or can it be in the whole of Joburg central, can I access it everywhere? You see*?"

Maria's comment indicates that, although some people may know about the existence of the services, they may not know where to find them. It is clearly important that it is easy for people to find these services once they have shown an interest in using them.

6.8 Core Concept: Access

Access, a concept that emerged as an additional concept in this study, did not feature in Wang's (2014) framework. A possible reason for this is that Wang's (2014) study was conducted in China, where the majority of the population own mobile devices and internet facilities are available in every village (Wang, 2014). According to Wang (2014), internet connectivity has not been a serious problem in China for the last 10 years. However, in South Africa, access and connection to the internet remain a challenge (Maumbe et al., 2008). Two components of access, namely, connectivity and e-skills, emerged from this study. Connectivity refers to access to the internet and the devices required to connect to the internet and to use the e-services (Mutula & Mostert, 2010). On the other hand, e-skills refers to the ability of residents to access and use both the internet and the e-services (Mutula & Mostert, 2010).

6.8.1 Connectivity

Data showed that despite the fact that several city governments have embarked on a free Wi-Fi project, Wi-Fi is currently available in limited places only. Mutula and Mostert (2010), writing in the context of e-government initiatives in South Africa, noted that almost half of the population in South Africa lives in township areas where the ICT infrastructure is less developed than in the urban areas. Maria (Line 5) stated:

"*I haven't explored that option because I am not usually in the vicinity where it is available*".

The data suggests that people who do not have internet connectivity and the resources required to access the internet will, in all likelihood, not be able to use the government e-services. Jacob (Line 19) commented:

"*Firstly, people may not be using these hotspots because of accessibility. If people don't know how to access the services then it is a problem on its own*".

In saying:

"*If you look at studies, one of the main reasons why people in Africa don't use internet is because it is expensive and it is not available, not everyone has access to the internet on a regular basis. For some people, they only get it when they are at work, school or university. But if they are just there at home, they don't have access to the internet*".

Andile (Line 24) was supporting the argument that access to the internet, connection and resources influence internet use. This indicates that the extent to which residents have access to the internet and also the devices required to use the internet may explain the use and non-use of these services. This argument is supported by Bertot and Jaegar (2006) and Dugdale et al. (2005), who state that for effective use, e-government technologies should be accessible to every type of resident. Thus, in order to increase use, it is important that city government takes steps to ensure that all residents are afforded access to the internet and the devices required. In support of this argument, Maumbe et al. (2008) state that in order to increase the use of e-government services in South Africa, it is essential to ensure that a broad base of residents is able to connect to the internet and access e-government services.

6.8.2 E-skills

Computer skills and e-skills refer to the personal capability and ability of people to use computers, the internet, information on the internet, and e-services (Mutula & Mostert, 2010). According to Maumbe et al. (2008), the success of e-government initiatives in South Africa depends on the development of computer skills and the acquisition of the knowledge required to use the services. For these reasons, it is important that all residents, regardless of their culture, age group, and educational background, are equipped with the ability to access and use Smart City services. It is not sufficient for residents to possess all the resources required to use e-government services but not to possess the e-skills and computer skills required to access these services (Mutula & Mostert, 2010). Wang and Chen (2012) found that improving residents' knowledge of how to use e-government services and equipping them with the ability to use these services would help to facilitate the use of these services. Jacob (Line 21) commented:

"*They can educate people by providing training; people will not know how to use certain services if they are not trained. So they should go to the community centres where they can provide training or give manuals to people who can be able to figure out stuff on their own*".

The data suggests that because some people are not using Smart City services because they do not possess the ability to engage with these services, computer training programmes are essential. Mutula and Mostert (2010) identified that the high levels of digital illiteracy in South Africa constitutes one of the challenges to the use of e-government services in the country. E-government projects in African countries have tended to fail because of a lack as regards the provision of the human skills and capacities required to help residents to avail themselves of these technologies (Mutula & Mostert, 2010). It is, therefore, important to conduct training programmes to educate people on how to use these services. Mrs Jane (line 23) responded:

"There should be someone who is showing people or training people on how to go about doing things on the websites. People need to use technology. And, also they should be encouraged from an early stage, from high school or from junior level. Like, if you want to check the bus schedule, you can use the websites and this is how you can go about it. You can check what time the bus leave, or what time the bus arrive … People need to be trained. There should be more training."

It is clear from the evidence presented above that possessing the required computer skills and e-skills may facilitate access to Smart City services and, thus, increase the use of these services.

6.9 Core Concept: Trust

The data suggested that trust is one of the concepts that helps to explain the use and non-use of Smart City services. Several writers in the field of e-government field have researched this concept, for example, Bélanger and Carter (2008; Chen et al. (2015) and Teo et al. (2008). This study also identified some of the previously discussed aspects of trust, namely, trust in government and trust in technology. However, the study also uncovered additional aspects of trust that had not been explicitly explored in previous studies. These include trust in the services and information provided, the reputation of the service, and physical safety. Trust in

the technology, services and information provided is discussed together because these aspects both address trust in relation to people's individual perceptions.

6.9.1 Trust in the Government

Trust in the government also influences residents' decisions either to use or not to use Smart City services. Data suggests that people who do not trust the government tend to not trust the e-government services. According to Maumbe et al. (2008), corrupt and malfunctioning political and government systems in South Africa constitute one of the challenges to the use of e-government services. Lopez-Sisniega (2009) also identified that trust in the government is one of the factors that influence the use of government e-services. Reflecting this concern, Andile (Line 59) commented:

> "*I think, unfortunately, people don't trust the government. In a way it is unfair but, also, the city of Johannesburg e-government people are not doing anything to give that perception you know that hey, we are not just government, this is what we offer you, these are the types of services that we have online, you can trust us*".

6.9.2 Trust in the Technology, Service and Information Provided

The study found that trust in the technology that delivers Smart City services and the information being delivered are aspects of the trust that influences the use and non-use of these services. The trust discussed in this context is based on the resident's individual experiences with the technology, the services and the information provided by the e-government services. Kaisara and Pather (2011) identified that the use of e-government services when residents are required to transact with the government is likely to invoke security concerns on the part of the residents. The reason for this is because transactions based e-government services require the residents to provide personal information and this may, in turn, expose citizens to hackers, viruses and identity theft (Kaisara & Pather, 2001). This category also addresses the residents' fear of identity and privacy theft. Maria, a non-user of the city Wi-Fi, commented:

> "*I don't think that it is very secure. I mean, thing is, if it is open to the public then chances are that they monitor it. Sometimes if I am accessing a public network, I am thinking that if I access my banking profile using that, maybe someone can hack into my account or someone can get my credentials* [her voice taking a solemn tone]. *So I don't really think it is safe*" (Maria, Line 13).

Steven raised his concerns about information from the Smart City services:

> "*And one of the thing why people are not using it is because of crime, fraud, you know people have been getting the messages that they have won some money and need to send their details then they take your account number and steal your money*" (Steven, Line 16).

The comments above suggest that people may not trust the information on the websites as a result of internet fraud cases and a lack of trust in communication technology. It appears that it is easier to trust a person if that person is talking to you in person. Baba Khumalo (Line 17) commented:

> "*As people, we trust hearing government officials telling us information, so using the websites we risk getting outdated information.*"

On the other hand, some of the respondents were engaging with some of the Smart City services on a regular basis because they trusted both the services and the information provided. For example, Peter used the City of Johannesburg website on a regular basis to check his accounts, rates, and building plans. He responded:

> "*I think I can trust it, all the information that I got from the websites it's been useful, I trust it very much, I have never seen anyone going into the websites and putting rubbish*" (Peter, Line 16).

In defence of the city Wi-Fi, Andile a frequent user of the Wi-Fi service provided at one of the bus stations, commented:

> "*Thing is, let's say you use Wi-Fi in Sandton, that can also be hacked. Even if you use your own data, you can also be hacked. So I don't buy into this whole argument that because it is government Wi-Fi then people will hack into it. You know if you are just careful with your phone, and you don't save your passwords then no one will hack into your accounts. Because you can use internet network from Vodacom you can also get hacked* (Andile, Line 29).

The main implication of above statements is that people's individual perceptions of trust influence their decisions on whether or not to use Smart City services. This may mean that residents who feel apprehensive about the services will not use them while those who do trust the services may possibly become frequent users.

6.9.3 Reputation

It emerged from the data that the reputation of Smart City services in the society plays a role in whether residents either use or do not use the services. Trust in this context is based on other people's experiences with the Smart City services. According to the data, if residents who have used the services tell other people that they have had bad experiences with the services, this will probably discourage people from using the services. On the other hand, if the services enjoy a good reputation in the society, more residents will probably trust them. This category is closely related to social influence (Shajari & Ismail, 2013). Social influence refers to the way in which people talk about services and encourage other people to use such services (Shajari & Ismail, 2013). Shajari and Ismail (2013) found that social influence influences the use of e-government services. This suggests that if these services have a good reputation and exert a positive social influence, there will be more trust in the services and they will be used more than may otherwise have been the case. In this respect Andile (Line 36) commented:

> "*I don't trust the website based on the stories that I have heard, not necessarily based on my experience*".

Andile is thus implying that if the website had a good reputation, he would trust the service being provided and probably use the website. Isaac (Line 2) was using the free Wi-Fi because he had been encouraged by a friend to use it. This suggests that the reputation of the services in society may influence the use and non-use of these services.

6.9.4 Physical Safety

According to the study results, the physical safety of the areas in which Smart City services are provided raises security concerns and influences residents' trust in and use of these services. In other words, residents may not connect to the free city Wi-Fi and use the e-services if they feel that it is not safe for them to use their devices in the places where the Wi-Fi is provided. In support of this assertion Maria (Line 6) stated:

> "*I don't really trust Joburg central, I still have that in my mind that someone is going to come and snatch my phone and run away with it while I am waiting there trying to access Wi-Fi and use the services*".

Although physical safety was not identified as a trust dimension in previous studies it did, however, emerge as an additional concept in this study. This finding may be the result of the

high rate of crime in Johannesburg. In fact, Maumbe et al. (2008) identified the crime rate as one of the unique challenges facing the implementation and use of e-government in South African cities.

6.10 Relationship between Core Concepts

This section discusses the relationships between the core concepts. This study identified some of the relationships represented in Wang's (2014) framework but also found additional core concepts that could extend the framework. In other words, existing relationships in Wang's (2014) model were identified in this study as well as additional relationships. These relationships are discussed below.

6.10.1 Discussing the Relationships Identified and that are also Represented in Wang's (2014) Model

The study findings revealed a two-way relationship between the effectiveness of Smart City services and alternative sources. This relationship is represented in Wang's (2014) framework. This study also found that the number of effective alternative sources available plays an important role in determining the use and non-use of Smart City services.

There are four properties that characterise this relationship, namely, overlap, complement, competition, and replacement (Wang, 2014). For example, according to the data, as regards obtaining general information about the city, there may be an overlapping or a complementary relationship between the City of Johannesburg's website and the City of Johannesburg's Twitter. The data also suggests that there may be a competitive relationship between government websites and other media websites. In addition, there could be a replacement relationship between government websites and the walk-in government service centres, local newspapers and local radio stations. This suggests that if residents are of the opinion that there are other sources that are able to provide more effective services than the Smart City services, they will probably decide not to use the Smart City services and, instead, use alternative sources. Similarly, if Smart City services deliver effective services that are not available from other sources, residents will tend to use the Smart City services more than the other sources. In fact, Kaisara and Pather (2011) argue that if the e-government services do not effectively deliver the required services, residents will resort to other methods to obtain the services required. In saying:

"*You know, the reason why their Twitter is efficient and the websites are not, like the City of Johannesburg when you tweet them and say: hey but what's happening why is my electricity off, why is there no water, like they answer you quickly. But then if you ask that question through their websites, they will take like two days to respond*"

Andile (Line 45) is comparing Twitter with the government websites and he is clearly implying that he receives effective information from Twitter, an alternative source.

The data suggested a relationship between the effectiveness of the Smart City services and user needs. Smart City services are developed in order to meet residents' needs for information and services. The residents will probably believe that these services will address their needs if they are effective (Wang, 2014). This relationship was identified by Wang (2014) who found that e-government services are required to be effective so that they meet the residents' needs successfully. However, for these services to be effective, local governments are advised to understand the residents' needs and then to tailor their services to the needs of the target population (Wang, 2014). According to Mutula and Mostert (2010), the most effective and successful e-government systems in South Africa are those that have been tailored to address the needs of the target users. Thabo, a non-user of government websites, tried to use a government website (Department of Trade and Industry) to address his need for information. He had the following to say:

"*And sometimes they take time to respond on these websites, they take time* [stressing his point] *I know the DTI is now two years now and I am still waiting for funding assistance but they haven't said anything, so I can't deal with something that takes time. So maybe I have lost interest in them because of that."* (Thabo, Line 8)

It is possible that, had the website addressed his need effectively and efficiently, he may have continued to use government websites.

The data demonstrated a relationship between value and user needs. This relationship is represented in Wang's (2014) framework. In the context of this study this relationship was found to exist because Smart City services are developed in order to address the needs of the residents and the value of these services ensures that the needs of the residents are addressed. If the services are to be valuable to the residents, it is essential that they are related to the lives, work, and interests of the target population (Wang, 2014). This means that it is important for local governments to identify their target users and the needs of these users. Maumbe et al. (2008) argue that e-government services must be inclusive and people-driven

if they are to address the needs of the residents. As previously identified by Wang (2014), there is also a relationship between value and the other two core concepts of effectiveness and alternative sources.

This study identified a relationship between alternative information sources and user needs. This relationship was important in the context of this study because the data suggested that this relationship influences the use of Smart City services. The relationship is consistent with Wang's (2014) framework. The data suggested that if residents believe that sources other than Smart City services address their needs, they will probably not use the Smart City services. This argument is supported by Kaisara and Pather (2011) who identified that residents will use alternative sources if these alternative sources address their needs. Alternative sources include social media platforms, telephone calls, newspaper, other news forums, and physical communication with people. The data suggested that alternative information sources depend on the types of need the residents are exploring. There may be several alternative ways of addressing certain needs. For example, if a resident has a need to obtain general information about what is happening in the city, there could be several ways of addressing this need, for example listening to radio or reading local newspapers

6.10.2 Relationships between Wang' (2014) concepts and Additional Concepts

The data suggested that for the effective use of Smart City services, the three additional core concepts, namely, awareness, access, and trust, must be addressed before the four core concepts represented in Wang's (2014) framework, namely, effectiveness, user-needs, value, and alternative information sources, are considered. This however does not suggest that the additional concepts are the most important concepts in the model but merely that it is imperative that the residents are first made aware of the services, they have access to these services and they trust the services before they are able to assess their effectiveness and value and their need for such services and also identify whether alternative sources would address their needs more efficiently than the government e-services. Thus, it becomes clear how the additional core concepts extend Wang's (2014) framework. Each of these relationships is explained.

In addition, the data revealed a relationship between awareness and the other two additional concepts of access and trust. According to the data, the reason for this is that the residents

have to be made aware of the services to enable them to assess the accessibility and trustworthiness of such services.

Relationship between awareness and the core concepts in Wang's (2014) model

The study also identified a relationship between awareness and the core concepts in Wang's (2014) framework. The data suggested that residents need to know about the existence of the services in order to provide them with an opportunity to assess the value and effectiveness of such services, their need for them, and whether or not the services address their needs better than alternative sources. Indeed, Maumbe et al. (2008) identified that in order to facilitate the use of e-government services it is important that future studies raise the awareness of these services. For example, some of the respondents were using alternative sources because they were not aware of the Smart City services offered. In saying:

> "*They can use TV, and when we see this advertisement on TV we will take our phones same time and try to access and see what they are talking about. And next time we will not go to the government department anymore because we will know that we can get information on the websites"*

Baba Khumalo (Line 21) suggests that residents often go to the government departments themselves for services because they are not aware that some of these services are provided on the websites and that they could address their needs effectively by using the websites.

Relationship between access and the core concepts in Wang's (2014) model

The data suggested the existence of a relationship between access to Smart City services and the core concepts in Wang's (2014) framework. This relationship was not evident in past studies because existing e-government models do not incorporate the concept of access (Maumbe et al., 2008). In fact, these models were developed based on the assumption that everyone is digitally connected and, thus, everyone is able to use the technology successfully in order to address their needs. Unfortunately in South Africa, a country of diverse socio-economic status, the privilege of accessing the internet and government websites in order to address needs is not yet enjoyed by all citizens (Kaisara & Kather, 2011). In support of this argument, Peter (Line 5) commented:

"*another thing is I don't stay in the city , I stay outside of the city, so we don't have Wi-Fi, we can only get access to Wi-Fi when we go to places like McDonalds at Southgate Mall, the mall I use*"

A relationship between access and alternative sources also emerged because some of the respondents mentioned that they were using alternative information sources because these sources were more accessible than the Smart City services. For example, some of the respondents used newspapers in order to obtain government information rather than the government websites because they did not have access to the internet and, thus, to government websites. In South Africa, access to the internet is one of the critical issues hindering the use of e-government (Maumbe et al., 2008; Meyer, 2009). It is clear from the argument that the lack of access drives people to find alternatives and, thus, hinders their ability to assess the value and effectiveness of Smart City services as well as their need for such services.

Relationship between trust and the core concepts in Wang's (2014) model

The data suggested a relationship between trust and the core concepts in Wang's (2014) model. This relationship emerged because it is vital that residents trust these services before being able to assess their effectiveness and value, the extent to which they address their needs and whether they address their needs better than alternative sources. For example, a relationship between trust and effectiveness emerged because the respondents indicated that they were likely to trust Smart City services if they found them to be effective. The existence of this relationship is supported by (Kaisara & Pather, 2011) who argue that an ineffective website is likely to invoke trust concerns for residents. In support of this argument, Andile (Line 32) commented:

"*I have used the SARS one because it is the only one I have a need for. But the other ones I don't trust them* [responds with a hint of mockery and laughs]. *Yah, now it is trust. Because like the thing with SARS is that they are so effective. Yah it is still government but you know other government departments don't work like SARS, unfortunately. So I trust SARS e-filing because I always do my e-filing on SARS. So it is quick*".

The SARS e-filing website is one of the effective e-government systems in South Africa (Mutula & Mostert, 2010). As a result, Andile trusts this service and is a frequent user of the

website. Consequently, he does not use any alternative sources in order to address his e-filling need.

Similarly a relationship exists between trust and value because, as the data suggested, residents are likely to trust the services if they find them to be valuable. This relationship is supported by several studies that indicate that, in order to foster a sense of trust in e-government services, it is essential that the focus is on improving the value obtained from these services (Belanche et al., 2014; Chen et al., 2015). For example, Gilbert et al., (2004) found a relationship between trust and the following value properties, namely, cost saving, pertinence and convenience and also that the relationship influences the use of e-government services. Kafaji (2013) also points out that the perceived value of e-government influences the trust in the information obtained from the e-government services.

6.10.3 Extending Wang's (2014) Framework

Figure 3 presents the extended theoretical framework that explains residents' use and non-use of Smart City services. The additional core concepts are represented on the left of the framework. The core concepts are presented with their sub-categories while the relationships between the core concepts are indicated by arrows. The model was redrawn to show the concepts that had emerged in this study.

The big arrow in the middle shows that the three additional concepts facilitate the residents' engagement with the concepts in Wang's (2014) model.

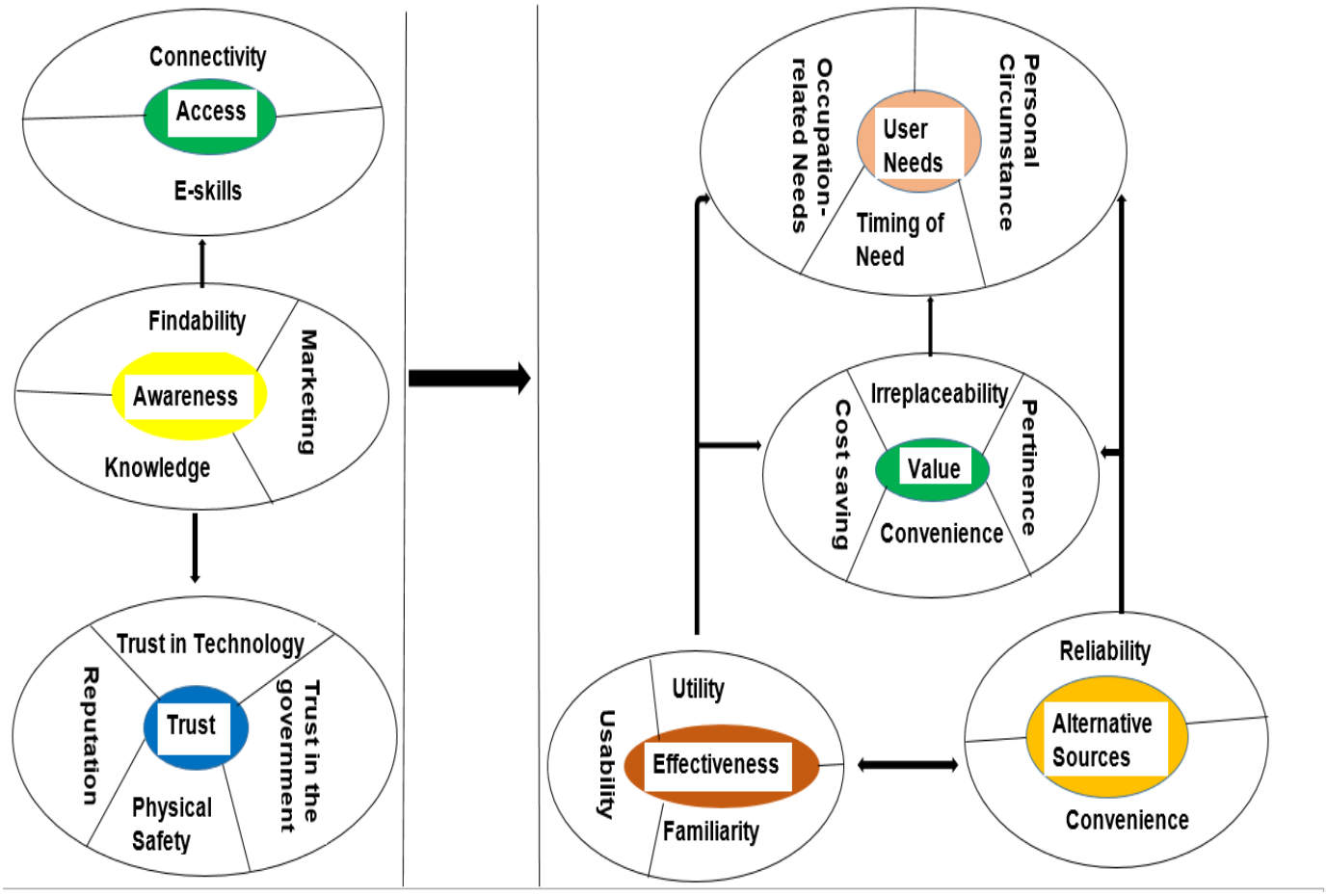

Figure 3: Extended Theoretical Framework that explains why Residents use or do not use Smart City Services

6.11 Conclusion

Chapter six discussed the findings of the study in light of the literature review in chapter two and the additional literature sourced. The chapter first provided an overview of the research questions in order to explain the relationship between the two research sub-questions and the reasons why the concepts which had been identified addressed both of the research sub-questions. The discussion was categorised into the following core concepts, namely, value, user needs, effectiveness, alternative sources, awareness, access, and trust. Each core concept was then discussed. The arguments were supported by relevant theory, existing literature and evidence in the form of quotations from the interview transcripts. The relationships between the core concepts were also discussed. The relationships in Wang's (2014) framework were identified. Additional relationships with the additional concepts emerged. After discussing these relationships, the extended theoretical framework for the use of e-government services

was presented. The framework was redrawn to show Wang's (2014) framework with the additional core concepts. The conclusion to the chapter followed. The next chapter discusses the study's conclusions and explains how the research questions have been answered. The chapter also presents the study's contributions, recommendations, future research directions and limitations.

7 CHAPTER SEVEN: CONCLUSIONS

7.1 Introduction

This chapter presents the conclusions to the study. These conclusions have been broken down into a discussion of the way in which the research questions were addressed, the study's contribution to existing theory, its contribution to practice, recommendations to the government, future research directions and the limitations of the study. The objective of the study was to explain the use and non-use of Smart City services. The study focused on two services namely, government Wi-Fi services provided in the city and government websites. The aim of the study was to understand the reasons why the city's residents either use or do not use the services being investigated.

The discussion chapter provided evidence that the two services (Wi-Fi services provided and government websites) appeared to be similar and, thus, they were addressed together in the discussion chapter and this was purely for discussion purposes. This chapter aims to shed light on the answers to the central research questions and also the research sub-questions, namely, How can we explain the use and non-use of free government Wi-Fi Services? And how can we explain the use and non-use of government websites? The two services are dealt with separately in this chapter according to the two research sub-questions. This however does not in any way invalidate the argument that similar concepts emerged for the two services.

7.2 Answers to the Research Questions

Researchers in the field of Information Systems have been long interested in the issue of the use and non-use of information systems. Initially, these investigations focused on business. However, recently the focus has shifted to government. E-government services have the potential to establish greater equity in society by making services available to everyone at any place and at any time. However, the e-government services also have the potential to create inequity since it is only those people who have access to the internet who are able to use the services. It is especially important that residents are enabled to use the services in order to reap the benefits of such services.

This study highlighted the problem that, although some Smart City services are being provided, residents are not using these services. Local governments in South Africa have put in place enabling policies and made investments in ICT in order to deliver e-government services to the residents and to ensure that government e-services are available to everyone in the cities in question. Some of these investments have been directed at the provision of government e-services and free Wi-Fi services. Nevertheless, despite these efforts, the low use of the internet services available and the government websites remains an issue of critical concern in South Africa and government investments in the provision of e-government services in order to improve the lives of the residents have not yet yielded the desired outcomes.

Models have been developed around what is specific to the use and non-use of the e-government services provided. These models include Wang's (2014) model that explains the use and non-use of e-government services in China. However, the researcher of this study was of the opinion that because of the different contexts, some concepts that are important in the South African context may not be represented in Wang's (2014) model and also in other e-government models developed in different countries.

The study then set out to identify whether Wang's (2014) model could be used to explain the use and non-use of the Smart City services provided in Johannesburg. The aim of the study was to try to understand the reasons why people either use or do not use these services. This aim, in turn, translated into the following central research question: How may we explain the use and non-use of Smart City services? This central research question was broken down into the two following sub-questions: 1. How can we explain the use and non-use of free government Wi-Fi services? 2. How can we explain the use and non-use of government websites?

The study results approve the validity of Wang's (2014) theoretical framework in that all the major concepts in Wang's model, namely, value, user needs, effectiveness of government websites, and alternative information sources, emerged from the data collected for the purposes of this study. The core concepts in Wang's model (2014) and the relationships he identified were found to be applicable in the context of this study. However, there was also clearly a need to extend Wang's (2014) framework. Accordingly, this study added the following core concepts, namely, awareness, access, and trust, to the framework to render it applicable within a Johannesburg context. The three additional core concepts may be said to

be requirements that need to be in place for the core concepts in Wang' (2014) framework to be assessed. In other words, before residents are able to assess the value of the services, the effectiveness of these services, their need for them, and whether alternative information sources would address their needs better than government e-services, they must be aware of the services, have access to them and trust them. This extended framework is important because it provides a holistic framework that makes provision for the heterogeneous population of a city. This, in turn, will facilitate an understanding of the reasons why people either use or do not use Smart City services.

7.2.1 Answers to sub-question: How can we explain the use and non-use of free government Wi-Fi Services?

In terms of the Wi-Fi provided, in instances in which people were using the free Wi-Fi it was found that this was because they were aware that it was available, they knew where to find it, they had access to it, and they trusted the Wi-Fi. However, for residents to continue using it the Wi-Fi had to be both effective and valuable. For example, residents who used the Wi-Fi frequently did so because they found it usable and the internet was quick. The Wi-Fi was also valuable to them because it was free and this led to financial savings.

In instances in which people were not using the free Wi-Fi this was either because they did not know the service existed or, if they knew it existed they did not know where the hot spots were located, they did not have access in terms of resources required to connect to the internet and/or they did not have the e-skills required to use the internet. In some cases residents were not using the Wi-Fi because they did not trust the technology and/or because of a lack of faith in the government. In addition, some residents felt apprehensive about using their devices in public spaces in the central areas of the city. On the other hand, some residents had attempted to use the Wi-Fi in order to connect to the internet but they had stopped doing so because they had not found it effective; the Wi-Fi was slow, it was not easy to connect to the internet or it did not work. Some residents had also found that their alternative sources of connecting to the internet such as personal Wi-Fi and data were more effective than the free government Wi-Fi.

7.2.2 Answers to the sub-question: How can we explain the use and non-use of government websites?

In instances in which people were using the government websites it was because they were aware of their existence, they had access to the websites via access to the internet and they possessed the e-skills required to obtain the information they required and use the e-services. A further reason why residents used the government websites was their trust in the technology and also the information on the websites. In addition, residents were continuing to use the websites because they found them valuable and effective, and they also addressed their specific needs. With regard to being valuable, the websites delivered the services at a relatively low cost and in a timely manner. Some residents felt that using the websites was more effective than travelling to the government offices to obtain information or services.

In instances in which people had not engaged with any of the government websites this was either because they were not aware of the websites, they did not have access to these websites or they did not trust them. Some people trust the personal interaction with a service provider rather and, thus, they choose not to use technology. It may also happen that there has been negative publicity about certain websites and thus people prefer not to use these websites. Some residents had attempted to use some of the government websites but had stopped doing so the websites were not addressing their specific needs. In addition, some residents indicated that they had found alternative information sources such as personal networks, newspaper, telephone calls, and walk-in government service centres to be a more effective and valuable way of obtaining information.

7.3 Contribution to Theory

This study has made several important theoretical contributions. Firstly, the study established that Wang's (2014) theoretical framework does apply in the South African context but that some additional concepts are required. The study confirmed the core concepts in Wang's (2014) framework and the relationships between these concepts. In addition, the study also identified three additional theoretical concepts, namely, awareness, access and trust, which extend the framework.

The study argues that these additional concepts need to be in place before the concepts in Wang's (2014) framework are considered. Firstly, people need to be aware of the services

that are offered before they are able to use them. Where people are not routinely using digital tools and services, it may take a concerted effort to create an awareness of free services and to change people's behaviour so that they use the free services.

Secondly, people need to be able to access the services. The historical inequalities as regards education and access to resources in Johannesburg, as well as the ongoing disparities in wealth, clearly impact on the access to the skills, technologies and services that are required for digitally connected living and, hence, on the ability of people to access other e-services.

Thirdly, the country's apartheid past, high crime levels, and dissatisfaction with service delivery in recent years, have created high levels of mistrust, in general, and of government services, in particular. This means that trust, as the third concept, is an important requirement to the use of e-government services. These additional factors are clearly important in the context of South Africa.

By moving beyond testing relationships in existing information systems models, the study developed a more holistic understanding of the phenomenon of the use of e-government services. The concepts that emerged proved to be powerful in explaining the reasons why residents either use or do not use the Smart City services available. Thus, this study deepened the understanding of the use and non-use of e-government services.

The study does not claim that the additional concepts that emerged are either the only concepts or the most important concepts that should be added to Wang's (2014) theory in order to render it applicable within a developing country context. These three concepts emerged from this particular study and were justified in terms of the literature on e-government services in developing countries. However, there may be other constructs that will emerge from other studies.

This study made an important contribution to theory by employing the qualitative methodology in order to facilitate the discovery of new theoretical elements that were not represented in current theories. Past researchers on the subject of e-government use have made extensive use of quantitative research designs, primarily surveys. However, these previous quantitative studies have hindered the discovery of new theoretical concepts that may provide an understanding of the use of e-government services (Wang, 2014). This study addressed this methodological gap by adopting a different approach and, thus, it has been able to contribute new information to the existing knowledge base on the e-government use

phenomenon. In addition, the study also illustrated the use of qualitative verification strategies to ensure the validity and reliability of the study.

It is anticipated that the extended framework may be used as a guide in order to understand the phenomenon of the use and non-use of government e-services in South African cities and, perhaps, in other developing countries. The majority of models on the use of e-government services have emerged from studies conducted in the developed countries. Thus, the study has made a contribution to existing theory by developing a model based on the experiences of residents in a developing country.

7.4 Contribution to Practice

The study provides an understanding of the reasons behind residents' use and non-use of the e-government services provided. Awareness, access, and trust emerged as additional concepts that influence residents' use of these services. Accordingly, local governments are advised to direct their attention to the various approaches that may be used in order to raise awareness and to improve the residents' knowledge of these services. It is also equally important to provide access to the internet and to create trust between the government and the people.

7.4.1 Recommendations to the Government

The respondents in this study made certain direct recommendations for the City of Johannesburg. This was most eloquently expressed by Andile (Line 69) who explained:

> "*Because I think if they dedicate more time fixing e-services, then they will probably have less people coming to their offices to ask stupid questions at times. If they dedicate a better team to the whole electronic thing, I mean people can communicate with them from home and from their offices rather than being inconvenienced or the service provider working there being inconvenienced by me coming all the way , spending an hour there, fighting with the service provider and causing a scene … So I think when they say they want to move towards being a Smart City, they should want to see less people coming to their offices to ask them … And it is actually nicer communicating with someone online rather than going there fighting*."

The discussed recommendations emanate directly from the study.

The data suggested that awareness is one of the reasons why residents either use or do not use the Smart City services. Jacob (Line17) recommended:

> *"There should be a campaign to make people aware and alert them that there is free Wi-Fi around the city and that it is one of the city initiatives to give back to the community. And they should encourage people to use services that do not require them to go physically to the institution while they can do things online. Because there is Wi-Fi, and the technology and instruments that are currently available can connect to Wi-Fi. People can do whatever they want to do at their own convenient time everywhere. People have to be told, through advertisement or any means that can make them alert. They have to make that campaign to inform the nation. People don't know and they need to be informed. Sometimes we live in different spaces, we work in different environments. We might not be aware of something until someone comes and says remember there is this and you can use this area here to connect to the internet rather than using your own data. Yah, sometimes awareness can be raised through informing people."*

It is clear from this suggestion that there is a need for a strong e-government marketing strategy. If the e-government services are to be used effectively, the focus must be on marketing these services through different channels to make people aware of their existence. It is important for the city governments to ensure that all the residents know about the available services and the benefits of using them. As suggested by the data, the city government should advertise the e-government services on several media channels such as SABC channels, different radio stations, magazines, billboards, pamphlets, and social media. In addition, the city government should conduct awareness campaigns in community centres in various places in Johannesburg, especially in the townships.

In a society in which people prefer to go to the government departments for information and services themselves, it is important to raise awareness and to educate the people about the benefits of using e-government services rather than their travelling to the government departments. This can also be done through marketing the services and informing people about the benefits of e-government. The data suggested a need to change people's behaviour and to increase the use of electronic information tools.

Access to the skills required to use Smart City services emerged as a concept that may explain why residents either use or do not use Smart City services. This, in turn, suggests that local governments should strive to help residents to acquire the computer skills and e-skills that will enable them to use the e-government services provided. The shortage of ICT skills in South Africa is one of the factors that limit the use of e-government services (Mutula & Mostert, 2010). Thus, it is imperative that the importance of computer skills and e-skills is emphasised. A high level of e-skills and computer skills will help more people to know how to use e-government services and give them an option of using these services (Mutula & Mostert, 2010). This may be done through education and training programmes to equip residents with the essential skills required to use the available e-government services. These programmes could be offered in primary schools, high schools and universities. The data provided strong support for this recommendation. For example Jacob (Line 40) stated:

> *"Since high schools are now going the e-learning route, these are some of the things that can be implemented in high schools. And even at universities, there should be e-learning courses or modules where students learn how to use e-government. There is end user computing at first year level, e-services should be part of that. And people should be made aware that if they don't have internet at home there are centres and hot spots around the city where they where they can do their assignments. Kids at school should be encouraged to tell their parents, brothers and sisters at home. Because remember people take information seriously if they see the importance of it. People who are studying should transfer that knowledge. These should be incorporated from high school level because nowadays the city of Johannesburg has embarked on e-learning in schools. And universities should try to put it as one of the first modules. People should learn computers early."*

Mrs Jane (Line 24) also recommended:

> *"They should start at an early level. Now of late our kids are intelligent. They are sharp, they are clever, and they know these things. But more people should be trained and have knowledge about this things.*"

In addition, the data suggested that there is an urgent need for access to e-government services to be affordable for all residents. Access in this context refers to access in terms of internet connectivity as well as access to all the resources required to be able to use both the internet and the e-services provided. It is important for local governments to provide free

internet access points in relevant convenient public spaces such as shopping malls, parks, hospitals, government offices and clubs (Mutula & Mostert, 2010). In addition, city governments must provide access to the internet in the townships of Johannesburg where internet connection is not readily available to the residents. This, in turn, may help to ensure that all Johannesburg residents are granted the privilege of accessing the internet and using e-government services (Mutula & Mostert, 2010). In support of this recommendation, Steven (Line 8) commented:

> "*They should make more hotspots because we use internet, each and every day we would want to know news what is happening around the country. But then we do not know because we don't have free Wi-Fi, we have to buy data in order to have internet and know what is happening in our country so it is difficult*".

Trust emerged as one of the factors that influence the use of e-government services. It is, thus, incumbent on local governments to facilitate a transparent, trustworthy e-government service initiative that people are able to trust. The data revealed that the widespread lack of faith in the government limits the use of the e-government services. It may be that the crime and corruption in the government departments are hindering trust in the e-government services (Maumbe et al., 2008). It is essential that local governments instil a sense of trust in the government and the services provided by the government. Andile (Line 59) commented:

> "*I think, unfortunately, people don't trust the government. In a way it is unfair but, also, the city of Johannesburg e-government people are not doing anything to give that perception you know that hey, we are not just government, this is what we offer you, these are the types of services that we have online, you can trust us*".

The above-mentioned conditions are necessary but not sufficient to increase the use of the government e-services. Once these conditions have been fulfilled it is important for governments to ensure that the services provided are valuable and effective, that they address the needs of the residents, and that the services offered are better that alternative information sources. For example, the data indicated that, even if residents are aware of the services and they have access to them, they will not use the services if they are not effective or valuable, or they do not address their specific needs. The most successful e-government services in South Africa are those that have been tailored to meet the needs of the target users (Mutula & Mostert, 2010. Consider Andile's (Line 69) comment:

"*Because I think if they dedicate more time fixing e-services, then they will probably have less people coming to their offices to ask stupid questions at times. If they dedicate a better team to the whole electronic thing, I mean people can communicate with them from home and from their offices rather than being inconvenienced or the service provider working there being inconvenienced by me coming all the way , spending an hour there, fighting with the service provider and causing a scene. You can just do it electronically and it can be sorted now. So I think when they say they want to move towards being a Smart City, they should want to see less people coming to their offices to ask them. I mean people should engage with technology, if it is faster, and it is more efficient. And it is actually nicer communicating with someone online rather than going there fighting. So the websites are needed for sure. I mean we cannot be a Smart City if we don't have technology."*

Andile's comment suggests that more people would use the services if they were both effective and efficient.

7.5 Future Research

The study brought to light several possibilities for future research. Firstly, comparative studies between various African cities can be conducted to test the validity of the extended framework in different contexts. In addition, testing the extended framework in an African city other than Johannesburg may also be interesting.

Secondly, a qualitative study could be conducted based on the different dimensions of Wang's (2014) model which were not explored in this study, for example, residential area. Gender could also be explored. The aim of such a study would be to compare the experiences of residents in such contextual groups. It would be interesting to identify whether their experiences with regard to the use and non-use of Wi-Fi services and government websites were either similar or different and the extent of these differences or similarities.

Thirdly, future research could investigate how local governments could build the concepts represented in the extended framework into their e-government initiatives. This, in turn, may facilitate an understanding of the way in which local governments could use the concepts represented in the model in order to both improve the residents' use of e-government services and to ensure that the services being provided do not become obsolete. There is a need for

government to establish enabling mechanisms that ensure that the factors identified in this study are addressed fully and future research could assist in investigating how this may be done.

Fourthly, it would also be helpful to investigate the access that residents do have to e-government services. The success of Smart City services depends on active citizens who are able to access the Smart City services when they need to use such services (Giffinger et al., 2007).

Lastly, this study could be replicated by further studies investigating other types of services offered such as transport websites, smart meters and government social media services. This study focused on government e-service websites and free Wi-Fi services only and, thus, other services could also be explored.

7.6 Limitations

Despite its contributions the study has certain limitations that must be acknowledged. However, before addressing the actual limitations, it is important to first highlight the fact that the researcher is aware that data collected from twelve residents in Johannesburg only may limit the generalisability and predictability of the findings. However, generalisability and predictability do not present challenge in qualitative interpretive research (Klein & Myers, 1999). A qualitative researcher is interested in meanings and how people make sense of their lives and experiences. Despite the fact that this may be perceived as a limitation by certain researchers, especially those favouring the positivist paradigm, generalisability and predictability are not a requirements for interpretive research (Klein & Myers, 1999). There was no intention in this study to generalise from the sample. The aim of the study was to identify additional concepts that provided insights into the use and non-use of Smart City services. These concepts could be tested later using a larger sample as compared to the sample used in this study.

The actual limitations of the study include the following. To begin with, the ambiguity in human language presented a challenge in the data analysis. It may have happened that the residents said something but the researcher may not have captured the intended meaning. This is highly likely in view of the fact that the interviews were conducted in English and English was not the home language of some of the respondents. The analysis of the data

depended on the researcher's own understanding and interpretations. Thus, the coding selection of words by the researcher may also have contributed to the ambiguity in terms of the human language limitation. Thus, it is possible that the analysis was affected by biased results.

Another limitation encountered in the study was the challenge involved in conducting qualitative interviews with respondents who were both uneducated and unemployed. This refers to residents who did not have a job and at the same time were uneducated. The concern was that such people's voices are not heard. It would have been interesting to identify the experiences of these groups of residents, although the theoretical sampling in qualitative research does not require representativeness on the part of the respondents (Wang, 2014).

7.7 Conclusion

Chapter seven provided a conclusion to the entire study. The chapter was structured as follows. Firstly, answers to the research questions were discussed. This was followed by a discussion of the contributions of the study both to existing theory and to practice. Recommendations based on the study findings were then presented, followed by suggestions for future research. The study's limitations were discussed, followed by a conclusion to the study as a whole.

This study highlighted that the challenges involved in ensuring that city residents use the Smart City services provided are both complex and multi-dimensional. Within an African context it is not sufficient to focus only on the characteristics of the services provided as enabling conditions need to be in place before residents will be willing to use these services. It emerged from the study that the residents need first to be aware of the services, they must have access to them and they must trust the services before they will be prepared to use them.

Reference List

Ajzen, I., Fishbein, M., 1972. Attitudes and normative beliefs as factors influencing behavioural intentions. *Journal of Personality and Social Psychology* 21, 1.

Alateyah, S., Crowder, R.M., Wills, G.B., 2013. Factors affecting the citizen's intention to adopt e-government in Saudi Arabia. *International Journal of Social, Human Science and Engineering* 7, 80–85.

AlAwadhi, S., Morris, A., 2008. The use of the UTAUT model in the adoption of e-government services in Kuwait. Presented at the Hawaii International Conference on System Sciences. *Proceedings of the 41st Annual, IEEE*, pp. 219–219.

Alawneh, A., Al-Refai, H., Batiha, K., 2013. Measuring user satisfaction from e-Government services: Lessons from Jordan. *Government Information Quarterly* 30, 277–288.

Allwinkle, S., Cruickshank, P., 2011. Creating smart-er cities: An overview. *Journal of Urban Technology* 18, 1–16.

Altheide, D.L., Johnson, J.M., 1994. Criteria for assessing interpretive validity in qualitative research. In N.K. Denzin and Y.S. Lincoln (Eds) *Handbook of Qualitative Research*, Thousand Oaks, CA: Sage Publications, pp. 485–499.

Awuah, L.J., 2012. An empirical analysis of citizens' acceptance decisions of electronic-government services: A modification of the unified theory of acceptance and use of technology (UTAUT) model to include trust as a basis for investigation. Doctoral dissertation, Capella University.

Backhouse, J., Cohen, J., 2014. What is a Smart City for information systems research in Africa? Review protocol and initial results. *Proceedings of the African Cyber Citizenship Conference 2014* (ACCC2014), p. 129.

Belanche, D., Casaló, L.V., Flavián, C., Schepers, J., 2014. Trust transfer in the continued usage of public e-services. *Information & Management* 51, 627–640.

Bélanger, F., Carter, L., 2008. Trust and risk in e-government adoption. *The Journal of*

Strategic Information Systems 17, 165–176.

Bernaschi, M., Cacace, F., Iannello, G., Vellucci, M., Vollero, L., 2009. OpenCAPWAP: An open source CAPWAP implementation for the management and configuration of WiFi hot-spots. *Computer Networks* 53, 217–230.

Bertot, J.C., Jaeger, P.T., 2006. User-centered e-government: Challenges and benefits for government Web sites. *Government Information Quarterly* 23, 163–168.

Besselaar, P., & Beckers, D., 2005. The life and death of the great Amsterdam Digital City. *In Digital Cities III. Information Technologies for Social Capital: Cross-cultural Perspectives*, 66-96. Springer Berlin Heidelber.

Bhattacherjee, A. (2012). *Social Science Research: Principles, Methods, and Practices*. USF Tampa Bay Open Access Textbooks collection.

Bwalya, K.J., Healy, M., 2010. Harnessing e-government adoption in the SADC region: a conceptual underpinning. *Electronic Journal of E-government* 8, 23–32.

Carter, L., Bélanger, F., 2005. The utilization of e-government services: citizen trust, innovation and acceptance factors. *Information Systems Journal* 15, 5–25.

Carter, L., Schaupp, L.C., McBride, M.E., 2011. The US e-file initiative: an investigation of the antecedents to adoption from the individual taxpayers' perspective. *E-Service Journal* 7, 2–19.

Carter, L., Weerakkody, V., 2008. E-government adoption: A cultural comparison. *Information Systems Frontiers* 10, 473–482.

Chan, F. K., Thong, J. Y., Venkatesh, V., Brown, S. A., Hu, P. J., & Tam, K. Y. (2010). Modeling Citizen Satisfaction with Mandatory Adoption of an E-Government Technology. *Journal of the Association for Information Systems, 11*(10), 519-549.

Chen, J.V., Jubilado, R.J.M., Capistrano, E.P.S., Yen, D.C., 2015. Factors affecting online tax filing: an application of the IS Success Model and trust theory. *Computers in Human Behavior* 43, 251–262.

Chourabi, H., Nam, T., Walker, S., Gil-Garcia, J.R., Mellouli, S., Nahon, K., Pardo, T., Scholl, H.J., 2012. Understanding smart cities: An integrative framework. Presented

at the System Science (HICSS), 2012 45th Hawaii International Conference on, IEEE, pp. 2289–2297.

Chua, W.F., 1986. Radical developments in accounting thought. *Accounting Review* 61, 601–632.

Creswell, J.W., 2007. *Qualitative Enquiry and Research Design: Choosing among Five Approaches.* Thousand Oaks, CA: Sage Publications.

Das, D., Burger, E., Eromobor, S., 2012. Indicative planning perspectives for development of Bloemfontein as a smart city in South Africa. *Interim: Interdisciplinary Journal* 11, 1–16.

Davis, F.D., 1989. Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly* 13, 319–340.

Dayson, D.H., 2010. A phenomenological examination of the role of situation awareness in command decision making during the events of September 11, 2001. Doctoral dissertation, Walden University 2010.

De Wet, J., Erasmus, Z., 2005. Towards rigour in qualitative analysis. *Qualitative Research Journal* 5, 27.

Dillon, A., Morris, M., 1999. P3: modeling and measuring the human determinants of information systems usage. Presented at the Proceedings of the 43rd Annual Meeting of the Human Factors and Ergonomics Society, Paper presented at the Annual Meeting of HFES in Texas, Santa Monica, CA: HFES, September.

Dugdale, A., Daly, A., Papandrea, F., Maley, M., 2005. Accessing e-government: challenges for citizens and organizations. *International Review of Administrative Sciences* 71, 109–118.

Etim, A. S. (2010). The adoption and diffusion of information and communication technology in the base of the pyramid population of sub-Saharan Africa: A study of Nigerian university students. *ProQuest LLC*. 789 East Eisenhower Parkway, PO Box 1346, Ann Arbor, MI 48106.

GCRO, 2013. Gauteng City-Region Observatory (GCRO) Quality of Life Survey. Retrieved from http://www.gcro.ac.za/project/quality-life-survey-3.

Giffinger, R., Fertner, C., Kramar, H., Kalasek, R., Pichler-Milanović, N., Meijers, E., 2007. *Smart Cities: Ranking of European Medium-Sized Cities*. Vienna, Austria: Centre of Regional Science (SRF), Vienna University of Technology.

Gilbert, D., Balestrini, P., Littleboy, D., 2004. Barriers and benefits in the adoption of e-government. *International Journal of Public Sector Management* 17, 286–301.

Hall, R. (2000). The Vision of A Smart City. *2nd International Life Extension Technology Workshop*. Paris: Brookhaven National Laboratory.

Hollands, R.G., 2008. Will the real smart city please stand up? Intelligent, progressive or entrepreneurial? *City* 12, 303–320.

Horst, M., Kuttschreuter, M., Gutteling, J.M., 2007. Perceived usefulness, personal experiences, risk perception and trust as determinants of adoption of e-government services in The Netherlands. *Computers in Human Behavior* 23, 1838–1852.

Hung, S.-Y., Chang, C.-M., Yu, T.-J., 2006. Determinants of user acceptance of the e-Government services: The case of online tax filing and payment system. *Government Information Quarterly* 23, 97–122.

Kafaji, M.A., 2013. Evaluating the role of service quality as a mediator on user satisfaction in E-Government Applications'. Problems of management in the 21st century 8, 55–65.

Kaisara, G., Pather, S., 2011. The e-government evaluation challenge: A South African Batho Pele-aligned service quality approach. *Government Information Quarterly* 28, 211–221.

Ke, W., Wei, K.K., 2004. Successful e-government in Singapore. *Communications of the ACM* 47, 95–99.

Klein, H.K., Myers, M.D., 1999. A set of principles for conducting and evaluating interpretive field studies in information systems. *MIS Quarterly* 23, 67–93.

Kogan, N., Lee, K.J., 2014. Exploratory research on success factors and challenges of Smart City projects. *Asia Pacific Journal of Information Systems* 24, 141–189.

Kumar, R., Best, M.L., 2006. Impact and sustainability of e-government services in developing countries: Lessons learned from Tamil Nadu, India. *The Information Society* 22, 1–12.

Lai, C.S.K., Pires, G., 2009. Testing of a model evaluating e-government portal acceptance and satisfaction. Presented at the the Proceedings of the 3rd European Conference on Information Management and Evaluation: University of Gothenburg, Sweden, 17–18 September, Academic Conferences Limited, p. 282.

Lean, O.K., Zailani, S., Ramayah, T., Fernando, Y., 2009. Factors influencing intention to use e-government services among citizens in Malaysia. *International Journal of Information Management* 29, 458–475.

Lee, J., Lee, H., 2014. Developing and validating a citizen-centric typology for smart city services. *Government Information Quarterly* 31, S93–S105.

Lincoln, Y.S., Guba, E.G., 1979. Naturalistic inquiry. *Improving Human Performance Quarterly* 8, 268–276.

Lopez-Sisniega, C., 2009. Barriers to electronic government use as perceived by citizens at the municipal level in Mexico. ProQuest.

Maumbe, B.M., Owei, V., Alexander, H., 2008. Questioning the pace and pathway of e-government development in Africa: A case study of South Africa's Cape Gateway project. *Government Information Quarterly* 25, 757–777.

McKnight, D.H., Choudhury, V., Kacmar, C., 2002. Developing and validating trust measures for e-commerce: An integrative typology. *Information Systems Research* 13, 334–359.

Meyer, D.J., 2009. E-governance in South Africa: Making the populace aware. An Eastern Cape perspective. *Communities in Action: Papers in Community Informatics* 250.

Miles, M.B., Huberman, A.M., 1994. *Qualitative Data Analysis: An Expanded Sourcebook*. California: Sage Publications.

Moon, M.J., 2002. The evolution of e-government among municipalities: rhetoric or reality? *Public Administration Review* 62, 424–433.

Moore Sr, S. B. (2011). Attitudes toward federal government privatization reform policies among federal civil servants and AFGE labor union members within the Department of Defense in Oahu, Hawaii (Doctoral dissertation, Walden University).

Morse, J.M., Barrett, M., Mayan, M., Olson, K., Spiers, J., 2002. Verification strategies for establishing reliability and validity in qualitative research. *International Journal of Qualitative Methods* 1, 13–22.

Mutula, S.M., Mostert, J., 2010. Challenges and opportunities of e-government in South Africa. *The Electronic Library* 28, 38–53.

Naugle, E.D., 2011. Assessing adoption theory in relation to the electronic application for government-sponsored health insurance. Northcentral University.

Odendaal, N., 2003. Information and communication technology and local governance: understanding the difference between cities in developed and emerging economies. *Computers, Environment and Urban Systems* 27, 585–607.

Orlikowski, W.J., Baroudi, J.J., 1991. Studying information technology in organizations: Research approaches and assumptions. *Information Systems Research* 2, 1–28.

Ozkan, S., Kanat, I.E., 2011. e-Government adoption model based on theory of planned behavior: Empirical validation. *Government Information Quarterly* 28, 503–513.

Parasuraman, A., Zeithaml, V.A., Berry, L.L., 1988. Servqual. *Journal of Retailing* 64, 12–40.

Park, R., 2008. Measuring factors that influence the success of e-government initiatives. Presented at the Hawaii International Conference on System Sciences, Proceedings of the 41st Annual, IEEE, pp. 218–218.

Patton, M.Q., 2005. *Qualitative Research*. Wiley Online Library.

Pham, T., 2012. Users' perceptions of e-government services: A study of Danang, Vietnam. University of La Verne.

Phang, C.W., Sutanto, J., Kankanhalli, A., Li, Y., Tan, B.C., Teo, H.-H., 2006. Senior citizens' acceptance of information systems: A study in the context of e-government services. *IEEE Transactions on Engineering Management* 53, 555–569.

Rogers, E. M., 1995. *Diffusion of Innovations*. New York: Free Press.

Russell, T., 2013. Electronic government barriers and benefits as perceived by citizens who use public services. Walden University.

Seidel, J. V. (1998). Qualitative data analysis. The ethnograph v5. 0: A users guide, Appendix E.

Shackel, B., 1991. Usability-context, framework, definition, design and evaluation. B. Shackel and S. Richardson (Eds). *Human Factors for Informatics Usability*. Cambridge: Cambridge University Press, pp. 21–37.

Shajari, M., Ismail, Z., 2013. Testing an adoption model for e-government services using structure equation modeling. Presented at the Informatics and Creative Multimedia (ICICM), 2013 International Conference on, IEEE, pp. 298–303.

Shajari, M., Ismail, Z., 2011. Key factors influencing the adoption of e-government in Iran. Presented at the Information and Computing (ICIC), 2011 Fourth International Conference on, IEEE, pp. 457–460.

Statistics South Africa, 2015. City of Johannesburg Retrieved from http://www.statssa.gov.za/?page_id=1021&id=city-of-johannesburg-municipality on 5 May 2015.

Sweeney, A.D., 2008. Electronic government-citizen relationships: Exploring citizen perspectives. *Journal of Information Technology & Politics* 4, 101–116.

Taiwo, A. A., Mahmood, A. K., & Downe, A. G., 2012. User acceptance of eGovernment: Integrating risk and trust dimensions with UTAUT model. In Computer & Information Science (ICCIS), 2012 International Conference 1, 109-113. IEEE.

Tan, C.-W., Benbasat, I., Cenfetelli, R.T., 2008. Building citizen trust towards e-government services: do high quality websites matter? Presented at the Hawaii International Conference on System Sciences, *Proceedings of the 41st Annual, IEEE*, pp. 217–217.

Teo, T.S., Srivastava, S.C., Jiang, L., 2008. Trust and electronic government success: An empirical study. *Journal of Management Information Systems* 25, 99–132.

Turner, M., Kitchenham, B., Brereton, P., Charters, S., Budgen, D., 2010. Does the technology acceptance model predict actual use? A systematic literature review. *Information and Software Technology* 52, 463–479

Van Dijk, J.A., Peters, O., Ebbers, W., 2008. Explaining the acceptance and use of government Internet services: A multivariate analysis of 2006 survey data in the Netherlands. *Government Information Quarterly* 25, 379–399.

Venkatesh, V., Davis, F.D., 2000. A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science* 46, 186–204.

Walsham, G., 2006. Doing interpretive research. *European Journal of Information Systems* 15, 320–330.

Wang, F., 2014. Explaining the low utilization of government websites: Using a grounded theory approach. *Government Information Quarterly* 31, 610–621.

Wang, F., Chen, Y., 2012. From potential users to actual users: Use of e-government service by Chinese migrant farmer workers. *Government Information Quarterly* 29, S98–S111.

Warkentin, M., Gefen, D., Pavlou, P.A., Rose, G.M., 2002. Encouraging citizen adoption of e-government by building trust. Electronic markets 12, 157–162.

Weber, R., 2012. Evaluating and Developing Theory in the Information Systems Discipline. Journal of the Association for Information Systems 13, 1-30.

Welch, E.W., Hinnant, C.C., Moon, M.J., 2005. Linking citizen satisfaction with e-government and trust in government. Journal of public administration research and theory 15, 371–391.

Zuboff, S., 1988. In the age of the smart machine: The future of work and power. Basic Books.

Appendix A: Cover Letter and Research Instrument

Participation Letter



Date: 27th May 2015

Good Day

My name is Malefa Topo and I am a Masters student in the Information Systems Division at the University of the Witwatersrand, Johannesburg. I am conducting research to understand and explain residents' use of Smart City services in Johannesburg. Smart City services refer to government electronic information and electronic services provided through government and non-government websites.

As a resident in the city of Johannesburg, you are **invited** to take part in this interview. This interview will focus on the use of city Wi-Fi and government e-service websites. The interview will be used to understand your experiences, challenges, and attitude towards these services.

Your response is important and there are no right or wrong answers. This interview is both confidential and anonymous. You are not required to provide your name or any personal information. If I want to quote you in my report, I am not going to use your name; I am going to use a pseudonym (false name) and you are free to choose your pseudonym. Your participation is completely voluntary and involves no risk, penalty, or loss of benefits whether or not you participate. You may withdraw from the interview at any stage.

The interview is structured into two parts and each part consists of about fifteen questions. The interview should take between 30 minutes to 40 minutes to conduct. The survey was approved by the Wits University Research Ethics Committee (Non-Medical), Protocol Number: H15/06/81.

Thank you for considering participating. Should you have any questions, or if you want to see the results of the interview, please contact me on 0737900821 or at 856488@students.wits.ac.za.
My contact details: – 856488@students.wits.ac.za Cell number: 0737900821
My supervisor's name and email are: Judy Backhouse - Judy.Backhouse@wits.ac.za

(Researcher's Signature)
Kind regards
Malefa Topo
Masters Student: Division of Information Systems
School of Economic and Business Sciences
University of the Witwatersrand, Johannesburg

Interview Guide

Opening questions will be used to put participants at ease

Explaining the use of City Wi-Fi

Residents' experience with City Wi-Fi

Used	Not used
1. Have you used the city Wi-Fi before? (Probe: Do you own a computer or Smart phone? If not, where do you use a computer? How often do you use a computer or Smart phone?) 2. What are your needs for the city Wi-Fi (Probe: what influences these needs?) 3. How did you learn about the city Wi-Fi hotspots when you visited for the first time?	6. Have you tried to use the city Wi-Fi before? (Probe: Do you have access?) 7. Do you know that it exists? (Probe: are you aware of it?) 8. What do you use to connect to the internet (Probe: alternative source) 9. Why do you choose to use it? (Probe: is it accessible? Is it familiar? Is it reliable?) 10. Do you know anyone who uses or have used

Used	Not used
(Probe: what encouraged you to use it?) 4. Which Wi-Fi hotspot do you use most? (Probe: Does it always work? 5. Is there any alternative means you use to connect to the internet? (Probe: is it more accessible? Is it more familiar? Is it more reliable?	the city Wi-Fi?

Problems with city Wi-Fi

Used	Not Used
1. Is it or was it always easy to use the city Wi-Fi (Probe: Value: is it, or was it convenient, cost effective? Do you have problems with using the City Wi-Fi? Which parts of using city Wi-Fi are more challenging or problematic? What makes those parts of using city Wi-Fi challenging?) 2. Do you or did you connect faster to the city Wi-Fi	1. Please explain why you have not used the city Wi-Fi (Probe: do you have access? Do you have problems using them?) 2. What do you think are the main reasons for the low use of Wi-Fi provided in the city?

Residents' attitude towards the use of City Wi-Fi

Used	Not Used
1. Do you think it is necessary to improve the use of the city Wi-Fi? If Yes, Why; if No, Why? 2. What measure do you think are helpful for improving the use of the city Wi-Fi?	1. Do you think it is necessary to improve the use of the city Wi-Fi? If Yes, Why; if No, Why? 2. How can we make you and other people who have not used the city Wi-Fi use it?

Explaining the use of government e-service websites

Residents' experience with government e-service websites

Used	Not Used
1. Have you visited the government e-services websites? 2. What are your needs for government websites? (Probe: for what reasons did you	1. Do you know someone who uses or have used government websites? 2. Have you tried to use government websites? 3. Do you know they exist? Are you familiar or

visit those websites? What influenced these needs, was it your profession, age, region, education, income, life affair, timing of your need?) 3. How did you learn about the government websites when you visited for the first time? 4. What government e-service website do you visit often? (Probe: why that website? Do you find it convenient, cost effective?) 5. What functions of these websites do you use? Why? Probe: What specific information were you looking for? What did you expect from government e-services websites? Were those expectations met?)	aware of them? 4. Do you have access to these websites? 5. What do you use to get government related information? 6. Why do you choose to use that source of government information? Is it more accessible/ more familiar/ more reliable?

Problems with city government e-service websites

Used	Not used
4. Did you find these services useful? 5. Was it easy to use them and achieve your goal? 6. Are they always easy to use?	1. Please explain why you have not visited government e-services websites? (Probe: issues around convenience, irreplaceability, and trust. Do you have problems with using government e-services websites? Which parts of using government e-service websites are more challenging or problematic? What makes those parts of using government e-services websites challenging?) 2. What do you think are the main reasons for the low use of government e-service websites?

Residents' attitude towards government e-service websites

Used	Not used
1. Do you think it is necessary to improve the use of the city government e-service websites? If Yes, Why; if No, Why? 2. What measure do you think are helpful for improving the use of government e-service websites?	3. Do you think it is necessary to improve the use of the city government e-service websites? If Yes, Why; if No, Why? **4.** How can we make you and other people use these government websites?

Demographics

Are currently employed? What is your profession? What is your education level? Where do you stay? Gender

What is your age range? 18-34, 35 and above.

Anonymity

If I want to quote you in my report, I am not going to use your name; I am going to use a pseudonym. Would you like to choose your pseudonym?

Appendix B: Ethical Clearance Certificate

Research Office

HUMAN RESEARCH ETHICS COMMITTEE (NON-MEDICAL)
R14/49 Tobo

CLEARANCE CERTIFICATE	**PROTOCOL NUMBER: H15/06/81**
PROJECT TITLE	Explaining the use and non-use of smart cities services in Johannesburg: Residents perspectives
INVESTIGATOR(S)	Ms M Topo
SCHOOL/DEPARTMENT	School of Economics and Business Science/
DATE CONSIDERED	29 June 2015
DECISION OF THE COMMITTEE	Approved unconditionally
EXPIRY DATE	05 July 2017
DATE 06 July 2015	**CHAIRPERSON** (Professor J Knight)

cc. Supervisor: Professor J Bankhouse

DECLARATION OF INVESTIGATOR(S)

To be completed in duplicate and **ONE COPY** returned to the Secretary at Room 10005, 10th Floor, Senate House, University.

I/We fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/We undertake to resubmit the proposal to the Committee. **I agree to completion of a yearly progress report.**

Signature Date

PLEASE QUOTE THE PROTOCOL NUMBER ON ALL ENQUIRIES

Appendix C: Interview Transcripts

1. ANDILE

<u>Explaining the use of city Wi-Fi</u>

Interviewer: Hi how are you?

Andile: I am good thank you, how are you (responded with a little discomfiture)

Interviewer: I am good. No don't let the recording device bother you, it is just for me when transcribing. Because I wouldn't be able to write everything down.

Andile: Okay cool (smiling)

Interviewer: So have you used any of the city Wi-Fi hotspot?

Andile: Yes, I use it every day (responded with excitement)

Interviewer: Oh you use it every day, that's nice. So what device do you use?

Andile: With my phone, I use my phone. So when I come to work I use the bus, so I use the city of Johannesburg Wi-Fi available at the rea-vaya stations. And it is fast, it is free. I can update my software, because you know updating software uses a lot of data

Interviewer: Oh yah hey, so which hot spot do you use?

Andile: The rea-vaya bus station hot spot, the city of Johannesburg one. And there is another one called Bridewave, I don't know if it counts as the city of Johannesburg one

Interviewer: Yah as long as it is available in the city

Andile: Oh okay, I use the Bridewave one as well

Interviewer: Is it also free

Andile: It is not really free; they are doing something like a marketing campaign. So they gave me a voucher for one gig. And I think when it finishes I must buy it or something. So the Wi-Fi is limited but I use it still

Interviewer: Oh okay, so what do you use the city of Johannesburg Wi-Fi for?

Andile: For everything, but mainly to update software on my phone. And for reading on other apps, I have reading apps, so I use it for that as well

Interviewer: So you use it mainly for things that use a lot of data?

Andile: I use it for things that require a lot of data, because I wouldn't want to buy data every week

Interviewer: So what influences your need for this Wi-Fi? Would it be to save money?

Andile: Not only to save money, but also availability and because it is quick. You know like sometimes in Soweto, MTN network is bad. So it is good to get Wi-Fi that is fast and quicker, so yah I prefer it because of that actually, besides saving, the speed of it.

Interviewer: Oh okay, that's understandable. How did you learn about it?

Andile: Uhm! How did I learn about it? Okay, I follow the city of Johannesburg on twitter, so I saw on their twitter feed that there is free Wi-Fi at their bus stations. And then I tried it out. But I was like okay, but it does not work. And then I twitted them. And they said, No it works at certain stations, but we are doing the rollout quickly. So they did the rollout and then yah, that's how I found out about them.

Interviewer: So what encouraged you to use them?

Andile: Thing is when you wait for a bus, you know a bus takes time to come, so you must entertain yourself while you are waiting there. So mainly it was about entertainment while waiting for the bus to come. The Bridewave one I use it because I have their voucher so I might as well finish it and not waste it.

Interviewer: So which hot spot do you use most?

Andile: The city of Johannesburg one, the Rea-vaya station hot spot

Interviewer: Why that one?

Andile: Because I am there most of the time, I take the bus there. Like on average you would probably wait for around 10minutes for a bus to come, if you are lucky. So you would want to sit down and be comfortable, and Wi-Fi there is free, you can just switch it on and use it.

Interviewer: Yah, so does it always work?

Andile: 95% of the time it works

Interviewer: Oh that's nice, people should know

Andile: People know, because if you pass by the Rea-vaya stations, you will always see young people with their phone and their laptops, closer to the station, like 10 meters away from the station. They are there because they are connecting to and using the Wi-Fi there. So they know. You always look and be like Ae! Maan, why is there always young people here

Interviewer: Oh okay, which station is this?

Andile: The one in diepkloof, soccer city, FNB stadium. I can take you one day if you want, you will see them there, they are always there, everyone without a fail, they are there. On weekends, you will find most people them there

Interviewer: Yah, I should go there. So is there any alternative means that you use to connect to the internet?

Andile: Yah, I have a 3G card, and my data bundles

Interviewer: Which means of connecting to the internet do you prefer?

Andile: If I had to choose I would take the city of Johannesburg one, yah like it works. They must make it available around the whole city (sounding excited), like the city of Tshwane

Interviewer: Why would you choose it?

Andile: It is accessible, it is fast, it is free, even though we pay with our taxes(Laughs). But yah it is accessible it is fast. I mean like that is always what you want from your internet connection, speed and reliability. And the city of Johannesburg Wi-Fi has that. And it is better compared to other networks, your Vodacom's and your MTN's. I mean those guys are slow hey, but the city of Johannesburg one is fast and it is always there. And people use it, they trust it

Interviewer: So you always connect immediately?

Andile: Yah, the minute I am close to a station, I switch on the Wi-Fi on my phone, then I think after like 2 seconds it connects

Interviewer: Oh that's nice, so if you were to critic it you would say nothing?

Andile: I would probably critic it and say it is in limited places. But besides that I wouldn't critic it. Yah, for now I wouldn't.

Interviewer: Okay, so do you think it is necessary to improve the use of these hot spots?

Andile: Yes they should (sounding excited) because thing is, you know Joburg has this thing of being a world class African city, so if they want to be a world class African city, they should improve their city Wi-Fi. I mean the city of Johannesburg sees itself as a world class city and if you look at other world class cities, they have internet connectivity, Wi-Fi around the city. So I think it is important that if they want to move towards being a Smart City, they need to roll-out Wi-Fi more, in other places. If you look at studies, one of the main reasons why people in Africa don't use internet is because it is expensive and it is not available. So if you have free Wi-Fi then the whole notion will not exist anymore and people will also use government e-services. Because people don't use government e-services because they don't have connectivity. So they if they roll-out free Wi-Fi, especially to townships and rural areas, it will help the government to connect to the people on an easier basis. Because like if you have complaints I mean I complain a lot ne, I tweet a lot to the city of Johannesburg and they respond quickly on twitter, because we have that whole connectivity thing, we are connected, we can communicate. So if more people have access to the internet, then they can also communicate with the government and the government can tell people: look if you have problem with maybe service delivery, you can post your complaints on-line, then we will attend to it.

Interviewer: Yes, that's true, so in your opinion, what measures can they take to improve it?

Andile: I think for now they need to first identify areas where they can roll-out free Wi-Fi and test it out. I think they should maybe start with the townships first, like start in Soweto. They should start rolling it out in the townships, see how it works. Because I think if they introduce it to more people, it might become slower because of more people using it. So they should also increase their broadband, its capacity, then I would love the city of Johannesburg Wi-Fi more

Interviewer: Do you have worries of trust when you use the city of Johannesburg Wi-Fi network? Like when having to provide your credentials?

Andile: Ah No! Because thing is, let's say you use Wi-Fi in Sandton, that can also be hacked. Even if you use your own data, you can also be hacked. So I don't buy into this whole argument that because it is government Wi-Fi then people will hack into it. You know if you are just careful with your phone, and you don't save your passwords then no one will hack into your accounts. Because you can use internet network from Vodacom you can also get hacked. I think people think because it is government then people will steal their staff. But I think for now I can trust them, they haven't given me reason not to trust them. if they gave me reason not to trust them then I wouldn't trust them

<u>Explaining the government e-service websites</u>

Interviewer: Oh okay, thanks, we can now move on to e-services. Have you used any of the government e-service websites?

Andile: I have used the SARS one, because it is the only one I have a need for. But the other ones I don't trust them (responds with a hint of mockery and laughs). Yah, now it is trust. Because like the thing with SARS is that they are so convenient. Yah it is still government but you know other government departments don't work like SARS, unfortunately. So I trust SARS because I always do my e-filling on SARS. So it is quick, I don't have to stand in the line, and you hardly hear stories that someone did their e-filling with SARS and it got messed up

Interviewer: Have you heard bad stories about the city of Johannesburg websites?

Andile: Yah, for the city of Johannesburg, the whole billing crisis, Ae yah, it makes one not to trust them hey.

Interviewer: Was the crisis directly related to the city of Johannesburg websites?

Andile: Yes because it was Joburg billing. I don't trust the website based on the stories that I have heard, not necessarily based on experience. Maybe I should use it and give it a try, on a personal level

Interviewer: So it lack of trust in the government or lack of trust in the websites?

Andile: Uhmm. I trust SARS, and SARS is government. So I don't trust.... (Pauses to think deeply) uhm...

Interviewer: Are you taking SARS separately from the government? treating them as a separate entity?

Andile: Yah, even though I should view them the same because it is the same thing, all government. But like SARS is super efficient so I trust them

Interviewer: Oh okay, so you haven't used the city of Johannesburg website?

Andile: No I haven't used it, I haven't. But there are times when I tried going to the website because I wanted to do something but I couldn't find what I was looking for. Well I found the document I was looking for but it was outdated. My problem with government websites is that when you go on their websites some of the staff is not relevant for you at that moment in time

Interviewer: But they do have relevant information you know, like information about events in the city and taxis around the city

Andile: Really? (Sounding surprised), I must go explore. For now I have not tried them because I don't see the need. Maybe if I saw a need I would have tried. Or maybe if they market themselves properly, I think that is why most people are not using it. Because I think people would want to know what is happening in the city. But then if they are quiet, the city of Johannesburg, and don't tell us then people will not be active and go on the websites. It is a challenge

Interviewer: Oh okay, I understand. So do you know someone who has used the city of Johannesburg websites?

Andile: Nah, No

Interviewer: Do you think this websites could be useful?

Andile: Yah, for sure, because I am the type of person who, if I have a query I don't like calling and asking what is happening. I want to send something electronically via electronic services. Like I would want to use the government websites to communicate with the government because I know that I can do it in the comfort of my home or in my own space. I don't have to go there and queue for 2 hours, I can just send my query quick quick via the websites. So one day I will see a need for the websites. And also they should improve it because Joburg is advertising themselves as a tourist destination. So like if you are a tourist and you are from other countries in the continent or all over the world you would want to see what is actually happening in the city, like transport in the city, and tourist attractions. So the websites are definitely useful

Interviewer: If you were to have a need for the websites, what would it be? And what would influence your need?

Andile: Okay, I would use it for billing, or if I had a complaint to make about the city

Interviewer: Oh okay, do you know they also have a complaint forum on their websites?

Andile: (Laughs) But you know when you send complaints through these forums they don't get back to you. Okay, let me not judge because I haven't used this one. But sometimes it doesn't work. You know the reason why their twitter is efficient and the websites are not, like the city of Johannesburg when you tweet them and say: hey but what's happening why is my electricity off, why is there no water, like they answer you quickly. But then if you ask that question through their websites, they will take like two days to respond. Like Rea-vaya, you know Rea-vaya we always complain about Rea-vaya drivers on twitter, but they never respond to us. They

never even retweet and say something. So I think if there could be consistency in how the different departments under the city of Johannesburg work, then I think people would trust it more. They can even learn from the city of Johannesburg twitter. They must have the same implementation team or strategy, and then I would use it

Interviewer: oh okay, I understand. Please tell me more about an instance where you tried to use them. Like why were you trying, and why did you stop?

Andile: It tried for Rea-vaya, there was a strike so I was trying to check if the city of Johannesburg has updated information about the strike, like when is it going to end, you know, and when the strike ends what routes will be coming back. So I went to the website and I was like ah, these people, this information is not updated. They still tell you what Rea-vaya is, but there was nothing really specific about the strike and progress of the strike. So it was really frustrating. And then I tried sending them queries online, till this day I am still waiting for a response.

Interviewer: (Laughs) okay, so would you say you are aware of them though, and aware of their functionalities?

Andile: I am not aware of all the functionalities they have, but I think the once I want to use I know that they are available. But I am sure if I spend more time I would discover more functionality

Interviewer: So uhm what other means do you use to get government related or city related information?

Andile: I use twitter, newspapers; I hardly listen to the radio these days, so yah I think that's it

Interviewer: Do you ask around?

Andile: A.a No, oh I also read the government posters as well, when passing by them. But yah, mainly it's through twitter because I follow a lot of government agencies on twitter. And they always update regularly

Interviewer: Oh I see, so why do you choose that twitter?

Andile: It is accessible and it is fast. I think now they realized that the mindset of the people has changed. People want information like at the tips of their figures. They don't want to go to some government department to find information. If I am on twitter I want to see like what government is doing, and their services and events that are coming up.

Interviewer: So would you say the website was useful when you tried it?

Andile: No, No. And it was not user friendly

Interviewer: Okay, Please explain why you are saying it was not user friendly?

Andile: I think first ne, a website should captivate you, and you should be like WOW! Now we are talking. But sometimes I look at the city of Johannesburg website and I am like hae! No like the city of Johannesburg website is too plain. It is like white, I think it is still white and orange, something like that. And sometimes the links are outdated and then when you try to communicate with the city of Johannesburg people through the website they don't respond

Interviewer: So would you say you don't trust it?

Andile: I mean like there are other websites that I don't trust but I still go back to them, because they have that thing you know, they have that attraction that pulls you to it. And you don't really trust it but you still come back to see what they have. But the city of Johannesburg website is like you don't trust them but they also don't attract you to come back. They don't have that thing you know, like that website thing

Interviewer: Hehehe! What do you mean by that thing, what are they missing?

Andile: It's more like they should have their information updated like on a regular basis. Like twitter, twitter updates itself like every five seconds. Must I give you a news paper example too?

Interviewer: Yah sure

Andile: I read the Guardian, and I think I check it like about 5 or 6 times a day. And each time I check there will be something new posted there. Whereas with the city of Johannesburg website, you might go there twice a week and you will find the same information. I mean there is always something happening in the city. Like if you look at Joburg theatre, there is always a play there. So why don't they have something attractive like where to go, what does the city have

Interviewer: But they still show some of the big events happening in the city, like jazz festivals, cultural things, they are trying you know

Andile: But I think like you know sometimes you are always looking for small events as well, not like these well known festivals, like you want something that is like special and small. Like they must do something for the little people as well. They should be more informed about events around the city.

Interviewer: What do you think are the main reasons for the non-use of these websites?

Andile: Okay, I think the first one is just connectivity, like access. Not everyone has access to the internet on a regular basis. For some people, they only get it when they are at work, school or university. But if they are just there at home, they don't have access to the internet and they need to use their data and data is expensive. So I think the first one is access and I think unfortunately people don't trust the government. In a way it is unfair, but also the city of Johannesburg people are not doing anything to give that perception you know what hey, we are not just government, this is what we offer you, and these are the types of services that we have online. So I think access, marketing as well, and trust. I think those are the top 3.

Interviewer: Do you think it is necessary to improve the use of it and make more people use the websites?

Andile: Yah, Yah, for sure (sounding excited). Because I think if they dedicate more time fixing e-services, then they will probably have less people coming to their offices to ask stupid questions at times. If they dedicate a better team to the whole electronic thing , I mean people can communicate with them from home and from their offices rather than being inconvenienced or the service provider working there being inconvenienced by me coming all the way , spending an hour there, fighting with the service provider and causing a scene. You can just do it electronically and it can be sorted now. So I think when they say they want to move towards being a smart City, they should want to see less people coming to their offices to ask them. I mean people should engage with technology, it is faster, and it is more efficient. And it is actually nicer communicating with someone online rather than going there fighting. So the websites are needed for sure. I mean we cannot be a smart city if we don't have technology

Interviewer: So what can the government do to make more people use the technology?

Andile: I think it is about advertising. Yah, you know like MTN offers rubbish services, but they have great advertisements. You know like when you see an MTN advert, you think like these people offer me rubbish services, but because I like what they are telling me in the advert, automatically I will forget the bad service that the offered me and I will just be focused on what they are saying. So I think with government as well, they need to go on that huge advertising drive. They should just go out there and challenge the perceptions that we have as people. I think if they do that they will find that people will actually use the websites more. And when we do use it, they must take us seriously. If I ask them something, then they must respond. At least they must have a turnaround time like most companies website have. I think most of the websites tell you that they will respond to you in like 48 working hours. But I think with the city of Johannesburg they respond to you in like one working month (mockery and laughs). If they can improve their efficiency you know, and just market themselves well, then I think they will find more people using their websites. Because I really think people want to use their e-services, but because like we don't trust the government, people feel like they would rather go there to government offices and tell them , oh but I am having this problem when are you guys going to fix it?

Demographics

Employed, Profession: works at Studie Trust, Education level: Masters, Stays in Soweto, 18-34

2. BRA GEE

Explaining the use of City Wi-Fi

Interviewer: Have you used the city Wi-Fi before?

Bra Gee: Yeah I have used MacDonald's Wi-Fi, I am not sure if it could count

Interviewer: Yes it counts. For what reason did you use MacDonald's Wi-Fi? Tell me more about why you were using it.

Bra Gee: I had to download some WhatsApp thing, I think the version of WhatsApp I was using was outdated so I needed Wi-Fi service, and so I just stood there and downloaded WhatsApp while I was waiting for my meal.

Interviewer: Do you own a computer of a smart phone? What were you using to connect to MacDonald's Wi-Fi

Bra Gee: My phone, it is a smart phone

Interviewer: Do you normally use your phone to connect to the internet?

Bra Gee: Yes, but I use my laptop most of the time. Does Wits Wi-Fi count as the city Wi-Fi?

Interviewer: No, not really, but we will get there

Bra Gee: Alright okay, keep going

Interviewer: So what are your needs for city Wi-Fi?

Bra Gee: Do I have any need? uhm.....Yeah sometimes you see you might, you know your phone automatically detects the Wi-Fi, but sometimes You know the Wi-Fi is very slow and it is not as effective as the one I get at school

Interviewer: But do you need the city Wi-Fi, sometimes when you walk around in the city do you feel like you need Wi-Fi?

Bra Gee: Yeah, but like me I am more of a data person, I buy a lot of data so whenever I need internet I just buy data, so I never really feel the consequences of Wi-Fi in the city

Interviewer: So you have no need for free Wi-Fi?

Bra Gee: I do, I would like to, but it does not bother me even if it is not there

Interviewer: What would influence your need?

Bra Gee: If I was broke I would need it, since I don't know how that feels like I don't know

Interviewer: hehehehe... So how did you learn about, uhm... you know you said you used the MacDonald's Wi-Fi, how did you learn about it and any city Wi-Fi you might know about?

Bra Gee: Uhm I don't know, I have been to KFC, I have been to debonairness, I have never.... I think maybe I did notice them, but I have never used them. I did not see the notification that Wi-Fi, free open Wi-Fi

Interviewer: But then how do you learn about them?

Bra Gee: My phone detects it, it's like open Wi-Fi detector or something, on my phone, you see (takes out phone and demonstrates something) it detects all the Wi-Fi networks available now.

Interviewer: Oh okay I see, so do you feel encouraged to use them?

Bra Gee: It depends, if I have to use it I will use, but like most of the time I don't need to, like I said if it was a financial reason then maybe I would want to use it

Interviewer: You said you used MacDonald's Wi-Fi, what encouraged you to use that one?

Bra Gee: What the MacDonald's Wi-Fi? uhm.. I didn't have cell-phone banking at the time, so you know it is very convenient to buy airtime on your cell-phone with cell-phone banking. So I just didn't feel like going out to get airtime, leaving Wi-Fi in the shop. And I was already waiting there to buy takeouts anyway.

Interviewer: So do you know anyone who uses or have used city Wi-Fi?

Bra Gee: Yes I do

Interviewer: oh okay do you know why they use it?

Bra Gee: I think it was a financial reason for him, he looks like a broke guy

Interviewer: Oh okay, is there any alternative means you use to connect to the internet? I think earlier you mentioned data?

Bra Gee: Yes, and Wits Wi-Fi

Interviewer: Please tell me more about it? Like data, which network are you on?

Braa Gee: Data? MTN, I buy MTN data

Interviewer: When do you use Wits Wi=Fi? And when do you use data?

Bra Gee: uhm. I use Wits Wi-Fi mostly on my laptop and mostly on my tablet. Because sometimes I perform something that requires a lot of data, e.g. watching a YouTube video, it takes a lot of data, so I cannot take it from my own phone. Because I would not feel like wasting money on data.

Interviewer: Why would you choose to use your data instead of free Wi-Fi around the city?

Bra Gee: When I am out of campus I use my data for minor things such as social networks, Facebook, WhatsApp etc. But if I had to look-up something on YouTube you know like watching a clip for like 5minutes, it takes about 100MB and that costs like 30 bucks so yah.

Interviewer: So would you say your data is more accessible?

Bra Gee: It depends on the amount of data required for the operation I want to do

Interviewer: Remember you said when you are outside Wits you don't have access to Wits Wi-Fi, but then there is still Wi-Fi around the city e.g. bus stops, restaurants. So you said you would rather use your data instead, why?

Bra Gee: Yes, because most of the time when I am outside Wits I am on WhatsApp. So yeah you could say using data is more accessible. I do not feel the need to connect to Wi-Fi just so I could communicate with someone on WhatsApp or Facebook. I mean it does use my data but not much of it. You get me? But if I was to do or watch a video or something that requires a lot of data, I would consider having or using Wi-Fi from the city. I don't know if I made myself clear.

Interviewer: Yes, you are saying it's much easier to use your data for simple tasks?

Bra Gee: Yes, Yes

Interviewer: Oh okay thank you. So when you used MacDonald's Wi-Fi, was it always easy to use?

Bra-Gee: Yah, I think once you get into that radius, I don't know if that is the right term, but within the Wi-Fi zone, your phone detects it and Yah

Interviewer: So would you say it is convenient?

Bra Gee: Uhmm yah, I would say it is convenient, it is accessible. Reliability, I wouldn't say that much because I don't use it a lot. But the one time I used it it was okay, so far I would say my experience with that Wi-Fi is okay. But I have not looked into it into that much detail. So am sure there is something somewhere.

Interviewer: Was it easy to connect to?

Bra Gee: Like yah, not instantly like 'qoin', it took some processing, you know that loading circle, but it was not that bad

Interviewer: Do you think it is necessary to improve the use of Wi-Fi around the city?

Bra Gee: Yes, off course, I mean like take me for example ne, most of the time when I work I am either in my room or in the library, that's why I use Wits Wi-Fi okay. But some people who work in companies and what not, they go out for lunch and they still want to do their work while they are there. So it is convenient for them. I have seen a lot of people who use public Wi-Fi, you know. But for me as a student my work is either in my room or library, and most of the time I use Wits Wi-Fi you know. But if I worked in Braamfontein for instance, it would be a different story. If I go out to KFC, I am still waiting for a business call or typing a report and I want to look up something, I would want to use the Wi-Fi. And I also think the Wi-Fi around the city attracts customers.

Interviewer: Attracts customers? Oh you mean the one in restaurants? Oh okay but you know city Wi-Fi is not only available or provided by restaurants?

Bra Gee: Oh yes, all I am saying is it is an incentive for buying the service or goods being provided. It encourages people to take up the service or buy goods

Interviewer: So what measures do you think would be helpful to improve the use of Wi-Fi?

Bra Gee: Awareness of city Wi-Fi, Yah just aware, and I think they should also try and put up some signs so people can see, okay this is a free Wi-Fi area. Like at Wits, Wits has several Wi-Fi hot-spots, if you are in that area you know you will get full bars and connectivity is much stronger. So they should encourage making hot-spots. You know

<u>Explaining the use of government e-service websites</u>

Interviewer: Do you know any of the electronic services provided by the government?

Bra Gee: Like what?

Interviewer: Are you aware of the city of Johannesburg website?

Bra Gee: No, what does it deal with?

Interviewer: It provides information services like where to get passport information, tourist guide etc.

(Silence)

Interviewer: So you have never used or seen the website?

Bra Gee: Yah, No. No

Interviewer: Do you know someone who has used the city of Johannesburg website or any government related website?

Bra Gee: No, like for tourists? uhmm

Interviewer: Not only for tourists, for residents of Johannesburg. It has a lot of information, like where to get taxis, for example when you want to go to Soweto with public transport and you are not quite sure about your way

Bra Gee: Is it? No, I just go to the rank and look for it, I did not know about the website hey

Interviewer: You can use it hey, like also when you need to find out about routes to certain places

Bra Gee: Oh yah because the city is quite big

Interviewer: Do you know someone who use or have used these government websites?

Bra Gee: Uhm! No, I would have checked it out myself. But then by you just saying it's a Johannesburg website, it sounded like something I don't need. But when you started telling me it has like finding your way around then yah I could use it.

Interviewer: Have you tried to find it and use it?

Bra Gee: No, like I said, I did not know about it up until you mentioned it, so, yah

Interviewer: Would you say you know this websites exist?

Bra Gee: I didn't know they exist, but am sure I would have thought of them. Off course if I had a need for them I would have found out about them. I am much updated myself; it has never presented its self to me, the website.

Interviewer: Do you think you can have access to this websites?

Bra Gee: which ones? The Johannesburg websites? Am sure I have access, Wits Wi-Fi has unlimited access. I have very important websites I like and I get updates on my laptop. I just was not aware of these ones. Like now I am currently up to date with a lot of things, especially current affairs.

Interviewer: mhhh okay, so what do you use to get government related information? Information about the city of Johannesburg?

Bra Gee: But like I know a lot about Joburg already. Besides, I have friends who live in different areas in Joburg

Interviewer: So you use like a phone call to ask people?

Bra Gee: Yah, Yah, but for, for, I remember this one time I had to go to Pretoria, my first time I went to Pretoria, I figured it out by myself

Interviewer: How did you figure it out?

Bra Gee: I used Google maps, and I used the Gautrain, yah and it took me there and I used Google maps when I was there

Interviewer: oh okay, so what about government related information, how do you get this information?

Bra Gee: There is a website called news24, I always get updates on news24

Interviewer: why do you choose to use these sources of information?

Bra Gee: News24 to me it's very uhm reliable, it's also truthful, I don't know if truthful is the word to use but you know, information you get is very accurate, and it's not biased, it does not favor anyone, it just represents

news as they are. And yah, it also has local; I mean it covers local news and international news. You know, and it is very easy to navigate your way around. There is also an archive where you can go and find old posts. It's not like it updates this and tomorrow it's no longer there. I can always go back. Or you could also search news which is related to a specific topic or country, you know, it's more like a search engine. It also has video clips. I think it is very detailed.

Interviewer: okay, I see. Can please explain further why you never felt a need to visit the government websites?

Bra Gee: I always manage to get by without those websites. I just call a friend, they will tell me. Am not saying every place I want to go I know, but most of the time where I want to go, someone has been there, or lives next to the place, you see? So answers are always around

Interviewer: Okay yah, sometimes it's easier to find your answer without calling people

Bra Gee: Off course, yah am sure if I knew these websites existed I would have used them

Interviewer: What do you think are the main reasons of the low use of these websites?

Bra Gee: They do not tell us they exist. How are we supposed to know? I don't know I have never seen the websites anywhere. They can't just sit there on the internet expecting to magically be found. We don't know about these websites, how are we supposed to know about them? Off course if I knew about them I would have taken a look at them, but I don't know.

Interview: oh yah makes sense. Do you think it is necessary to improve the use of these websites?

Bra Gee: Yes, Yes. Joburg is confusing, it's very uhm, yah, especially when you are foreigner or you can't speak Zulu. Even if you can speak Zulu, it is very dangerous. If people can notice that you can't navigate your way, they would take advantage of you, and they could rob you or something. So it is best if you know where you are going, and you just don't ask anyone around. I mean even if you go to an old woman, all over a sudden someone hears you and he is like this person does not know where he is going, you know, and they just follow you. So I think the websites are good, because they are accessible to anyone and anywhere, that is the first important thing, and that would also save you the trouble of getting lost you know.

Interviewer: So how can we make people like you use these websites?

Bra Gee: Let us know, they should at least try and advertise the sites. Am sure there is a form of advertisement they are already carrying out, but obviously it is not working that well. So I think they should try and employ something different, and I mean am sure a lot of people from Wits don't know about it, so it's either they advertise on TV, or YouTube. YouTube is a perfect example. I mean like we are always on YouTube, students, always on YouTube. And every time we play a video there is always that small advert. So if they could play that thing on YouTube, that's fine. TV, no one watches TV, no one has time for TV. So yah I think YouTube is a good way to advertise.

Demographics

Employed part-time, Profession: Research assistant, Matric, Stays in Braamfontein, 18-34

3. MARIA

Explaining the use of City Wi-Fi

Interviewer: Hie, How are you?

Maria: I am fine and yourself Malefa?

Interviewer: I am good. So I am going to ask you questions about Uhm, I am assuming you read my participation letter so you understand what the research is about?

Maria: I did read, like you gave you to me so I read

Interviewer: Oh okay good. So have you used any of the Wi-Fi hot spots around the city before?

Maria: No

Interviewer: No? None of them?

Maria: No, I know about them but I have not used them before

Interviewer: So uhm what do you use to connect to the internet?

Maria: I use my phone, I use my desktop, I use my iPad, I use a whole lot of gadgets that I have

Interviewer: And what network do you use to connect to the internet?

Maria: What do you mean network provider?

Interviewer: Like when you connect to the internet, what internet service provider do you use?

Maria: MTN

Interviewer: So you buy data?

Maria: Oh yes, Yes I have an MTN line, and if I want to get on the internet using my phone, I use, I mean I obviously need to have data on my phone so yes I do buy data to get on the internet because my phone does not allow me to access internet without having data

Interviewer: So why do you choose to use MTN data instead of city Wi-Fi?

Maria: Uhmm (Pause) because, because I rarely go to the city

Interviewer: Oh, so when you are home you use data?

Maria: Wait, hold-on, is this Wi-Fi available anywhere? There are certain spots within central Joburg where you can access it right? I don't stay anywhere near the city and I rarely go there, so... But I am aware of the hotspots, I am aware of it so yah.

Interviewer: So would you say you are not visiting them because they are not accessible to you? Because you don't live in central joburg?Am I interpreting you right?

Maria: Uhm... Well I wouldn't say not accessible, it's just that I haven't explored that option because I am not usually in the vicinity where it is available. You understand?

Interviewer: So would you say you have tried to use it?

Maria: To use it? No. I don't really trust Joburg central, I mean I know that there is a bunch of security guards, I know that there is police, even the spots where you can access the Wi-Fi itself, they are pretty much safe. But I still have that in my mind that someone is going to come and snatch my phone and run away with it while I am waiting there trying to access Wi-Fi. So am not so keen on carrying any gadget when I am in Joburg central.

Interviewer: So how do you know about these hotspots? I understand you said you are aware of them

Maria: Yah I have read about it, I have read about it in the newspaper, I have heard about people that have used it, Uhm a lot of people talk about: have you used the Wi-Fi hotspots in town and things like that.

Interviewer: If you were to use the city Wi-Fi, what would you use if for?

Maria: I think it would definitely be to access the internet, and uhm what I mean to access the internet it would probably be to access my own things. I rarely use government services or what do you call it, municipal things or city utilities and things. I don't make payments through that so I don't need to have access to them. If I were to access it I probably would access it if I wanted to know where a certain Hotspot in Joburg that I don't know about is. If not it would definitely be personal staff

Interviewer: So I am particularly interested in personal staff, when you say personal staff, what would influence that need? Would it be your profession, education?

Maria: Uhm, well look, I am a student, I live in Joburg, I think I would use it for leisure, If I wanted to find certain things about where can I go to chill with my friends, If the need came for me to chill in Joburg central hehehehehe okay. And also if I wanted to find information about where is the government, I mean certain government services I don't know. So I would use it for leisure but I would also use it for my studies as well. If I wanted to know something about the city which I can use within my studies, obviously I would want to use it. Uhm I think I would more use it for information about Joburg, not necessarily very personal things, not really No. Because it is public, so I would use it for public type of information.

Interviewer: So you would say you don't trust that the whole network is secure?

Maria: Yah! I mean I don't think that it is very secure. I mean thing is if it is open to the public then chances are that they monitor it. Sometimes if I am accessing a public network, I am thinking that if I access my banking profile using that, maybe someone can hack into my account or someone can get my credentials *(her voice taking a solemnity tone).* So I don't really think it is safe. But in terms of accessing general information, I think that I would use it.

Interviewer: Oh okay, Do you know anyone who uses these hotspots?

Maria: No, not really

Interviewer: Could you please explain thoroughly why you have not used these hot spots at all? Like main reasons why you haven't used them so far

Maria: Well, I think for me personally is that I am hardly in Joburg central. Or I am never in the vicinity where these hot spots are, usually I am not there

Interviewer: So you mentioned also issues around trust, so is trust one of the reasons?

Maria: Yes, another reason would be trust issues. So if I would have access to it, I would use it for public things or general information. But I wouldn't really use it for personal things where I have to provide my personal credentials like my account information, paying of bills and all that.

Interviewer: So you would you say you find it unnecessary because you are not going to use if for personal staff?

Maria: Uhm not unnecessary, but just that I would use it in certain instances, and those instances are far apart

Interviewer: Okay yah, I think I understand. So do you think it is necessary to improve the use of Wi-Fi hotspots around the city? In your opinion

Maria: In my opinion I think the promotion and to mobilize people to use them is a very good idea because there are a lot of people that would want to use them. For example, if I am looking for a job, these days 70% of jobs are advertised online, and if I have qualifications and I want to apply for a job or look for a job, it would be better, free internet would be very very helpful, it would be a very good platform for me to try and find a job. So yah, I think it is important to increase the use, to make people aware of what you can use them for, and also to make people aware of where are the spots where free internet is available. I mean I don't particularly know of the spots themselves like where they are. But maybe it is because I haven't had interest to look myself, but it is advertised much, I don't think people really trust it. There is a trust issue.

Interviewer: So I see your main concern is a trust issue?

Maria: Yes, Yes

Interviewer: So if the government was to make more people use these hot spots, what measures do you think they should take to increase the use of these hot spots?

Maria: *(Silence, thinking thoughtfully)* uhm... *(Sigh)*. Well the thing is it depends on who they are targeting. So if they are just targeting anybody who finds themselves in Joburg and as long as you have a smart phone, then I am sure a lot of people are using it. Uhmm, people that can't afford to buy data, for example students, high school kids. Those are going to be there the whole time, because we are a generation that we were brought up in technology. We have these things with us, around us, and if I can't afford to buy data every day, off course I am going to use city hot spots. And on a positive light, some students might use it to do their assignments, to do their work, and use it to find information for research.

Interviewer: Oh okay, so the question was, what measure can be taken to increase the use of these hotspots, to make people more active in those areas

Maria: To increase the use, I think, remember I keep repeating myself on trust. So I think people need to be made aware that it is a safe platform. And that they can use it for their personal things. And that their credential will not be stolen. Remember crime is a huge thing in Joburg, and everyone has that at the back of their heads. And if they are told that this is free for everybody to use, but we don't know how safe it is, it might hinder, hence the low use. Perhaps the use of it right now is not very up because of that. But I think, I still think that it is the security issue.

Interviewer: So if I was to ask you what are the main reasons of the low use you would say trust?

Maria: Trust but also knowledge. Maybe people don't know about it, they don't know how it works maybe. They just know that there are hotspots, but they don't know what they are supposed to do with them or where they are

Interviewer: Oh okay

Maria: Yes, they know they are there, we know about it, the city of Johannesburg has implemented this Wi-Fi hot spots, but where are they, and are they safe? People may not be aware of where to go for these hotspots. Do I need to be in a certain place or can it be in the whole of Joburg central, can I access it everywhere? You see?

<u>Explaining the use of government e-services</u>

Interviewer: Yes yes, I see. So now I am going to ask you questions around government e-services. So have you used or visited any government e-service website?

Maria: *(Long Pause)* uhmm No

Interviewer: For instance, there is the city of Johannesburg website; it provides information about the government and Johannesburg. And events, you mentioned earlier that you would want to find out information about events around the city. There is also the Gauteng online website; it covers the whole of Gauteng including Johannesburg. So you haven't used any of them?

Maria: *(Nods her agreement that she has not used them, in a thoughtful way)*

Interviewer: So you haven't even seen them? Or do you know someone who uses them?

Maria*: (laughs)* No... People don't trust the government *(responded with a hint of mockery, then laughs again)*

Interviewer: So you think people are not using government websites because they don't trust the government?

Maria: No well, I would like to think that it depends on ones level of involvement and also what type of job they do. And people are a little removed away from anything that has to do with the government because it sounds like it either does not work or things are not accurate *(Laughs)*

Interviewer: hehehe, oh okay. So do you think they are useful though?

Maria: Yah, I think so yes

Interviewer: Okay, can you please tell me more about why you think they are useful?

Maria: Like you said, they use it as a platform to make people aware. For example, a public institution that provides power to the city of Johannesburg uses that platform to tell us where loading is or will be, how long it will take, and what the schedule is. So that helps and it works. They could help us also plan for traffic. So it does help

Interviewer: Yes, it does help, so why haven't you used the website, because it looks like you know much about it?

Maria: Because I have other means

Interviewer: oh okay, but what would you use it for?

Maria: I probably would use it for *(Pause)* uh, like for bills, I would use it for events, and I would use it for general information as well

Interviewer: So have you tried to find these websites?

Maria: uhm No not really

Interviewer: But you know they exist?

Maria: Yes I do know they exist

Interviewer: How do you know they exist?

Maria: Because people talk about them

Interviewer: So even when people talk about them you are never keen to find out about them?

Maria: Well some of them I have gone to check but I have never had a need to in the last year or two and I haven't used the platforms. Because most of the time I access Google and it pulls out information for me

Interviewer: But Google as a search engine might pull up information about Joburg, if you search for something about the city of joburg, it will bring up these website

Maria: Yes, but I have never really had a reason to go to them. Well I am a student, besides my research part where I have to search what is going on in the city, what type of development plan they have for the city, besides that there is nothing else I am using it for

Interviewer: Okay, would you say you have access to them

Maria: Access? I have access

Interviewer: What do you use to get the government or city related information?

Maria: I would go to the websites if I had that need

Interviewer: But currently, now, how do you get government related information?

Maria: *(Pause)* I go to specific government websites

Interviewer: So you do visit government websites?

Maria: Well I haven't visited them in a while. The last time I was there was the city of Johannesburg website and it was because I was reading their strategic plan for the city

Interviewer: So yah you have used them

Maria: Yes, but I don't use it often

Interviewer: Oh, so but you have used it

Maria: Yes, I have tied it

Interviewer: So you know it, you have visited it

Maria: Yes, Yes

Interviewer: Oh okay, so what was your needs when you used it?

Maria: Uhm, it was more for information

Interviewer: What information specifically?

Maria: Like I said, I wanted to understand the strategic plan for the development of the city of Johannesburg. So I went to their website and I downloaded their plan from there

Interviewer: What influenced this need?

Maria: My studies

Interviewer: How did you learn about the website?

Maria: uhmm, I used my common sense *(Laughing)*. Because I thought a lot of things that we do is electronic, and the government does say they have an electronic platform to which they upload information. And so when I needed something I thought okay, so the government does have an electronic platform, let me go check there. So I checked and I found it.

Interviewer: Do you use the website often or was it only that time?

Maria: Yah, It was only once or twice, and it was for the same thing

Interviewer: So why that particular website? Did you feel like you can trust it?

Maria: Yah, Yah

Interviewer: Was it convenient?

Maria: Convenient, but also I trusted that maybe if they put up something on the website then it is credible enough. That if it has been put up by them maybe the information has gone through a check and challenge process for it to be taken to be true

Interviewer: What functions of the website did you use?

Maria: It was just general information about the city of Johannesburg, and also what they do, contact details, and plans they have in place, what they are working on

Interviewer: Well so you have engaged with the website?

Maria: Well yes that one instance when I went on it I checked

Interviewer: What did you expect from the website? Were your expectations met?

Maria: I think so yah, because I was there for a specific thing, which was to find information about their strategic plan, so yah the information was available so I think at that instance yes, my expectations were met.

Interviewer: Which other source of information do you use to get government related information?

Maria: uhmm *(pause)* newspaper, but mostly websites

Interviewer: Which websites?

Maria: Look, I mostly don't have a need for anything government related, most of the staff that I do is general, not specific to the government here. So I haven't had a need to go to their websites to be very honest. The one instance when I needed to, I went on their site and got what I wanted, and that was it. Okay? So for my profession, my studies, my personal life, I use the internet, but I use other sites not government sites

Interviewer: But what about general day to day information about the city of Johannesburg?

Maria: Oh, it usually feds to me through twitter. Because the city of Johannesburg posts things about the city on twitter, so I get to know about them

Interviewer: So you follow them on twitter?

Maria: Yes, Yes, I usually get information through twitter, for load shedding, my traffic, I use twitter

Interviewer: And government job opportunities? You never interested?

Maria: hmmm No. But then I know, I am aware that if I need to, I can go to their site. The most important thing is I know about their site. I know that there is a platform there, and should it be, I know how to get there, I know where to go

Interviewer: Why do you choose to use twitter, to follow them on twitter? And not view their websites

Maria: Because with twitter I don't need to go and check, it just feeds into my phone. So usually when I go to websites is when I am looking for something. But the reason why I follow them on twitter is because certain interesting things might come up which may not be on the website. Because they don't post little things on the websites all the time. So on twitter, you get feeds, live feeds for the whole day. So you kind of know what is going on

Interviewer: So would you say twitter is easier, it's accessible, you don't need to go find information, information comes to you?

Maria: Yes, Yes *(Sounding excited)*

Interviewer: So did you find the website useful?

Maria: Yes

Interviewer: Would you be a frequent user?

Maria: Uhmm well it depends on what I will be using it for you know, if I am using it for my studies and I need to get government information and that is the only platform that is there, I would use it

Interviewer: So would you say your need for government websites is influenced by your studies?

Maria: It depends on what the need is. So if I am just looking for general information, I don't know, I might use it. It depends what the need is. Whether personal, academic, work one, I might use it. If I need to know who is

the current Meyer in the city of Johannesburg I would go to the website and I would check because I am assuming that their information will be updated

Interviewer: You know what I mean by need, I mean what is likely to influence your need?

Maria: So it would be my school work. Mostly school work, but also my profession, if I wanted to understand something about my job, for example, if I needed to find out who is the minister of so and so, and I need to relate that information to my students, then I would use it.

Interviewer: Okay so when you used it, was it easy to achieve your goal?

Maria: Yah, I think it was easy to navigate, it wasn't so complicated

Interviewer: Was it usable and familiar?

Maria: Usability was okay, it was useable. Familiarity, the website is not something that I am used to, so it wasn't really familiar because it was my first time using it. But it was useable because I got what I wanted. Things were laid out clearly. Yah

Interviewer: So next time when you go back it will be familiar?

Maria: Yes, I think so, unless they have changed things. I haven't been there since last year so I don't know if things are changing. If not, then I would know how to get my way around things.

Interviewer: Did you find it efficient and effective?

Maria: Uhmm…Effective yah, efficient I don't know, it was a once off thing so I don't know how efficient it is. Efficiently would be how quickly they do things. So I have never submitted something for me to be like huh within 2 days I got a response. I have never really paid bills or whatever it is that I need to submit using the website.

Interviewer: Oh okay, what do you think are the main reasons of the low use of the websites?

Maria: I think it is needs, determined my need. Low use might be that they are probably providing something that people feel like they don't need. Well if they do maybe there is lack of efficiency or effectiveness. When people get frustrated with a medium of technology, they don't use it. So maybe people are not using it because there is a frustration with technology, or either efficiency or effectiveness.

Interviewer: And for you, why haven't you gone back to use this website?

Maria: I didn't have a need to

Interviewer: So would you say one factor that affects the use of these websites I need?

Maria: Yes

Interviewer: Do you think it is necessary to improve the use of these websites and make more people use them?

Maria: Well I think with everything, everything needs to be improved. So if people are not using it because it is not efficient and effective, they need to look into that and improve it.

Interviewer: How can they make more people use it?

Maria: They probably need to ask the people they are serving

Interviewer: Yes, that is what I am trying to do

Maria: Oh yah hehehehe, uhm they probably need to pay attention to what complains are. What are the complaints, what are people complaining mostly about, if they have used the platform? If they want to improve the use, people's complaints are usually the answer. What are people complaining mostly about this site? What are people complaining mostly about government e-services? And you always get your answers from your complaints. If people are complaining: this is not user friendly, if they are complaining: I submitted this last week but up to now I haven't received a response. Then there is a problem with efficiency and effectiveness.

Interviewer: So how can we make people who don't use them use them? Like you for example

Maria: I don't think there is anything they can do to make me use it more. The point is, I know they are there, I know they have made themselves available using different channels electronically online. So if I need to go and use them, I will go and use it. They just need to make sure it works

Interviewer: So even if they improve it and add more functionality, you still wouldn't use?

Maria: hehehe why would I want to sit there like it's a game, playing on government websites? *(Laughs)*

Interviewer: I mean for day to day city of Johannesburg needs hehehehe

Maria: You see SARS? SARS is a government entity, and for tax filing, there are times when they open their windows and I have used it, it is quite efficient. But now if SARS every time I am trying to submit something there is problem, I wouldn't use it. Because I would be thinking I am wasting my time here, this thing is wasting my time. SARS does things electronically; they encourage people to do things electronically so you literally want to do things electronically. And they have made the platform in such a way that I can trust it, and also I can use it very quickly, and I can quickly get help if I am stuck. So that is an example of all other government sites that you have to engage with. They need to make sure that if I am stuck or don't know how to use it then I could get help.

Interviewer: Do you think you don't use government websites often because they are replaceable? If you take away twitter, and take away any alternative means that you use, phone calls and all. And they have the websites, would you use them?

Maria: I would be stuck now, I have nothing else to use

Interviewer: So you would use it more if we take away alternative means?

Maria: Yes because that would be the only option available to me

Interviewer: So you are not using it because it is replaceable, and other means are more accessible to you?

Maria: Yes, it is replaceable and the other means are more supportive

Demographics:

Employed, Profession: lecture, higher education, Education level: Honours, Stays in Johannesburg north,18-34

4. ISAAC

Explaining the use of Wi-Fi services

Interviewer: (Introduction) Have you used any of the free Wi-Fi services around the city?

Isaac: Yes I have used the one at Rea-Vaya bus station the one around parkstation, it's not really fast though, at times

Interviewer: What were using to connect? Do you own a computer or smart phone?

Isaac: I was using my smart phone

Interviewer: How often do you connect to the Wi-Fi?

Isaac: Maybe once or twice, I don't use it that much

Interviewer: Okay so what influences your need to use the free Wi-Fi

Isaac: I use it to update my software or when I have software to download, mostly when I download staff, it's easier if I am to download to use Wi-Fi so that I safe my mega bytes. I use it also for latest news

Interviewer: How did you learn about them when you used them for the first time?

Isaac: I heard from a friend, and I was like if it is free let me just connect and see what happens, and how fast it is. Accessing internet makes things easier because nowadays most important information you find on the web, all the answers, sometimes when we are lazy to go through our books and all

Interviewer: Okay so there any other alternative means you use to connect to the internet?

Isaac: I also use mobile data to connect to the internet, but it is also about affordability, if I could afford to get a lot of mega-bytes then I would use my mobile data

Interviewer: So is free Wi-Fi always accessible to you?

Isaac: It's not that easy for me to access free Wi-Fi, but the government is making a good step to try and make it available to everyone. I think it is around 65% reliable

Interviewer: Was it always easy for you to connect?

Isaac: It is not always easy to connect, because sometimes with public Wi-Fi the Wi-Fi is are locked and need password

Interviewer: okay so do you think it is necessary to improve the use of free Wi-Fi?

Isaac: They should have more hotspots and people should have the knowledge that there are hotspots like I didn't know that there were hotspots at the rea-vaya bus stations, my friend just told me recently so I didn't really know. Most of the people are not aware I have only heard it from few people that you can connect there, so I don't think that most people know

Interviewer: So how can they make more people use them?

Isaac: They should first ask themselves whom are they targeting, so like if they are targeting students, they should use channels that students use to advertise the Wi-Fi. They should use commercial channels to let out information and tell people. Even on the news underneath when the news are running just write a message there that there are hotspots down at the bottom of the TV screen where they put news updates

<u>Explaining the use of e-service websites</u>

Interviewer: So now I am going to ask you questions around the use of government e-services websites (explanation)

Isaac: I only know the city of Johannesburg website, I only got to hear about it when I was under the Johannesburg student council, but some of the websites I have never heard of them. So I saw that on the website you get to see updates about what is happening in the city but I don't really use it that much

Interviewer: Oh okay, why don't you use it that much?

Isaac: I don't really think I have a need for it, when I was visiting for the first time I was doing a project for the council, it was school related

Interviewer: How did you learn about it when you used for the first time?

Isaac: I heard about it from the city council, like they said you can access the websites when you need this and that

Interviewer: What function did you use?

Isaac: I was just checking on the updates to check what is happening and what programs they are offering

Interviewer: What other information source do you use to get government related information?

Isaac: Mostly I use other sites, for example for job I will use JobisJob.com, because I have never really heard of other government websites.

Interviewer: So how can they make people aware of the websites?

Isaac: They have to talk about these websites, maybe in the news or something, show them on TV. And again the issue of how people access the websites is quite difficult, because it is us that are supposed to go and seek information so like you only get that information if you are looking for it, if you are not looking for it you will never get it. People don't get out of their comfort zone to try and see what's out there. And the other website I use is SoccerLaduma. com, because they have invented this feature where you sign up for jobs and they send you information and job opportunities. So it could be more helpful for the city of Johannesburg websites do the same, then we could use it

Interviewer: So when you used it, did you find it useful?

Isaac: Yes, I found the city website useful, there is lots of information and projects they are implementing themselves and developments they are doing in other places. And yes I think I can trust the information they have on the websites because this is the city, I think we are counting on the city, they can't just feed us wrong information it is definitely illegal. So I am confident that most of the projects they say they are going to do they will be implemented

Interviewer: In your opinion, why do you think people are not using the websites?

Isaac: I don't think people have enough information about the websites, so if maybe they could have information they will start using it. Because there are some sites that are connected to Facebook, so if the government websites can also be connected to Facebook then maybe more people can see them and use them. They should put information about the websites on the most used sites like twitter and Facebook, because most people nowadays use twitter and Facebook so if they can connect to those kinds of sites then people will start recognizing it. They should also advertise on media, like media is the fastest thing nowadays, just put it out there and explain to the people. And if they could send messages to schools, it would be better, send emails to all the schools that are registered to inform them to teach the kids about the websites. I think it is easier that way; at least you make sure that the message reaches all schools and the teachers will now pass the word to the students.

Interviewer: Do you think it is necessary to improve the use though?

Isaac: I think most of us are also ignorant, we are not doing enough to utilize all the resources made available to us, so people should be educated about these resources, and also the effort should also be coming from us, the once who want those services

Interviewer: You mentioned that some people are ignorant, so how can they make people active then?

Isaac: All they have to do is to raise awareness, the rest is up to us, and they cannot force anyone to do something. The rest is up to us to go and use the resources. And in schools, most of us are not told about this things, so what we learn now in school is that when we finish matric we have to go to university, so if they can give out information about the websites in schools, maybe we can use them to find school, we will be more attentive to this kind of things, because now all we do is study, we want to go to varsity, we don't care about other things. They should provide information, just provide the information then we will work on our paths, whether we want to use the information or we don't want to use the information, they should do their part, and provide information.

Demographics

Unemployed**,** less matric**,** Stays Johannesburg North**,** 18-35

5. JACOB

Explaining the use of Wi-Fi Services

Interviewer: Hi how are you?

Jacob: Good

Interviewer: So I am going to ask you questions around Wi-Fi hot spots and e-services provided by the city. So the first set of questions will be based on Wi-Fi services around the city. Have you used free Wi-Fi around the city?

Jacob: Only the city of Joburg

Interviewer: Yes only the city of Joburg

Jacob: Uhm, my phone was able to show some connections when I was in Noord taxi rank. But I never really used it. I could see that there is Wi-Fi that is available but I never used it, I just saw it appearing

Interviewer: So you didn't connect and use the internet?

Jacob: Uhm, I remember one time I managed to connect, but it was so slow and it was unbearably frustrating

Interviewer: Were you attempting to use it?

Jacob: I was checking its availability and I was checking to play around with it, to see whether it does really connect, whether they are providing the services that they say they are providing that they ought to provide. We hear a lot of things that there is this service and that service so being a person and experimenting to find out. So I was experimenting.

Interviewer: What were you using to connect?

Jacob: I was using my blackberry

Interviewer: So does your blackberry normally work well with other networks?

Jacob: Yah, it connects to Wi-Fi's that are accessible, that I have passwords for, and those that are free. And with some networks it is not as slow as it was with the free city Wi-Fi

Interviewer: If you connected, what were you going to use it for?

Jacob: Uhm, I would use it to check news on other informative websites. It will depend on what I really want to do. But I am avoiding using personal staff and credentials on an open Wi-Fi network. Because I believe in security, I am an IT specialist so I know the consequences of using personal information on open networks like free Wi-Fi. I would rather have a secure platform. I feel like free Wi-Fi is not very secure so I would rather use it to read news, not personal staff

Interviewer: So were you encouraged to use the free Wi-Fi?

Jacob: I have seen it before, and I have heard about the city of Johannesburg Wi-Fi. So it was minor things like let me just check this. So it was like something that I know about so I was checking if that area is covered. And I found that it is covered but the Wi-Fi is not effective

Interviewer: So have you connected to other hotspots around the city of Johannesburg?

Jacob: Uhm, No. I haven't, it's just the coffee shops when you are there. Sometimes they are open and free, and sometimes they are private and need a password. So I have connected to some free once in the shops. I was using it because I was there and I was bored and I needed Wi-Fi. Nowadays Wi-Fi is a requirement, it tends to be a basic need

Interviewer: So the free once in the coffee shop, did it work well?

Jacob: Yes it did work, it was effective but they timed it. I think for 20minutes, it was free for only 20 minutes and after 20 minutes the Wi-Fi did not work

Interviewer: So is there any alternative means that you use to connect to the internet?

Jacob: I use blackberry so I use BIS, my life is easy. I am not using this phones that require lots of data. I use blackberry and it has BIS so it is always on

Interviewer: So what would you prefer? Free Wi-Fi or BIS?

Jacob: If Wi-Fi is free then why not use it? (Sounding excited) freebies! Freebies are welcome

Interviewer: So would you be using it because it is free?

Jacob: I would be using it because I pay tax; if it is free it has to be used. Then when I am being taxed I will be okay because part of my money came to me, I used Wi-Fi. If it is free I will use it. The area where I was connected in it was slow. But if I am in an area where it is fast, I would use it. There are areas where it is fast and there are areas where it is extremely frustrating. For me always when you say free staff I will utilize it

Interviewer: Oh okay, do you know anyone who uses city Wi-Fi?

Jacob: Uhm not really, Right now for me I used it through trial and error where I was and I managed to see if it is available or not. So I didn't know about the existence of Wi-Fi in other places, I will have to check out their websites to check the rollout plans and which hotspots they have. Right now I don't know, I have no idea. Well I know that the city of Johannesburg is aggressive on being a Smart City from Parkstal accouchements

Interviewer: So when you used the Noord city of Johannesburg hot spot, did it give you problems? Which areas of using it were problematic?

Jacob: It was slow. I would also say it should be centered in the taxi rank where there are a lot of movements, and malls, parks, people around those areas have time to look at their phones and use the Wi-Fi. At the end of the day they should put it in places where it is safe and secure and there is tight security. Because you can't just pop up with a smart phone everywhere in the streets while you are looking for Wi-Fi, putting your phone up in the sky to see whether you can connect (responded with a hint of mockery)

Interviewer: So can you give me one of the main reasons why you haven't used the available city hot spots then?

Jacob: I have BIS, so sometimes it does not register to me that I can use free Wi-Fi, I buy data for the whole month. Blackberry is not like other phones where you have to buy data every time it finishes like the android phones and iPhone. Blackberry's capability makes me forget that I use free Wi-Fi

Interviewer: So what can you say about trust with regard to influencing your use of smart city services

Jacob: Well for me, like I said I am a computer specialist, so I am up to date with the current technology trends. I trust that every individual have a taste of what technology they want to use. I trust my blackberry because I know the platform and I know what I want to get out of it. Blackberry enterprise server is always secure and governments have been trying to break into it. Even in India they wanted to force the Blackberry Company to open the server for the government to know data and what people are doing. That gave me confidence that blackberry is secure. Every president uses blackberry if you didn't know about it that is a fact. Because blackberry has its own enterprise server and it is secure. For me if I trust the technology I will use it

Interviewer: So do you feel like even when using open Wi-Fi the government might be monitoring data?

Jacob: As a technical person, Yes, I am always weary about what needs to be out there personally, and I would rather be guarded and protect my personal information

Interviewer: Why do you feel like you need protection from the government?

Jacob: Not only protection from the government but from the hackers and anyone who would feel a need to look into my personal staff, like someone going behind my back to find information about you. That is why I want to feel protected

Interviewer: So are the other city Wi-Fi hotspots accessible to you?

Jacob: I don't' know of them, for now I only know the one at the taxi rank, there is access there. I don't know where others are. I will look up on the internet to check how far is the roll-out then I will know of them and I will be aware of whether I have access or not

Interviewer: So do you think it is necessary to improve the use of these hot spots?

Jacob: Yes, for sure. There should be a campaign to make people aware and alert them that there is free Wi-Fi around the city and that it is one of the city initiatives to give back to the community. And they should encourage people to use services that do not require them to go physically to the institution while they can do things online. Because there is Wi-Fi, and the technology and instruments that are currently available can connect to Wi-Fi. People can do whatever they want to do at their own convenient time everywhere. People have to be told, through advertisement or any means that can make them alert. They have to make that campaign to inform the nation. People don't know and they need to be informed. Sometimes we live in different spaces, we work in different environments. We might not be aware of something until someone comes and says remember there is this and you can use this area here to connect to the internet rather than using your own data. Yah, sometimes awareness can be raised through informing people

Interviewer: What measures can they take to increase use?

Jacob: They should create awareness; they could use media platforms, go to radios, TV, they can advertise, they can use pamphlets, or physically advertise and inform the nation that there is this Wi-Fi roll out project that will help them. Tell people that they can use services that they couldn't reach. Because it is not always easy to go to the government office and find an officer who will help you. If the systems are there and the services are operating there on the technology it is easy to connect and be able to use them

Interviewer: What do you think are the main reasons for the low use?

Jacob: Firstly people may not be using these hotspots because of accessibility. If people don't know how to access the services then it is a problem on its own. Secondly education, people have to have learned how to use these technologies and services. Education plays a role. They can educate people by providing training; people will not know how to use certain services if they are not trained. So they should go to the community centers where they can provide training or give manuals to people who can be able to figure out staff on their own. They should not assume that everyone knows how to use these services. We come from different levels of education. So they should not expect that all people on the ground know how to use these services. Some sort of training needs to be provided, whether it can be done on the radio or a campaign at the community centers, or just demonstrating what people need to do to use the services. There should be field workers in different communities trying to inform people and trying to train them.

<u>Explaining the use of e-service websites</u>

Interviewer: I am now going to ask you question s around e-services, so have you used any of the government e-services websites?

Jacob: I only use the city of Johannesburg one to check the load shedding schedules and the affected areas. I was concerned about load shedding in my area and when it will happen, at what times. Sometimes I use it to find information, for instance, sometimes people will be digging at the side of the road and you don't know what is happening and when you go to the websites you will informed that it is an expansion of fiber, electric cables, or

expansion of other certain cables. So I mean sometimes curiosity strikes me when I see these things and I look up to see what is the activity and how long will the people be there working. Because you find that it is a small project and even if it takes two weeks it is an inconvenience in the area that I live in. And I would see that they are busy but I wouldn't know what they are busy with. So my curiosity seeing things of the ground compels me to the websites to find information. And having being around technology you will know how and where to find information

Interviewer: What influenced your need?

Jacob: It is what affects me on the ground that influences my need to find information. Load shedding affects me, if I am from work I go home and it is dark but when I left they were on, then I will be affected. The following day I will have to inquire about loading shedding, I will go look up the load shedding schedule. Or if the road I use is closed or there is a detour I will have to look and see how long it will be closed and what are they doing with the road, what is the construction about. So whatever affects me on the ground makes me go look up the websites for information. And it is always about where to look up, being educated, and being informed about smart cities, I know where to look what smart cities is. So my education puts me at an advantage.

Interviewer: How did you learn about this government websites?

Jacob: As an IT specialist, I did some jobs that offer us an opportunity to know about government websites. Part of my job encouraged me to know. I learnt about them through my job and through being a specialist. We create websites that encourage public participation.

Interviewer: Which government website do you visit most?

Jacob: Visit the housing development Agency also to see the next project of building free houses for the people, their population analysis, yah, those sorts of things, I engage with interactive e-government sites

Interviewer: What functions do you use most in these websites?

Jacob: For the Housing Development Agency one mostly I look into the search functions and filter to see what geographical areas are being covered. I will use filter to identify where the next project will be. And then I will filter through different municipalities, see population indicators. From my geographical information systems background my interest is to see how they selected their areas, what encouraged the decision makers to make that decision. So I also use the advanced search functionality and zooming maps.

Interviewer: What did you expect and were your expectations met?

Jacob: My expectations were met, I mean I am an expert in that area so I was looking with an eye of saying I know what has to happen, and yes I was impressed with the performance

Interviewer: What other information sources do you use to get government related or city related information

Jacob: I look at the advertising boards, I mean they tell us there that we need to do our returns in July, I use billboards, TV, and Sunday times, I mean print media

Interviewer: So would you prefer websites over this other means?

Jacob: Look, I am an IT person; I would rather have something on the websites. So I don't like going through hard copies and all. Websites are easy

Interviewer: So do you find them useful?

Jacob: For me it depends on how interactive and dynamic they are. If it is just an information website then sometimes I get bored. Sometimes we need dynamic websites to see more. But yah, they are very useful, the information is useful and I get informed of what is going on.

Interviewer: Do you always think like you can trust the information?

Jacob: (Laughs) No, look, I mean government, they announce something in advance and they postpone. Sometimes you have to check if things are still happening. So I don't buy the story when I see it for the first time, when I see a public notice. And when you make a follow up to find out, you find that people in charge are on leave and you find these acting people, I don't like to deal with acting people. Because sometimes you have questions that you really want to understand, and you need to ask them to the real guy, so this acting guy will always say they will transfer your message and it never gets there. So I don't feel like I can trust them

Interviewer: What motivates you to be a frequent user?

Jacob: Look I am a researcher, I am always in front of the computer, I am not always out there. The only means for me to get current affairs is to go to the websites; this is what motivates me to use them. Because sometimes I will be busy doing my work. I find the websites easy in that way

Interviewer: Was it always easy for you to achieve your goal?

Jacob: It depends on what I need to do, but most of the time it was easy to achieve my goal. They give me the results that I am searching for. Well there are times when systems are down but that are general things. The information is there on the websites the main thing is to utilize it where it fits you. Even though sometimes you don't trust it, you just have to see how you use it.

Interviewer: Do you think it is necessary to make more people use them?

Jacob: Yes, it is necessary to improve these services if they have resources. So yes it is necessary to reach people and I see using these websites as one of the ways of reaching people. Because through technology they can now reach people in many different ways to provide services to the people.

Jacob: They should make people aware and provide training on how they can use e-services. Also they should sell these services, tell people the ideas and objectives of e-services, and why they should use them. People now believe in one-on-one interactions, they ask questions and they want to get a response immediately. They should tell people what the turnaround time is when posing queries through websites. They should sell the importance of using e-services and tell people that they can get a response right there where they are instead of using transport money, petrol money to reach offices where they will find the door closed. Objectives of e-services should be well threshed out to the people on the ground. This can be done through TV, or through computer sectors where they engage the people and teach them. It can also be through media.

Since high schools are now going the e-learning route, this is some of the things that can be implemented in high schools. And even at universities, there should be e-learning courses or modules where students learn how to use e-government. There is end user computing at first year level, e-services should be part of that. And people should be made aware that if they don't have internet at home there are centers and hot spots around the city where they where they can do their assignments. Kids at school should be encouraged to tell their parents, brothers and sisters at home. Because remember people take information seriously if they see the importance of it. People who are studying should transfer that knowledge. These should be incorporated from high school level because nowadays the city of Johannesburg has embarked on e-learning in schools. And universities should try to put it as one of the first modules. People should learn computers early.

Demographics

Unemployed, Masters, Stays in Midrand, 35>

6. BABA KHUMALO

Explaining the use of Wi-Fi services

Interviewer: (Introductions) Have you used any of the free Wi-Fi services available in the city?

Baba Khumalo: No I haven't used any hot spot, I don't know about them

Interviewer: Why haven't you used them?

Baba Khumalo: I was not even aware; you mean it is at the Rea-Vaya stations there? No I don't know, maybe it is because I don't use these area around here, I don't stay in the city and I don't travel around here, so I am not aware

Interviewer: But have you heard of anyone who uses the Wi-Fi?

Baba Khumalo: I don't know anyone who uses it, we did try to look for a flat, they were talking about free Wi-Fi but I never really asked the person to find out if she finally used the free Wi-Fi in the flat

Interviewer: What do you use to connect to the internet?

Baba Khumalo: I use my cellphone to connect to the internet, using data, I have a contract with Cell C so yah I am not using Wi-Fi. But Wi-Fi might be good, but like I am saying, we are not aware of it, and it is not accessible. I mean I was not even aware that here! Here! At the Rea-vaya stations it is there, so there is Wi-Fi here?! (Sounding amused and excited). When did they roll it out? (Inquired with curiosity) early this year?

Interviewer: The Meyer actually announced free Wi-Fi rollout; I think it was last year

Baba Khumalo: OHH! (Recalling something) in the past I remember hearing something like that

Interviewer: Yah, so now it a project, it is being implemented

Baba Khumalo: yah I think I do remember hearing something about it, I remember now

Interviewer: So have you tried to use it?

Baba Khumalo: No I have not tried to use it. But now that I know it is here I can use. So I can switch off my data and save my data? (Sounding excited)

Interviewer: Yes it is free

Baba Khumalo: For sure? (Responded excitedly and impressed) No we were not aware (laughs friendly) yah we were not ohh so it is free? hehehehe okay, No thank you for telling us, we were not aware

Interviewer: So how can they make people aware of it?

Baba Khumalo: They should use the media to make people aware. And in busy places like this one (pointing to the park) public spaces, they should advertise. Because you see like with the government, they have good policies but you see a lot of people don't know about them (sounding serious and concerned). The policies are good but communicating them to the people and implementing them is poor, that aspect of it is very poor.

<u>The use of government websites</u>

Interviewer: (Explanation) Have you used any of the government websites?

Baba Khumalo: I have heard about the home affairs one, and I do use it. Because you know home affairs they have done a good job communicating their policy. Like for example, when they announced the use of a smart card they told people. And home affairs you are always forced to access it because in home affairs a lot of things keep changing, and the price of ID's and price of passports keep changing so you are always forced to access that one to get up to date information. With the other websites it depends on the information you need to get. So with the home affairs one I know I can find updates about ID's and passports

Interviewer: But even the other websites also have useful information you know, like budget reports etc

Baba Khumalo: I am not aware of the other websites, I read about some of their plans in the news papers, I never access their websites

Interviewer: But do you think it is necessary to improve the use of these websites?

Baba Khumalo: I think they are important, I mean it could be easy to get information on the websites because there will be no need to ask a person, you can just go through the websites and find everything there. And you can go to the websites anytime

Interviewer: Okay, so how can they make more people use them then?

Baba Khumalo: They should intensify awareness programs, like in this park here put notices around and let people know, because many people like this park because it is safe and clean. So this park can be used to communicate information to a lot of people

Interviewer: What alternative source do you use to get government related information?

Baba Khumalo: The New Age news paper communicates lots of information about the government, so I use it. Sometimes if I want information about certain things I go there physically and ask. But now I know that I can get information about things I need on the websites. May be also before, I took things for granted. Mostly people are ignorant, they don't take things seriously. People feel like they should go straight to the government department to ask and get information they need. But if they advertise these websites in our faces, we will be forced to learn. They can use TV, and when we see this advertisement on TV we will take our phones same time and try to access and see what they are talking about. And next time we will not go to the government department anymore because we will know that we can get information on the websites

Interviewer: So you mentioned earlier that you used the home affairs one, did you find it efficient and effective?

Baba Khumalo: I wanted to find out the latest price of the ID, that was the only time that I used it. But yes I did manage to get through and get information. And the information should always be up to date. It also comes down to paradigm shift, shifting to using the websites when we need something and making it part and part of our lives

Interviewer: In your opinion, what is the main reason that people are not using the websites?

Baba khumalo: They should inform! (Pausing for moment for a moment to let it stick) properly and patiently communicate with people, because some people are still used to the old fashioned style that if you need information about something you go to the government department to ask. As people, we trust hearing government officials telling us information, so using the websites we risk getting outdated information (responded pensively). But a government official you are asking might say I am not sure let me go and find out for you whether it is still like that. So yes, people always rely on getting it from the horse's mouth, home affairs or any other government department. Because for license information, you will always get people hearing information from the websites but they will say no I want the government official to tell me the procedure, I want to get it from the horse's mouth. We have that mind set, so they should raise awareness and change the mindset

Demographics

Unemployed, High school education, Stays at Johannesburg east, 35>

7. MAX

Explaining the use of city Wi-Fi

Interviewer: So how are?

Max: I am okay

Interviewer: So I am going to ask you questions around government Wi-Fi around the city and government e-services. The first set of questions will be about Wi-Fi hotspots. So have you used any of the Wi-Fi hotspots provided in the city?

Max: When I am off-campus the options are there at mug and bean and at wimpy but I am there for the purpose of eating not for Wi-Fi, so I will have to say no. I know the options are there but I just don't use them.

Interviewer: So what do you use to connect to the internet?

Max: Uhm if I am not at campus my sister where she stays she has like a line, an internet line where there is Wi-Fi so I use that one. Either than that I use mobile data, I buy data.

Interviewer: Why do you prefer to buy data instead of using free Wi-Fi?

Max: Thing is I buy data because I know when I am going to use it, so If I am in a city hotspot where Wi-Fi is available, chances are I am not going to use it because I am not there to be on the internet. Like when I am at the mall, I am not there for internet, I am there for shopping. And when I am in a restaurant, I am usually with a person, I am not there alone, and so I will be interacting more with the person as opposed to being on the internet, on social media and staff. At that point in time when they are available, I don't really need them. And for notifications and urgent emails, the cost of using data is so minimal so much that it is like it is costless, it does cost me but not so much that I would be upset to loose. If it was expensive then chances are I would wait to use free Wi-Fi

Interviewer: Have you tried to use the free Wi-Fi though?

Max: I have tried to use it once in restaurants. It connects but there is still a process where you have to ask for the waitress for passwords and staff, so it's like it's too much work and I would rather not. It is not easily accessible. It is accessible because it is there and it connects not easy, you still have to work on it so, it's a hustle

Interviewer: But are you aware these hotspots exist in other areas like the rea-vaya stations etc?

Max: No I don't know they exist, I know Gauteng they have apps and all but in terms of connectivity I don't know I just know in a private space like restaurants where Wi-Fi is just an extra service that's where I know of. But in general like around the city, I don't have any clue.

Interviewer: If you were to use it, what would you use it for?

Max: In a sense I would only use it in that current situation like if I need to check the bus schedule for gautrain I would probably use Wi-Fi for that schedule, like in that context.

Interviewer: Would you be nervous to use it for personal credentials like banking details?

Max: Not as much, it's more about how the information between me the bank gets along. If the people who own the Wi-Fi channel take my details then I would start to worry. But I don't think they do. ?

Interviewer: Why haven't you used these hot spots though?

Max: I think when you use it there will be connectivity issues, well it will connect but it will not connect often, and you can't really do anything, you can't really update there, so it's not really helping me to actually connect so I just don't use it. There are problems, they do frustrate if it is a free service

Interviewer: Do you think it is necessary to improve the use of these hotspots and make more people use them?

Max: Yes that and they should increase awareness that there is an option to use it. They should improve the process of making it available to people and also improving awareness. It would be helpful especially in a situation where you need the Wi-Fi, like when you are riding Gautrain, you are given these bus routes but you

don't know the route you want, and you always have to go to these particular board as opposed to you accessing it online on your phone and it being at your convenience. So Wi-Fi will just make everything convenient for the traveler

Interviewer: So if they were to make more people use it, what would they do?

Max: They should go on campaigns to make people aware, they must make a presence like here we are and these is what we provide and this is how it will help you. In a sense kind of sell like these is what we do for you and these is how it can benefit you, and just make the Wi-Fi wide-spread so that everyone can have access, opposed to just selected areas.

Interviewer: What do you think are the main reasons for the low use?

Max: Mainly people are not using it because of awareness, and data is expensive and people don't know that they have other options they can use to save their data. Sometimes people get their information at one time and go with it as opposed to having to use Wi-Fi on the road for information. So they avoid information on the go.

Explaining the use of e-services Websites

Interviewer: Have you used any of the government websites?

Max: That I have never used at all, I know that that the city has a website, but that is as far as I know, I though it just a website where you can find information like contact details, I didn't know that you can function on that website. So I didn't know. It's more like I didn't have a need for it, like in my space as a student, I am always in that space where everything need would be in that circle. As a student I don't have any needs for the city Wi-Fi as yet. I find information through Facebook and WhatsApp so I am at that point where I am comfortable with what I have now and I don't want to brunch out. So the e-services I know that they are there, but what I can do with them I am not aware of.

Interviewer: Have you tried to visit them?

Max: No I have thought about it but I have never really committed myself to go and try. I think it was more about time, it seems a bit time consuming out of my normal routine

Interviewer: So how do you get government related or city related information?

Max: I just usually Google and whatever site that seem relevant I choose it, it might be a government site or it might not be but if I find the information relevant then I will just use it. And if anything catches my attention its more form social media, that is where I get most of my information from

Interviewer: Why social media?

Max: Because I can communicate with people who share common interest whereas like in the government website is like for community so there is no specific type of people whereas Facebook there is a specific group of people that I tend to socialize with. And I get information through word of mouth, I just ask people. And with Facebook there is like a mobile app, there is a desktop web, and I have always kind of had Facebook since a young age, and I have always had Facebook with me, so it just something that has been engrained in me. So it goes with some familiarity that I have always had Facebook. If like the e-services were like Facebook and there is that familiarity then I would probably use the e-services websites as well.

Interviewer: What do you think are the main reasons for the low use of these websites?

Max: They should indentify their target market and carter to the needs of their market. They probably do but then now it is not evident. like right now with Facebook, I know what I can get from it and my needs are met, but with the websites I don't know if my needs can be met or not, I just don't know. Because right now it is perceived as a government thing, so it is very formal there is less of a social media vibe, there is no variety, that's how I get my information from Facebook, it goes all out showing everyone that they can come out and play.

Interviewer: Do you think it is necessary to improve the use of these websites?

Max: Yes, they are useful they should have a link of their websites of social media sites, such that if I am on Facebook and I want government information I can just click the link, as opposed to me having to go look for it. They should have a description of what the website does with a link to the actual website that would make things so much easier and helpful. They should also advertise themselves at events that people go to, and tell the people about the websites and let them know that more upcoming events are advertised on the city of Johannesburg website. People are just not aware, If they don't know about it then they can't try it to find out whether they can use it or not. Because I also didn't know about it

Demographics

Unemployed, High School, Joburg South, 18-34

8. MRS JANE

Explaining the use of city Wi-Fi

Interviewer: Hello how are you? So I am going to ask you questions around Wi-Fi services around the city and government e-service websites. Have you used any of the Wi-Fi networks around the city of Johannesburg?

Mrs Jane: Yes, the McDonalds Wi-Fi

Interviewer: What did you use to connect to the internet?

Mrs Jane: I was actually trying to get to my Wits website to renew some books and to read some emails, I was using my phone

Interviewer: How often do you use the McDonalds Wi-Fi?

Mrs Jane: Uhm once in a while, I also use it when I have my ipad

Interviewer: Oh okay, so what influences your need to use it?

Mrs Jane: Sometimes I am not at work and there is an urgent email that I need to read and respond to, so I quickly go to the nearest McDonalds for Wi-Fi because I don't have it at home, then I quickly go to McDonalds to access my emails

Interviewer: So how did you learn about it when you used it for the first time?

Mrs Jane: From a friend

Interviewer: What encouraged you to use it?

Mrs Jane: I think I was encouraged to use it because it is free you know, anyone is able to access the Wi-Fi from McDonalds

Interviewer: So does it always work?

Mrs Jane: Yes yes, I have never had problems so far. But as I said, I rarely use it. But for the time that I have accessed it, it has been working fine

Interviewer: What other alternative means do you use to connect to the internet?

Mrs Jane: You know most of the time I am at work, I only use internet when I am in the office

Interviewer: Okay so when you are at home?

Mrs Jane: At home I don't have Wi-Fi connection, It's only when I use my cell-phone, because I use my mega-bytes, or when I use my ipad taking data from my megabytes.

Interviewer: Which internet network do you use?

Mrs Jane: Cell-C

Interviewer: Which one would you prefer, McDonalds Wi-Fi or Cell-C?

Mrs Jane: The McDonalds one obviously, I would go for that one because it is free, it doesn't have to take anything from me and it is reliable

Interviewer: Was there a time when you used it and it gave you problems?

Mrs Jane: Not really, unless off course if the internet is down

Interviewer: Do you sometimes have security fears when using it? like fear that people might hack into your accounts?

Mrs Jane: It is true hey, they can hack into it. But like I said, I go there once or twice, especially when I am desperate. But otherwise I use my cell-phone data or my network in the office

Interviewer: But do you trust it for your personal credentials?

Mrs Jane: I don't trust it for my personal credentials because people can hack the system. I use it for general information, not for my credit card or accessing any of my banking details

Interviewer: Do you think it is necessary to improve the use of city Wi-Fi?

Mrs Jane: Yes there is a necessity to improve the use of city Wi-Fi and people need to know about it. It needs to be widely advertised because most people may not be aware of it. It would make things easier like if you want to access the home affairs website, SARS and whatever service you need. So people need to know about it.

Interviewer: So what measure do you think they should take to make people use it more?

Mrs Jane: They must put adverts, billboards. Advertise it on TV if possible, newspaper, any media to make people aware

The use of government e-service websites

Interviewer: Have you used any of the government websites or the city of Johannesburg one?

Mrs Jane: I normally don't visit the city of Johannesburg one to be honest; the one that I normally visit is the home affairs one. I visited it because I was training students to show them that they can go to the home affairs website to see their marital status. But for some reason now in July I couldn't find the service online, I think they said it is being reconstructed or something, so I couldn't do that. The only time when I use government websites is when I use the home affairs one, and when I check my traffic fines on the traffic website

Interviewer: What influenced your need for these government websites?

Mrs Jane: For the home affairs one, I was training some high school kids for them to check and know their marital status. Because sometimes you are married on your status while you are not even aware that you are married. At that time my work influenced my need. Sometimes I even check myself whether I am still single or married. Or sometimes I check something like how much does the passport cost now, you know things like that

Interviewer: So you are an active user of home affairs websites?

Mrs Jane: Yah, home affairs and the Johannesburg traffic fines one

Interviewer: How did you learn about them?

Mrs Jane: Uhm, I don't know because I am informed, I am wise, and as professionals we do visit these sites. And it is much more easier to find information in your office than to go out and physically try to get information. So it is quick and easy when you use the websites to find information. Even the contact details, they are available on the websites, if there is something that you want to inquire about, just go to the websites, you will get details and information then it will be easy when you have to phone and make an appointment because you have now browsed the website to get relevant information.

Interviewer: What encouraged you to use the websites the first time you used them?

Mrs Jane: I think it started as a joke, people were jokily saying if you go to the home affairs website, you can see whether you are married or not so we all rushed to it to see our status (laughs)

Interviewer: So what functions of these websites do you engage with more?

Mrs Jane: I check my marital status, I check contact details, I check when I want to apply for passport or if there is other information that I am looking for relating to home affairs, when I want to apply for a birth certificate or all that and for jobs as well.

Interviewer: Where your expectations met?

Mrs Jane: It used to be user friendly as I said, but now for some reason when I try to open it it said it was being reconstructed, so I couldn't get what I wanted

Interviewer: So what other information source do you use to get government related information?

Mrs Jane: If I want to look at government publications like I use government gazettes, If I want to check the white papers, the green papers I also go there. I use radio and newspapers as well

Interviewer: Which means do you find most useful? Websites or alternative information source?

Mrs Jane: Government information is reliable on the websites as well

Interviewer: Do you find these websites useful?

Mrs Jane: Yah, but sometimes the speed of the internet could be slow obviously, but that we don't have to blame on the websites. Otherwise, the websites are user friendly and it is easy to use

Interviewer: Would you keep using it?

Mrs Jane: Yes, I would continue to use the websites, they are easy, and they are easy to know some of the things, people are not aware of most of the things available on the websites. So when you guys interview us, it makes things easier, because sometimes I may not have knowledge about these things, but through the interview I will learn that oh! This is something that I need to know

Interviewer: What measures could they take to make people use it more?

Mrs Jane: Remember we are not all professionals, we are not all educated, and we are not all information literate. So off course there will be challenges, it will not be used hundred percent. It will only be used by people who are able to use it and those that have access to the internet. But those people who don't have access to the internet, they will not be able to use this things. There should be someone who is showing people or training people on how to go about doing things on the websites. People need to use technology. And also they should be encouraged from an early stage, from high school or from junior level. Like if you want to check the bus schedule you can use the websites and this is how you can go about it. You can check what time does the bus leave, or what time does the bus arrive. And even for planes, when to catch a plane, you can go to Wi-Fi to connect and use the websites. People need to be trained. There should be more training and more adverts.

They should start at an early level. Now off-late our kids are intelligent. They are sharp, they are clever, and they know these things. But more people should be trained and have knowledge about this things

Interviewer: So for you, representing your age group, what could be the main reasons for the low use of these websites?

Mrs Jane: You must remember that other people are techno-phonic, they don't like technology. For some people the reasons are that they are afraid of being hacked because now off-late there are cyber crimes. So sometimes it is difficult to convince people. It depends also on the level of understanding

Interviewer: How can we encourage more people of a your age group to use it?

Mrs Jane: We need to spread the gospel. We must keep passing on the information

Demographics

Employed: training officer, Highest education level: Honours, Stays in Springs, 34 and above

9. PETER

Explaining the use of government Wi-Fi services

Interviewer: (Introduction and explanation) Have you used any of the Wi-Fi facilities?

Peter: To be honest I don't use Wi-Fi that much, I don't know if I can even use it, I might know how to connect to it but honestly I have never used it, I prefer using internet data because I have my laptop at home, I have my cellphones and my phone has the BIS service, so I don't actually use Wi-Fi. I do a lot of research one for church things, I am more into church so I do a lot of research for church things and also for work related things, I do a lot of research on the internet to find out what other companies are doing, I am in the gas industry so I do a lot of research in that area. So I use my data

Interviewer: So you don't really find a need to use free Wi-Fi?

Peter: Yah well and another thing is I don't stay in the city , I stay outside of the city, so we don't have Wi-Fi, we can only get access to Wi-Fi when we go to places like Macdonald at South gate mall, the mall I use

Interviewer: So have you tried to use the free Wi-Fi?

Peter: Yah yah, I have tried to use it, in fact Macdonald, that is where I have used Wi-Fi, and it was when I was trying to download games for my children on the tablet I was able to download a lot of games for my children

Interviewer: But would you say you are aware of the free Wi-Fi around the city?

Peter: I am not aware of the one in the city in fact I think I come to the city only once a month, I only come here to bring my wife for a check-up at the doctor , like now I am at Brenthurst clinic now for her check-up

Interviewer: But do you think it is necessary to improve the use of the Wi-Fi and make people use it?

Peter: yes it is good, but not for us grownups (Laughs) but for youngsters, especially students, the city has a lot of students and during our time when we were studying it was very hard to get access to internet and now Wi-Fi is free and easy (sounding excited) you can do a lot of research you can download, you can do anything, so it is very good, but not for old people (Laughs again)

Interviewer: (Laughs) why is it not good for old people?

Peter: But now with us we, besides maybe we don't know how to use it, we have data, our companies offer us the 3G's so you understand, it is easy, why do we have to compete with people that are still studying that don't

have money. So free Wi-Fi is good but for students and maybe for other people who are not working, and maybe for people who are working but don't have free internet like us with 3G's

Use of government e-service websites

Interviewer: (Explanation of the websites) Have you used any of the websites?

Peter: I was checking the Johannesburg one today, I have property in Johannesburg, and so on a monthly basis I visit the city website to check housing developments. And I know I am registered for traffic fines, I check that one, I check also my bills for electricity, and I check the home affairs one now and then

Interviewer: What are your needs for them?

Peter: I mostly use them for personal staff

Interviewer: So how did you learn about them when you sued for the first time?

Peter: errrr! you know sometimes when you dial the city of Johannesburg line when you are calling them, you get this option to dial 1 to do this and then once you press you hold for a long time so if you are using your own phone at home, it uses a lot of airtime it is very expensive, but then if you go to websites and then you click click it is cheap and easy.

The first time when I used them was when I got by bill, I used to get my bill via post, but now they email them to me. So if I have some queries then I check the city's websites, I just go to www on my computer, then I click, the website is on my favorites now. But when I first learned about it was on the bill, the utility bill

Interviewer: But do you think it is advertised enough though?

Peter: errrr no, it is not advertised enough, like when you go to home affairs and you get the form, either at the bottom of the form its then that you will see the website, but you can't just see the advertisement everywhere like there is their websites and all, you don't

Interviewer: Yah, they are not visible. So what were your expectations when you used the websites and were they met?

Peter: With the city of Johannesburg, especially with water and electricity, it is very good. Ever since I have registered, on a monthly basis they sms me what I am owing and what my monthly bills are, what I have to pay, my rates and all. And I can even quickly go and check on the website when I need to know and I think maybe for other services that I need to pay, I can just go to the website and check (sounding confident). It is very very useful, in fact even effective

Interviewer: So what other information source do you use to connect to the internet?

Peter: for government yah I use the websites. To be honest, look at my phone, it is very old, I have an iPhone, I have a laptop but I don't use them that much, I don't get time to use them, Monday to Friday I am at work, Saturday I am at church, Sunday its family time, so I think it would be unfair for me when I have that time to spend with my family to be busy on the internet and staff like that. But I know some of my colleagues they will sleep at 1 am busy on the internet and staff like that. But I don't see that as useful, maybe it's because I am married so they are not married so they have plenty of time to surf on the internet

Interviewer: Do you think it is necessary to improve the use of it and make more people use it?

Peter: Yes they should improve them, yes excellent. You see it is useful for other people who can go and find information. You see our background as black people we are struggling and some people are still struggling even now. Free access to internet and information would be wow, why not. People are looking for work they are sending CV's, they can go use the free Wi-Fi and apply on the internet for free

Interviewer: Do you think you can trust the information from the websites?

Peter: yah, I think I can trust it, all the information that I got from the websites it's been useful, I trust it very much, I have never seen anyone going into the websites and putting rubbish, maybe it is because I am to trusty I don't know, but I have never found wrong information

Interviewer: So in your opinion what measures can they take to make more people use the websites?

Peter: They should advertise, on buses as well, we have a lot of buses in the city they should put notices like 'Home Affairs information logon to www.homeaffairs.com' something like that. And shopping malls as well, these big billboards at shopping malls, they should advertise there. I mean because it is a government thing they can even put it on SABC, radio stations as well, we listen to radio stations. For city of Johannesburg it is only when you are looking for information that you will find it, like you can find that oh okay I can go here and click here to get information. Information is not available freely. They can also advertise in hospitals. I have also seen advertisement on rubbish bins, people always go to rubbish bins and they will read about the websites every time they go to the rubbish bin. And they should look at things that are used on a daily basis. At least once a day you go to the rubbish bin. So the city of Johannesburg when they give out rubbish bins they should put those websites there.

Demographics

Employed, Stays in Johannesburg South, 35>, Matric and some college

10. SAMIE

Explaining the use of city Wi-Fi

Interviewer: So how are you?

Samie: I am good thanks and you?

Interviewer: Am good. So I am going to ask you questions around free Wi-Fi provided in the city and government e-service websites. Have you used any Wi-Fi hot spots around the city?

Samie: Not really because either connection is bad or you need passwords to connect to the Wi-Fi, do not really, I haven't used them

Interviewer: So how did you find out that the connection was bad?

Samie: I have tried it and like even loading the first page on google take forever (laughs)

Interviewer: So which one have you tried?

Samie: uhm I was at East Gate mall so they have that food court area, so I tried using the Wi-Fi there with my phone, but connection was really bad

Interviewer: So what other means do you use to connect to the internet?

Samie: I use my data with my phone, and I also use a personal Wi-Fi at home, we have a pebble that has Wi-Fi, so it's all personal Wi-Fi

Interviewer: So why do you choose to use your own personal Wi-Fi instead of free Wi-Fi?

Samie: I found that the connection is actually stronger with personal Wi-Fi, so it is quicker for me to do whatever I need to do on the internet, because you get impatient waiting for things, and you want to just use something that is quicker. The personal one is reliable

Interviewer: And when you tried the east gate mall one, why were you trying, and what motivated to try on that day?

Samie: uhm I was just like browsing what Wi-Fi's are around and I decided just to try out and see if it actually works because curiosity and whatever. But that was quite a while ago, I haven't tried recently so if they now have hotspots that are quicker then I would try again. I have heard they are in the process of putting hotspots around, but I don't know exactly the places where they are putting out these hotspots.

Interviewer: If you were to use one of these hotspots, what would you use it for?

Samie: I would probably just connect with my phone and use it for WhatsApp and whatever other apps I use, and also for searching online, google

Interviewer: Would you be apprehensive about using it for personal credentials?

Samie: I don't think so, I think I would be fine, well I don't know in-depth about public Wi-Fi but I guess I would use it. I think with my phone, it's an iPhone, so I trust it to keep attacks away (Laughs)

Interviewer: So why haven't you use other free Wi-Fi spots?

Samie: Uhm usually I have enough data, personal data to use, so it's not like a need for public Wi-Fi I already have enough personal Wi-Fi. So if I do run out of personal data, I usually just buy, it's easier to buy data with my standard bank app

Interviewer: Do you think it is necessary to improve the use of these hotspots and make more people use them?

Samie: I think it would help a lot of people if they had access to free Wi-Fi, uhm like I have access to my personal Wi-Fi and it helps me a lot, if I need to know anything I can find it out, it is just really helpful to be connected

Interviewer: What do you think are the main reasons that make people not use the Wi-Fi?

Samie: Maybe a lot of people don't know about it, because I haven't seen any advertising about the Wi-Fi hot spots. Maybe they should advertise it at the bus stops or wherever the hotspots are, and maybe even having explanations of how to connect to it, because maybe people don't know how to connect to it, and increasing the speed of the Wi-Fi would also help. And I think for me the thing that would really motivate me to use is it is if they increase the speed, then I would probably use it a lot more. But for the general population, I think if they just make them aware, but up advertisements at stops and instructions of how to use it and connecting, I mean just marketing

Use of government websites

Interviewer: Have you visited any government e-services websites?

Samie: Yah I have, I have visited the city of Johannesburg website, I have used it for information but I haven't used any of the services from the website

Interviewer: What influenced your need to use the website?

Samie: Well my school research, I might continue using it for information, but I am not sure if will ever use the e-services

Interviewer: What did you learn about it when you visited for the first time?

Samie: My research supervisor told me about it, before doing my research I was not aware of it

Interviewer: What functionality of the website do you use most?

Samie: I am using it for my research and I am assessing all the e-services available there

Interviewer: What did you expect from it when you used it for the first time?

Samie: I am not personally using it; I am just assessing how people use it

Interviewer: As a resident in the city of Johannesburg, what would you use it for?

Samie: I am not sure if I would use any of the services, because I mean I don't have to deal with paying rates and water because I am living at home, so my parents do that. And building plans as well, I don't want to deal with it. Maybe using the interactive map I would try but yah, I don't know what I would use it for. I would probably use it for the events and maybe for the reports if I needed to find out more information

Interviewer: Do you have any means you use to get government related or city related information?

Samie: Before I knew about the websites uhm... I never really went to look specifically for the city of Johannesburg information. When I am looking for a place in Johannesburg I search specifically for that name, I don't go like on a website to find staff there, and I ask around.

Interviewer: Why did you choose those other sources and not try to look for the websites?

Samie: I actually didn't even consider that Johannesburg would have their own websites (Laughs). Because I mean you think like companies and social networks and that's all online, you don't think like a city has its own website, at least I didn't think that they did. I honestly didn't think that cities have websites (laughs) it was not even in my mind that they would have a website. I think my dad might use it because he has always asked for pictures of our electricity meter and I don't know if you can use those as part of the services on the websites, so I don't know, he might use it. Honestly like I was surprised that Johannesburg is doing the whole smart city thing, like know ever told me about it, I didn't even know. We don't watch TV in our house, and I don't really read the newspaper, I listen to radio and look for news online, also like general news not like specific to the city or whatever

Interviewer: Now that you have seen the websites, do you find them useful?

Samie: Yah, they are useful, like just gaining knowledge, I feel kind of ignorant not knowing this things you know, so mainly for knowledge gaining purposes they are useful. But to find a place to hangout I would go to zomato or trip advisor

Interviewer: Now when you used it, was it easy to achieve your goal?

Samie: In the beginning it wasn't because I found that the menu didn't stand out for me to realize that's where the information is, so I had to search quite a bit in the beginning but once I found the menu it was easy to get the information, now it's really quick to get the information I want. Now I know the route to take to get information on the website, I needed to learn to learn in the beginning but now that I know it is efficient

Interviewer: What do you think are the main reasons for the low use of the websites?

Samie: Like me I mean I had no idea that city websites exist so again awareness and maybe for other people they don't know where to go to connect so that they can access the websites

Interviewer: Do you think it is necessary to improve the use of these services?

Samie: I think some people could use the websites, like people who are family heads and for people who just want general information about the city. It depends on what the person needs, because I don't need to use those services because that is not my position in the family

Interviewer: So how can the city of Johannesburg make more people use these websites?

Samie: Marketing and like I think they should just spread the knowledge that these things exist either by going to speak in communities or like something to increase awareness. From my personal point of view I think awareness is the main reason why people are not using them

Demographics

Unemployed, undergraduate, Joburg East, 18-34

11. STEVEN

Explaining the use of government Wi-Fi services

Interviewer: (Introduction and explanation) Have you used any of the free Wi-Fi services around the city?

Steven: Yes, I have used the one at Eastgate mall and I use the one at work, it is not really free but we have access

Interviewer: What do you use to connect to the internet?

Steven: I use my phone; my phone is a smart phone it connects to the internet

Interviewer: So what do you mostly use the free Wi-Fi for?

Steven: I use it for sports information, music, chatting,

Interviewer: How did you learn about the free Wi-Fi when you used it for the first time?

Steven: I heard a rumor about it saying there is free Wi-Fi there at Eastgate, so I decided to just try it out and it worked. I was really anxious to know whether it is real and whether it works, I was curious

Interviewer: Did it work when you tried it for the first time?

Steven: I had to first do some settings on my phone before it could work, and the process is not really effective because you have to now first reset your phone and then after that the Wi-Fi will connect so you see now you have to meet up with difficulties before connecting so it is tiring

Interviewer: Which hotspot do you use most when you are away from work?

Steven: I use the one at Eastgate because it is accessible to me, I stay close to Eastgate

Interviewer: Do you have any alternative means that you use to connect to the internet?

Steven: I sometimes use data on my phone. If I had to choose I would go for Wi-Fi because it is free.

Interviewer: Do you have challenges when using free Wi-Fi?

Steven: Resetting the settings could be problematic, especially for old people and people who do not know how to change the settings, it might be very difficult for them to use the Wi-Fi, so some people might know how to change them and some people might not know, like you know when you are with your mother she will ask you to do it for her, but some people may not have anyone to help them

Interviewer: Okay. So do you think it is necessary to improve the use and make more people use it?

Steven: Yes they should make more hotspots because we use internet, each and every day we would want to know news what is happening around the country. But then we do not know because we don't have free Wi-Fi, we have to buy data in order to have internet and know what is happening in our country so it is difficult

Interviewer: What can they do to make more people use it?

Steven: They must put more hotspots for Wi-Fi and improve their Wi-Fi and make it fast.

Interviewer: Do you think people know about the hotspots?

Steven: I would say it is 50/50, some people know and some people don't know. They should talk about it in radio and TV to make people know

Explaining the use of government e-service websites

Interviewer: (Explanation) Have you used nay of the government websites?

Steven: No I have not used them, because I don't know even one of the websites you are talking about

Interviewer: Do you know someone who has used the websites?

Steven: I don't even know anyone who uses them, no one has ever mentioned them to me, and you are the first one to talk about them

Interviewer: But do you think they could be useful to you?

Steven: Yes they would be useful, and I would tell more people that they exist, now I didn't know they exist, it's the first time hearing about them

Interviewer: How do you get government related information?

Steven: I don't really follow information about the city, some staff I just get by getting around, I ask around, I get information from rumors, I talk to people, I don't necessarily have to dig for it, like I am not really interested

Interviewer: In your opinion, what do you think are the reasons why people do not use the websites?

Steven: The websites are not popular; people don't know about them or even know people who use them

Interviewer: Do you think it is necessary to make people use it?

Steven: Yes these websites are important because we have to know what is happening in our country, I am talking to the people who really want to know. But then why don't they advertise the websites? (Sounding annoyed) on TV it is not there, on radio , nothing! so it like it's a secret

Interviewer: How can they make more people use them?

Steven: They must advertise. And one of the things why people are not using it is because of crime, fraud, you know people have been getting the messages that they have won some money and need to send their details then they take your account number and steal your money

Demographics

Employed: security guard, Less matric, Joburg east, 18-24

12. THABO

Explaining the use of government Wi-Fi services

Interviewer: (Introduction and explanation) so have you used any of the free Wi-Fi services?

Thabo: Yah Yah I have used the one in Soweto

Interviewer: Oh what did you use it for?

Thabo: I used it for downloading software and movies

Interviewer: So what did you use to connect to the internet?

Thabo: I was using my laptop

Interviewer: So did you only use it for downloading? What else did you use it for?

Thabo: Yes because I was not at school I used it to download and I used it for my personal things

Interviewer: How did you learn about it when you used for the first time?

Thabo: Actually I like challenges so I challenged it to see if it works. And I was told by a friend

Interviewer: When you heard from a friend, what encouraged you to use it?

Thabo: I was encouraged because I can do anything because it is free and I can update my staff there, it is free.

Interviewer: Okay, so did it work first time?

Thabo: Yes Yes and it was fast

Interviewer: Oh okay. So do you have any alternative means you use to connect to the internet?

Thabo: I use data on my phone

Interviewer: Oh so what would you choose to use between data and free Wi-Fi?

Thabo: (Laughs) for me free Wi-Fi does it hey (Laughs) free Wi-Fi (responded jovially and excitedly) because most of the time I download movies and they take two hours and downloading something for two hours cost a lot of data, so with free Wi-Fi you just download unlimited

Interviewer: So do you ever encounter challenges when using the Wi-Fi?

Thabo: No, it is effective, I continue using it

Interviewer: Do you think it is necessary to improve the use of the Wi-Fi and make more people use it?

Thabo: Yah Yah they should increase use yes, because it will help a lot of people you know, some people want to do research for school, some want to use it for their work, for me now sometimes I edit videos and I need software to help me edit, then I can sell the videos and make a living out of them.

Interviewer: So how do you think they should make more people use it?

Thabo: By it installing it also at the tuk shops, especially in Soweto

Interviewer: Do you think people are aware of it?

Thabo: Well in Soweto people know but not all of them

<u>Explaining the use of government websites</u>

Interviewer: So now I am going to ask you about government e-service websites (explains websites). Have you ever use any of the websites?

Thabo: Oh ya I did use, I used DTI, I wanted information about funding

Interviewer: Oh yah, okay was it effective, did you get what you needed?

Thabo: ya I did get the information

Interviewer: What influenced your need to use the website?

Thabo: It was personal needs

Interviewer: So is the DTI website the only website you used?

Thabo: Yah I have never visited the other once

Interviewer: Why haven't you visited the other once?

Thabo: Some other government websites I don't have interest in them, what I need is not available on the websites, for example I can't find edit software on the website (Laughs)

Interviewer: But you can find information about internships, information about scholarships, job opportunities. Did you know that that you can find this information on the websites?

Thabo: uhm just a little bit

Interviewer: So what other information source do you use to get government related information?

Thabo: aah! (Responded thoughtfully) I don't know hey, there is nothing I can tell you. The government is making money, so I also have to focus on making my own money. And sometimes they take time to respond on these websites, they take time (stressing his point) I know the DTI is now two years now and I am still waiting for funding assistance but they haven't said anything, so I can't deal with something that takes time. So maybe I have lost interest in them because of that.

And yah I listen to radio, I watch TV, and Jozi FM, Jozi FM you know they talk about everything if there is something new in the township they talk about it (sounding confident and satisfied). So Jozi FM is a radio station in the township they talk about things in Soweto, and many people listen to it, it is in Soweto. And even when there is some event in town, they talk about it and we get the information, so for people in Soweto Jozi FM is good.

Interviewer: But do you think it is necessary to make more people use the websites?

Thabo: Yah they should also improve their work, they should not take long to respond, they should not be lazy, then more people will use it. They should advertise it. Now we have free newspapers in Soweto, so if maybe they could also advertise it in the newspapers, because I mean we get the newspaper for free, so information about government websites should be in there, then when they are there we will be able to see. And many people can like the websites you know, because if you keep hearing about something several times, you would want to see what is this thing that people are talking about you would want to check it out to see if it is real, then if you find out that it is true you will start using it. And they should also advertise in schools, tell matrics and grade 11 students so that when they finish school they can have plans, they can visit the websites and have information

Demographics

Less matric, Employed (Part time), 18-34, Stays in Soweto

Appendix D: Processed Data from Atlas.ti Grouped into Codes

1. VALUE

Convenience

P 2: Maria.docx - 2:39 [with twitter I don't need to g..] (128:128) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Convenience - Family: Value of Smart City Services] [Irreplaceability - Family: Value of Smart City Services] [Reliability of alternative source - Family: Alternative Information Sources]
No memos

with twitter I don't need to go and check, it just feeds into my phone. So usually when I go to websites is when I am looking for something. But the reason why I follow them on twitter is because certain interesting things might come up which may not be on the website. Because they don't post little things on the websites all the time. So on twitter, you get feeds, live feeds for the whole day. So you kind of know what is going on

P 3: Andile.docx - 3:7 [So when I come to work I use t..] (10:10) (Super)
Codes: [Convenience - Family: Value of Smart City Services]
No memos

So when I come to work I use the bus, so I use the city of Johannesburg Wi-Fi available at the rea-vaya stations. And it is fast, it is free.

P 3: Andile.docx - 3:9 [Thing is when you wait for a b..] (26:26) (Super)
Codes: [Convenience - Family: Value of Smart City Services]
No memos

Thing is when you wait for a bus, you know a bus takes time to come, so you must entertain yourself while you are waiting there.

P 3: Andile.docx - 3:11 [Because I am there most of the..] (30:30) (Super)
Codes: [Convenience - Family: Value of Smart City Services] [Cost saving - Family: Value of Smart City Services] [Timing of need - Family: User needs]
No memos

Because I am there most of the time, I take the bus there. Like on average you would probably wait for around 10minutes for a bus to come, if you are lucky. So you would want to sit down and be comfortable, and Wi-Fi there is free, you can just switch it on and use it.

P 3: Andile.docx - 3:32 [I have used the SARS one, beca..] (56:56) (Super)
Codes: [Convenience - Family: Value of Smart City Services] [Trust in government - Family: Trust]
No memos

I have used the SARS one, because it is the only one I have a need for. But the other ones I don't trust them (responds with a hint of mockery and laughs). Yah, now it is trust. Because like the thing with SARS is that they are so convenient. Yah it is still government but you know other government departments don't work like SARS, unfortunately. So I trust SARS because I always do my e-filling on SARS. So it is quick

P 3: Andile.docx - 3:41 [because I am the type of perso..] (72:72) (Super)
Codes: [Convenience - Family: Value of Smart City Services]

No memos

because I am the type of person who, if I have a query I don't like calling and asking what is happening. I want to send something electronically via electronic services. Like I would want to use the government websites to communicate with the government because I know that I can do it in the comfort of my home or in my own space. I don't have to go there and queue for 2 hours, I can just send my query quick quick via the websites. So one day I will see a need for the websites

P 3: Andile.docx - 3:46 [I think if there could be cons..] (76:76) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Convenience - Family: Value of Smart City Services] [Irreplaceability - Family: Value of Smart City Services] [Pertinence - Family: Value of Smart City Services] [Reliability of alternative source - Family: Alternative Information Sources] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

I think if there could be consistency in how the different departments under the city of Johannesburg work, then I think people would trust it more. They can even learn from the city of Johannesburg twitter. They must have the same implementation team or strategy, then I would use it

P 3: Andile.docx - 3:47 [It tried for Rea-vaya, there w..] (78:78) (Super)
Codes: [Convenience - Family: Value of Smart City Services] [Cost saving - Family: Value of Smart City Services] [Personal interests - Family: User needs] [Timing of need - Family: User needs] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

It tried for Rea-vaya, there was a strike so I was trying to check if the city of Johannesburg has updated information about the strike, like when is it going to end, you know, and when the strike ends what routes will be coming back. So I went to the website and I was like ah, this people, this information is not updated. They still tell you what Rea-vaya is, but there was nothing really specific about the strike and progress of the strike. So it was really frustrating. And then I tried sending them queries online, till this day I am still waiting for a response.

P 3: Andile.docx - 3:51 [It is accessible and it is fas..] (86:86) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Convenience - Family: Value of Smart City Services] [Cost saving - Family: Value of Smart City Services] [Irreplaceability - Family: Value of Smart City Services] [Pertinence - Family: Value of Smart City Services] [Reliability of alternative source - Family: Alternative Information Sources]
No memos

It is accessible and it is fast. I think now they realized that the mindset of the people has changed. People want information like at the tips of their figures. They don't want to go to some government department to find information. If I am on twitter I want to see like what government is doing, and their services and events that are coming up.

P 4: Mrs Jane.docx - 4:2 [Sometimes I am not at work and..] (10:10) (Super)
Codes: [Convenience - Family: Value of Smart City Services] [Profession - Family: User needs]
No memos

Sometimes I am not at work and there is an urgent email that I need to read and respond to, so I quickly go to the nearest McDonalds for Wi-Fi because I don't have it at home, then I quickly go to McDonalds to access my emails

P 4: Mrs Jane.docx - 4:28 [And it is much more easier to ..] (43:43) (Super)
Codes: [Convenience - Family: Value of Smart City Services]

No memos

And it is much more easier to find information in your office than to go out and physically try to get information. So it is quick and easy when you use the websites to find information. Even the contact details, they are available on the websites, if there is something that you want to inquire about, just go to the websites, you will get details and information then it will be easy when you have to phone and make an appointment because you have now browsed the website to get relevant information.

P 5: Jacob.docx - 5:33 [Look I am a researcher, I am a..] (73:73) (Super)
Codes: [Convenience - Family: Value of Smart City Services]
No memos

Look I am a researcher, I am always in front of the computer, I am not always out there. The only means for me to get current affairs is to go to the websites, this is what motivates me to use them. Because sometimes I will be busy doing my work. I find the websites easy in that way

P10: Peter.docx - 10:10 [you know sometimes when you di..] (22:22) (Super)
Codes: [Convenience - Family: Value of Smart City Services] [Cost saving - Family: Value of Smart City Services]
No memos

you know sometimes when you dial the city of Johannesburg line when you are calling them, you get this option to dial 1 to do this and then once you press you hold for a long time so if you are using your own phone at home, it uses a lot of airtime it is very expensive, but then if you go to websites and then you click click it is cheap and easy.

P10: Peter.docx - 10:11 [The first time when I used the..] (23:23) (Super)
Codes: [Convenience - Family: Value of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

The first time when I used them was when I got by bill, I used to get my bill via post, but now they email them to me. So if I have some queries then I check the city's websites, I just go to www on my computer, then I click, the website is on my favourites now. But when I first learned about it was on the bill, the utility bill

P10: Peter.docx - 10:13 [Ever since I have registered, ..] (27:27) (Super)
Codes: [Convenience - Family: Value of Smart City Services]
No memos

Ever since I have registered, on a monthly basis they sms me what I am owing and what my monthly bills are, what I have to pay, my rates and all. And I can even quickly go and check on the website when I need to know and I think maybe for other services that I need to pay, I can just go to the website and check (sounding confident). It is very very useful, in fact even effective

Cost saving

P 1: Bra Gee.docx - 1:21 [I do not feel the need to conn..] (43:43) (Super)
Codes: [Cost saving - Family: Value of Smart City Services]
No memos

I do not feel the need to connect to Wi-Fi just so I could communicate with someone on whatsapp or facebook. I mean it does use my data but not much of it. You get me? But if I was to do or watch a video or something that requires a lot of data, I would consider having or using Wi-Fi from the city

P 1: Bra Gee.docx - 1:22 [But if I had to look-up someth..] (39:39) (Super)
Codes: [Cost saving - Family: Value of Smart City Services]
No memos

But if I had to look-up something on utube you know like watching a clip for like 5minutes, it takes about 100MB and that costs like 30 bucks so yah.

P 2: Maria.docx - 2:29 [Uhmm, people that can't afford..] (49:49) (Super)
Codes: [Cost saving - Family: Value of Smart City Services]
No memos

Uhmm, people that can't afford to buy data, for example students, high school kids. Those are going to be there the whole time, because we are a generation that we were brought up in technology. We have these things with us, around us, and if I can't afford to buy data every day, off course I am going to use city hot spots

P 3: Andile.docx - 3:3 [it is free. I can update my so..] (10:10) (Super)
Codes: [Cost saving - Family: Value of Smart City Services] [Finances - Family: User needs]
No memos

it is free. I can update my software, because you know updating software uses a lot of data

P 3: Andile.docx - 3:5 [I use it for things that requi..] (20:20) (Super)
Codes: [Cost saving - Family: Value of Smart City Services] [Finances - Family: User needs]
No memos

I use it for things that require a lot of data, because I wouldn't want to buy data every week

P 3: Andile.docx - 3:11 [Because I am there most of the..] (30:30) (Super)
Codes: [Convenience - Family: Value of Smart City Services] [Cost saving - Family: Value of Smart City Services] [Timing of need - Family: User needs]
No memos

Because I am there most of the time, I take the bus there. Like on average you would probably wait for around 10minutes for a bus to come, if you are lucky. So you would want to sit down and be comfortable, and Wi-Fi there is free, you can just switch it on and use it.

P 3: Andile.docx - 3:19 [It is accessible, it is fast, ..] (42:42) (Super)
Codes: [Cost saving - Family: Value of Smart City Services]
No memos

It is accessible, it is fast, it is free, even though we pay with our taxes(Laughs)

P 3: Andile.docx - 3:21 [Yah, the minute I am close to ..] (44:44) (Super)
Codes: [Cost saving - Family: Value of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

Yah, the minute I am close to a station, I switch on the Wi-Fi on my phone, then I think after like 2 seconds it connects

P 3: Andile.docx - 3:25 [If you look at studies, one of..] (48:48) (Super)
Codes: [Cost saving - Family: Value of Smart City Services] [Finances - Family: User needs]

No memos

If you look at studies, one of the main reasons why people in Africa don't use internet is because it is expensive and it is not available. So if you have free Wi-Fi then the whole notion will not exist anymore and people will also use government e-services. Because people don't use government e-services because they don't have connectivity

P 3: Andile.docx - 3:34 [Because like the thing with SA..] (56:56) (Super)
Codes: [Cost saving - Family: Value of Smart City Services]
No memos

Because like the thing with SARS is that they are so convenient. Yah it is still government but you know other government departments don't work like SARS, unfortunately. So I trust SARS because I always do my e-filling on SARS. So it is quick, I don't have to stand in the line

P 3: Andile.docx - 3:37 [Yah, even though I should view..] (64:64) (Super)
Codes: [Cost saving - Family: Value of Smart City Services] [Trust in technology - Family: Trust]
No memos

Yah, even though I should view them the same because it is the same thing, all government. But like SARS is super-efficient so I trust them

P 3: Andile.docx - 3:47 [It tried for Rea-vaya, there w..] (78:78) (Super)
Codes: [Convenience - Family: Value of Smart City Services] [Cost saving - Family: Value of Smart City Services] [Personal interests - Family: User needs] [Timing of need - Family: User needs] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

It tried for Rea-vaya, there was a strike so I was trying to check if the city of Johannesburg has updated information about the strike, like when is it going to end, you know, and when the strike ends what routes will be coming back. So I went to the website and I was like ah, this people, this information is not updated. They still tell you what Rea-vaya is, but there was nothing really specific about the strike and progress of the strike. So it was really frustrating. And then I tried sending them queries online, till this day I am still waiting for a response.

P 3: Andile.docx - 3:51 [It is accessible and it is fas..] (86:86) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Convenience - Family: Value of Smart City Services] [Cost saving - Family: Value of Smart City Services] [Irreplaceability - Family: Value of Smart City Services] [Pertinence - Family: Value of Smart City Services] [Reliability of alternative source - Family: Alternative Information Sources]
No memos

It is accessible and it is fast. I think now they realized that the mindset of the people has changed. People want information like at the tips of their figures. They don't want to go to some government department to find information. If I am on twitter I want to see like what government is doing, and their services and events that are coming up.

P 3: Andile.docx - 3:58 [I think the first one is just ..] (100:100) (Super)
Codes: [Cost saving - Family: Value of Smart City Services] [Finances - Family: User needs]
No memos

I think the first one is just connectivity, like access. Not everyone has access to the internet on a regular basis. For some people, they only get it when they are at work, school or university. But if they are just there at home, they don't have access to the internet and they need to use their data and data is expensive

P 3: Andile.docx - 3:62 [Because I think if they dedica..] (102:102) (Super)
Codes: [Cost saving - Family: Value of Smart City Services] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

Because I think if they dedicate more time fixing e-services, then they will probably have less people coming to their offices to ask stupid questions at times. If they dedicate a better team to the whole electronic thing , I mean people can communicate with them from home and from their offices rather than being inconvenienced or the service provider working there being inconvenienced by me coming all the way , spending an hour there, fighting with the service provider and causing a scene. You can just do it electronically and it can be sorted now

P 3: Andile.docx - 3:63 [So I think when they say they ..] (102:102) (Super)
Codes: [Cost saving - Family: Value of Smart City Services] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

So I think when they say they want to move towards being a smart City, they should want to see less people coming to their offices to ask them. I mean people should engage with technology, it is faster, and it is more efficient. And it is actually nicer communicating with someone online rather than going there fighting. So the websites are needed for sure. I mean we cannot be a smart city if we don't have technology

P 3: Andile.docx - 3:65 [And when we do use it, they mu..] (104:104) (Super)
Codes: [Cost saving - Family: Value of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

And when we do use it, they must take us seriously. If I ask them something, then they must respond. At least they must have a turnaround time like most companies website have. I think most of the websites tell you that they will respond to you in like 48 working hours. But I think with the city of Johannesburg they respond to you in like one working month (mockery and laughs)

P 3: Andile.docx - 3:66 [If they can improve their effi..] (104:104) (Super)
Codes: [Cost saving - Family: Value of Smart City Services] [Trust in government - Family: Trust]
No memos

If they can improve their efficiency you know, and just market themselves well, then I think they will find more people using their websites. Because I really think people want to use their e-services, but because like we don't trust the government, people feel like they would rather go there to government offices and tell them , oh but I am having this problem when are you guys going to fix it?

P 4: Mrs Jane.docx - 4:4 [I think I was encouraged to us..] (14:14) (Super)
Codes: [Cost saving - Family: Value of Smart City Services]
No memos

I think I was encouraged to use it because it is free you know, anyone is able to access the Wi-Fi from McDonalds

P 4: Mrs Jane.docx - 4:6 [The McDonalds one obviously, I..] (24:24) (Super)
Codes: [Cost saving - Family: Value of Smart City Services]
No memos

The McDonalds one obviously, I would go for that one because it is free, it doesn't have to take anything from me and it is reliable

P 5: Jacob.docx - 5:6 [If Wi-Fi is free then why not ..] (28:28) (Super)
Codes: [Cost saving - Family: Value of Smart City Services]
No memos

If Wi-Fi is free then why not use it? (Sounding excited) freebies! Freebies are welcome

P 5: Jacob.docx - 5:7 [I would be using it because I ..] (30:30) (Super)
Codes: [Cost saving - Family: Value of Smart City Services]
No memos

I would be using it because I pay tax; if it is free it has to be used. Then when I am being taxed I will be okay because part of my money came to me, I used Wi-Fi. If it is free I will use it. The area where I was connected in it was slow. But if I am in an area where it is fast, I would use it. There are areas where it is fast and there are areas where it is extremely frustrating. For me always when you say free staff I will utilize it

P 5: Jacob.docx - 5:38 [They should sell the importanc..] (78:78) (Super)
Codes: [Cost saving - Family: Value of Smart City Services]
No memos

They should sell the importance of using e-services and tell people that they can get a response right there where they are instead of using transport money, petrol money to reach offices where they will find the door closed.

P 9: Isaac.docx - 9:1 [I use it to update my software..] (10:10) (Super)
Codes: [Cost saving - Family: Value of Smart City Services]
No memos

I use it to update my software or when I have software to download, mostly when I download staff , it's easier if I am to download to use Wi-Fi so that I safe my mega bytes. I use it also for latest news

P10: Peter.docx - 10:10 [you know sometimes when you di..] (22:22) (Super)
Codes: [Convenience - Family: Value of Smart City Services] [Cost saving - Family: Value of Smart City Services]
No memos

you know sometimes when you dial the city of Johannesburg line when you are calling them, you get this option to dial 1 to do this and then once you press you hold for a long time so if you are using your own phone at home, it uses a lot of airtime it is very expensive, but then if you go to websites and then you click click it is cheap and easy.

P10: Peter.docx - 10:15 [they should improve them, yes ..] (31:31) (Super)
Codes: [Cost saving - Family: Value of Smart City Services]
No memos

they should improve them, yes excellent. You see it is useful for other people who can go and find information. You see our background as black people we are struggling and some people are still struggling even now. Free access to internet and information would be wow, why not. People are looking for work they are sending CV's, they can go use the free Wi-Fi and apply on the internet for free

P11: Steven.docx - 11:5 [I sometimes use data on my pho..] (16:16) (Super)
Codes: [Cost saving - Family: Value of Smart City Services]
No memos

I sometimes use data on my phone. If I had to choose I would go for Wi-Fi because it is free.

P12: Thabo.docx - 12:3 [I was encouraged because I can..] (14:14) (Super)
Codes: [Cost saving - Family: Value of Smart City Services]
No memos

I was encouraged because I can do anything because it is free and I can update my staff there, it is free.

P12: Thabo.docx - 12:4 [(Laughs) for me free Wi-Fi doe..] (20:20) (Super)
Codes: [Cost saving - Family: Value of Smart City Services] [Irreplaceability - Family: Value of Smart City Services]
No memos

(Laughs) for me free Wi-Fi does it hey (Laughs) free Wi-Fi (responded jovially and excitedly) because most of the time I download movies and they take two hours and downloading something for two hours cost a lot of data, so with free Wi-Fi you just download unlimited

Irreplaceability

P 1: Bra Gee.docx - 1:6 [I do, I would like to, but it ..] (17:17) (Super)
Codes: [Irreplaceability - Family: Value of Smart City Services]
No memos

I do, I would like to, but it does not bother me even if it is not there

P 1: Bra Gee.docx - 1:34 [I always manage to get by with..] (92:92) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Irreplaceability - Family: Value of Smart City Services] [Reliability of alternative source - Family: Alternative Information Sources]
No memos

I always manage to get by without those websites. I just call a friend, they will tell me. Am not saying every place I want to go I know, but most of the time where I want to go, someone has been there, or lives next to the place, you see? So answers are always around

P 2: Maria.docx - 2:25 [Because I have other means] (70:70) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Irreplaceability - Family: Value of Smart City Services]
No memos

Because I have other means

P 2: Maria.docx - 2:30 [Well I haven't visited them in..] (90:90) (Super)
Codes: [Irreplaceability - Family: Value of Smart City Services]
No memos

Well I haven't visited them in a while. The last time I was there was the city of Johannesburg website and it was because I was reading their strategic plan for the city

P 2: Maria.docx - 2:32 [Yah, It was only once or twice..] (106:106) (Super)
Codes: [Irreplaceability - Family: Value of Smart City Services]
No memos

Yah, It was only once or twice, and it was for the same thing

P 2: Maria.docx - 2:35 [I mostly don't have a need for..] (120:120) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Irreplaceability - Family: Value of Smart City Services] [Pertinence - Family: Value of Smart City Services]
No memos

I mostly don't have a need for anything government related, most of the staff that I do is general, not specific to the government here. So I haven't had a need to go to their websites to be very honest. The one instance when I needed to, I went on their site and got what I wanted, and that was it. Okay? So for my profession, my studies, my personal life, I use the internet, but I use other sites not government sites

P 2: Maria.docx - 2:39 [with twitter I don't need to g..] (128:128) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Convenience - Family: Value of Smart City Services] [Irreplaceability - Family: Value of Smart City Services] [Reliability of alternative source - Family: Alternative Information Sources]
No memos

With twitter I don't need to go and check, it just feeds into my phone. So usually when I go to websites is when I am looking for something. But the reason why I follow them on twitter is because certain interesting things might come up which may not be on the website. Because they don't post little things on the websites all the time. So on twitter, you get feeds, live feeds for the whole day. So you kind of know what is going on

P 2: Maria.docx - 2:53 [I would be stuck now, I have n..] (166:166) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Irreplaceability - Family: Value of Smart City Services]
No memos

I would be stuck now, I have nothing else to use

P 2: Maria.docx - 2:54 [Yes because that would be the ..] (168:168) (Super)
Codes: [Irreplaceability - Family: Value of Smart City Services]
No memos

Yes because that would be the only option available to me

P 2: Maria.docx - 2:55 [Yes, it is replaceable and the..] (170:170) (Super)
Codes: [Irreplaceability - Family: Value of Smart City Services]
No memos

Yes, it is replaceable and the other means are more supportive

P 3: Andile.docx - 3:15 [If I had to choose I would tak..] (40:40) (Super)
Codes: [Familiarity - Family: Effectiveness of Smart City Services] [Irreplaceability - Family: Value of Smart City Services] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

If I had to choose I would take the city of Johannesburg one, yah like it works. They must make it available around the whole city (sounding excited), like the city of Tshwane

P 3: Andile.docx - 3:18 [And it is better compared to o..] (42:42) (Super)
Codes: [Irreplaceability - Family: Value of Smart City Services]

No memos

And it is better compared to other networks, your Vodacom's and your MTN's. I mean those guys are slow hey, but the city of Johannesburg one is fast and it is always there. And people use it, they trust it

P 3: Andile.docx - 3:46 [I think if there could be cons..] (76:76) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Convenience - Family: Value of Smart City Services] [Irreplaceability - Family: Value of Smart City Services] [Pertinence - Family: Value of Smart City Services] [Reliability of alternative source - Family: Alternative Information Sources] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

I think if there could be consistency in how the different departments under the city of Johannesburg work, then I think people would trust it more. They can even learn from the city of Johannesburg twitter. They must have the same implementation team or strategy, then I would use it

P 3: Andile.docx - 3:51 [It is accessible and it is fas..] (86:86) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Convenience - Family: Value of Smart City Services] [Cost saving - Family: Value of Smart City Services] [Irreplaceability - Family: Value of Smart City Services] [Pertinence - Family: Value of Smart City Services] [Reliability of alternative source - Family: Alternative Information Sources]
No memos

It is accessible and it is fast. I think now they realized that the mindset of the people has changed. People want information like at the tips of their figures. They don't want to go to some government department to find information. If I am on twitter I want to see like what government is doing, and their services and events that are coming up.

P12: Thabo.docx - 12:4 [(Laughs) for me free Wi-Fi doe..] (20:20) (Super)
Codes: [Cost saving - Family: Value of Smart City Services] [Irreplaceability - Family: Value of Smart City Services]
No memos

(Laughs) for me free Wi-Fi does it hey (Laughs) free Wi-Fi (responded jovially and excitedly) because most of the time I download movies and they take two hours and downloading something for two hours cost a lot of data, so with free Wi-Fi you just download unlimited

Pertinence

P 1: Bra Gee.docx - 1:10 [It depends, If I have to use i..] (25:25) (Super)
Codes: [Pertinence - Family: Value of Smart City Services]
No memos

It depends, If I have to use it I will use, but like most of the time I don't need to, like I said if it was a financial reason then maybe I would want to use it

P 1: Bra Gee.docx - 1:29 [I didn't know they exist, but ..] (78:78) (Super)
Codes: [Advertisement - Family: Awareness] [Knowledge - Family: Awareness] [Pertinence - Family: Value of Smart City Services]
No memos

I didn't know they exist, but am sure I would have thought of them. Off course if I had a need for them I would have found out about them. I am very updated myself, it has never presented its self to me, the website.

P 2: Maria.docx - 2:35 [I mostly don't have a need for..] (120:120) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Irreplaceability - Family: Value of Smart City Services] [Pertinence - Family: Value of Smart City Services]
No memos

I mostly don't have a need for anything government related, most of the staff that I do is general, not specific to the government here. So I haven't had a need to go to their websites to be very honest. The one instance when I needed to, I went on their site and got what I wanted, and that was it. Okay? So for my profession, my studies, my personal life, I use the internet, but I use other sites not government sites

P 2: Maria.docx - 2:42 [It depends on what the need is..] (136:136) (Super)
Codes: [Pertinence - Family: Value of Smart City Services]
No memos

It depends on what the need is. So if I am just looking for general information, I don't know, I might use it. It depends what the need is. Whether personal, academic, work one, I might use it. If I need to know who is the current Meyer in the city of Johannesburg I would go to the website and I would check because I am assuming that their information will be updated

P 2: Maria.docx - 2:48 [I don't think there is anythin..] (160:160) (Super)
Codes: [Pertinence - Family: Value of Smart City Services]
No memos

I don't think there is anything they can do to make me use it more. The point is, I know they are there, I know they have made themselves available using differentchannelselectronically online. So if I need to go and use them, I will go and use it. They just need to make sure it works

P 2: Maria.docx - 2:56 [Well the thing is, it depends ..] (49:49) (Super)
Codes: [Pertinence - Family: Value of Smart City Services]
No memos

Well the thing is, it depends on who they are targeting. So if they are just targeting anybody who finds themselves in Joburg and as long as you have a smart phone, then I am sure a lot of people are using it. Uhmm, people that can't afford to buy data, for example students, high school kids

P 3: Andile.docx - 3:4 [For everything, but mainly to ..] (18:18) (Super)
Codes: [Pertinence - Family: Value of Smart City Services]
No memos

For everything, but mainly to update software on my phone. And for reading on other apps, I have reading apps, so I use it for that as well

P 3: Andile.docx - 3:22 [I would probably critic it and..] (46:46) (Super)
Codes: [Pertinence - Family: Value of Smart City Services]
No memos

I would probably critic it and say it is in limited places. But besides that I wouldn't critic it. Yah, for now I wouldn't.

P 3: Andile.docx - 3:39 [My problem with government web..] (66:66) (Super)

Codes: [Pertinence - Family: Value of Smart City Services] [Timing of need - Family: User needs]
No memos

My problem with government websites is that when you go on their websites some of the staff is not relevant for you at that moment in time

P 3: Andile.docx - 3:44 [But you know when you send com..] (76:76) (Super)
Codes: [Pertinence - Family: Value of Smart City Services] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

But you know when you send complaints through these forums they don't get back to you

P 3: Andile.docx - 3:46 [I think if there could be cons..] (76:76) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Convenience - Family: Value of Smart City Services] [Irreplaceability - Family: Value of Smart City Services] [Pertinence - Family: Value of Smart City Services] [Reliability of alternative source - Family: Alternative Information Sources] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

I think if there could be consistency in how the different departments under the city of Johannesburg work, then I think people would trust it more. They can even learn from the city of Johannesburg twitter. They must have the same implementation team or strategy, and then I would use it

P 3: Andile.docx - 3:51 [It is accessible and it is fas..] (86:86) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Convenience - Family: Value of Smart City Services] [Cost saving - Family: Value of Smart City Services] [Irreplaceability - Family: Value of Smart City Services] [Pertinence - Family: Value of Smart City Services] [Reliability of alternative source - Family: Alternative Information Sources]
No memos

It is accessible and it is fast. I think now they realized that the mindset of the people has changed. People want information like at the tips of their figures. They don't want to go to some government department to find information. If I am on twitter I want to see like what government is doing, and their services and events that are coming up.

P 3: Andile.docx - 3:67 [a website should captivate you..] (90:90) (Super)
Codes: [Pertinence - Family: Value of Smart City Services]
No memos

a website should captivate you, you should be like WOW! now we are talking. But sometimes I look at the city of Johannesburg website and I am like hae! no like the city of Johannesburg website is too plain. It is like white, I think it is still white and orange, something like that. And sometimes the links are outdated and then when you try to communicate with the city of Johannesburg people through the website they don't respond

P 3: Andile.docx - 3:68 [I mean like there are other we..] (92:92) (Super)
Codes: [Pertinence - Family: Value of Smart City Services]
No memos

I mean like there are other websites that I don't trust but I still go back to them, because they have that thing you know, they have that attraction that pulls you to it. And you don't really trust it but you still come back to see what they have. But the city of Johannesburg website is like you don't trust them but they also don't attract you to come back. They don't have that thing you know, like that website thing

P 5: Jacob.docx - 5:2 [I was checking its availabilit..] (12:12) (Super)
Codes: [Pertinence - Family: Value of Smart City Services]
No memos

I was checking its availability and I was checking to play around with it, to see whether it does really connect, whether they are providing the services that they say they are providing, that they ought to provide. We hear a lot of things that there is this service and that service so being a person and experimenting you find out. So I was experimenting.

P 6: Max.docx - 6:14 [They should indentify their ta..] (37:37) (Super)
Codes: [Pertinence - Family: Value of Smart City Services]
No memos

They should indentify their target market and carter to the needs of their market. They probably do but then now it is not evident

P 9: Isaac.docx - 9:8 [They should first ask themselv..] (22:22) (Super)
Codes: [Pertinence - Family: Value of Smart City Services]
No memos

They should first ask themselves whom are they targeting, so like if they are targeting students, they should use channels that students use to advertise the Wi-Fi

P12: Thabo.docx - 12:7 [Some other government websites..] (40:40) (Super)
Codes: [Pertinence - Family: Value of Smart City Services]
No memos

Some other government websites I don't have interest in them, what I need is not available on the websites, for example I can't find edit software on the website (Laughs)

2. USER NEEDS

Age

P 2: Maria.docx - 2:57 [people that can't afford to bu..] (49:49) (Super)
Codes: [Age - Family: User needs]
No memos

People that can't afford to buy data, for example students, high school kids. Those are going to be there the whole time, because we are a generation that we were brought up in technology. We have these things with us, around us, and if I can't afford to buy data every day, off course I am going to use city hot spots.

P 7: Samie.docx - 7:8 [I am not sure if I would use a..] (39:39) (Super)
Codes: [Age - Family: User needs]
No memos

I am not sure if I would use any of the services, because I mean I don't have to deal with paying rates and water because I am living at home, so my parents do that. And building plans as well, I don't want to deal with it. Maybe using the interactive map I would try but yah, I don't know what I would use it for.

P 7: Samie.docx - 7:11 [I think some people could use ..] (51:51) (Super)
Codes: [Age - Family: User needs]
No memos

I think some people could use the websites, like people who are family heads and for people who just want general information about the city. It depends on what the person needs, because I don't need to use those services because that is not my position in the family

P10: Peter.docx - 10:1 [To be honest I don't use Wi-Fi..] (4:4) (Super)
Codes: [Age - Family: User needs]
No memos

To be honest I don't use Wi-Fi that much, I don't know if I can even use it, I might know how to connect to it but honestly I have never used it

P10: Peter.docx - 10:7 [it is good, but not for us gro..] (12:12) (Super)
Codes: [Age - Family: User needs] [School - Family: User needs]
No memos

it is good, but not for us grownups (Laughs) but for youngsters, especially students, the city has a lot of students and during our time when we were studying it was very hard to get access to internet and now Wi-Fi is free and easy (sounding excited) you can do a lot of research you can download, you can do anything, so it is very good, but not for old people (Laughs again)

P10: Peter.docx - 10:8 [But now with us we, besides ma..] (14:14) (Super)
Codes: [Age - Family: User needs]
No memos

But now with us we, besides maybe we don't know how to use it, we have data, our companies offer us the 3G's so you understand, it is easy, why do we have to compete with people that are still studying that don't have money. So free Wi-Fi is good but for students and maybe for other people who are not working, and maybe for people who are working but don't have free internet like us with 3G's

P10: Peter.docx - 10:14 [To be honest, look at my phone..] (29:29) (Super)
Codes: [Age - Family: User needs]
No memos

To be honest, look at my phone, it is very old, I have an iphone, I have a laptop but I don't use them that much, I don't get time to use them, Monday to Friday I am at work, Saturday I am at church, Sunday its family time, so I think it would be unfair for me when I have that time to spend with my family to be busy on the internet and staff like that.

Education Level

P 4: Mrs Jane.docx - 4:14 [Uhm, I don't know because I am..] (43:43) (Super)
Codes: [Education Level - Family: User needs]
No memos

Uhm, I don't know because I am informed, I am wise, and as professionals we do visit these sites. And it is much more easier to find information in your office than to go out and physically try to get information

P 4: Mrs Jane.docx - 4:21 [Remember we are not all profes..] (59:59) (Super)

Codes: [Education Level - Family: User needs]
No memos

Remember we are not all professionals, we are not all educated, and we are not all information literate. So off course there will be challenges, it will not be used hundred percent

P 5: Jacob.docx - 5:12 [Well for me, like I said I am ..] (38:38) (Super)
Codes: [Education Level - Family: User needs]
No memos

Well for me, like I said I am a computer specialist, so I am up to date with the current technology trends.

P 5: Jacob.docx - 5:20 [Secondly education, people hav..] (50:50) (Super)
Codes: [Education Level - Family: User needs]
No memos

Secondly education, people have to have learned how to use these technologies and services. Education plays a role.

P 5: Jacob.docx - 5:22 [They should not assume that ev..] (50:50) (Super)
Codes: [Education Level - Family: User needs]
No memos

They should not assume that everyone knows how to use these services. We come from different levels of education. So they should not expect that all people on the ground know how to use these services.

P 5: Jacob.docx - 5:25 [And it is always about where t..] (55:55) (Super)
Codes: [Education Level - Family: User needs]
No memos

And it is always about where to look up, being educated, and being informed about smart cities, I know where to look what smart cities is. So my education puts me at an advantage.

P 5: Jacob.docx - 5:28 [From my geographical informati..] (61:61) (Super)
Codes: [Education Level - Family: User needs]
No memos

From my geographical information systems background my interest is to see how they selected their areas, what encouraged the decision makers to make that decision

P 9: Isaac.docx - 9:19 [And in schools, most of us are..] (43:43) (Super)

Codes: [Education Level - Family: User needs]

No memos

And in schools, most of us are not told about this things, so what we learn now in school is that when we finish matric we have to go to university, so if they can give out information about the websites in schools, maybe we can use them,

Financial circumstances

P 1: Bra Gee.docx - 1:7 [If I was broke I would need it..] (19:19) (Super)
Codes: [Finances - Family: User needs]
No memos

If I was broke I would need it, since I don't know how that feels like I don't know

P 1: Bra Gee.docx - 1:11 [like I said if it was a financ..] (25:25) (Super)
Codes: [Finances - Family: User needs]
No memos

like I said if it was a financial reason then maybe I would want to use it

P 1: Bra Gee.docx - 1:13 [I think it was a financial rea..] (31:31) (Super)
Codes: [Finances - Family: User needs]
No memos

I think it was a financial reason for him, he looks like a broke guy

P 1: Bra Gee.docx - 1:16 [I use Wits Wi-Fi mostly on my ..] (37:37) (Super)
Codes: [Finances - Family: User needs]
No memos

I use Wits Wi-Fi mostly on my laptop and mostly on my tablet. Because sometimes I perform something that requires a lot of data, e.g. watching a utube video, it takes a lot of data, so I cannot take it from my own phone. Because I would not feel like wasting money on data.

P 1: Bra Gee.docx - 1:17 [When I am out of campus I use ..] (39:39) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Finances - Family: User needs]
No memos

When I am out of campus I use my data for minor things such as social networks, Facebook, WhatsApp etc. But if I had to look-up something on utube you know like watching a clip for like 5minutes, it takes about 100MB and that costs like 30 bucks so yah.

P 1: Bra Gee.docx - 1:18 [Yes, because most of the time ..] (43:43) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Finances - Family: User needs]
No memos

Yes, because most of the time when I am outside Wits I am on WhatsApp. So yeah you could say using data is more accessible. I do not feel the need to connect to Wi-Fi just so I could communicate with someone on WhatsApp or Facebook. I mean it does use my data but not much of it. You get me? But if I was to do or watch a video or something that requires a lot of data, I would consider having or using Wi-Fi from the city. I don't know if I made myself clear.

P 2: Maria.docx - 2:16 [people that can't afford to bu..] (49:49) (Super)
Codes: [Finances - Family: User needs]
No memos

people that can't afford to buy data, for example students, high school kids. Those are going to be there the whole time, because we are a generation that we were brought up in technology. We have these things with us, around us, and if I can't afford to buy data every day, off course I am going to use city hot spots

P 3: Andile.docx - 3:3 [it is free. I can update my so..] (10:10) (Super)
Codes: [Cost saving - Family: Value of Smart City Services] [Finances - Family: User needs]
No memos

it is free. I can update my software, because you know updating software uses a lot of data

P 3: Andile.docx - 3:5 [I use it for things that requi..] (20:20) (Super)
Codes: [Cost saving - Family: Value of Smart City Services] [Finances - Family: User needs]
No memos

I use it for things that require a lot of data, because I wouldn't want to buy data every week

P 3: Andile.docx - 3:25 [If you look at studies, one of..] (48:48) (Super)
Codes: [Cost saving - Family: Value of Smart City Services] [Finances - Family: User needs]
No memos

If you look at studies, one of the main reasons why people in Africa don't use internet is because it is expensive and it is not available. So if you have free Wi-Fi then the whole notion will not exist anymore and people will also use government e-services. Because people don't use government e-services because they don't have connectivity

P 3: Andile.docx - 3:58 [I think the first one is just ..] (100:100) (Super)
Codes: [Cost saving - Family: Value of Smart City Services] [Finances - Family: User needs]
No memos

I think the first one is just connectivity, like access. Not everyone has access to the internet on a regular basis. For some people, they only get it when they are at work, school or university. But if they are just there at home, they don't have access to the internet and they need to use their data and data is expensive

P 7: Samie.docx - 7:13 [Uhm usually I have enough data..] (22:22) (Super)
Codes: [Finances - Family: User needs]
No memos

Uhm usually I have enough data, personal data to use, so it's not like a need for public Wi-Fi I already have enough personal Wi-Fi. So if I do run out of personal data, I usually just buy, it’s easier to buy data with my standard bank app

P 9: Isaac.docx - 9:4 [I also use mobile data to conn..] (14:14) (Super)
Codes: [Finances - Family: User needs]
No memos

I also use mobile data to connect to the internet, but it is also about affordability, If I could afford to get a lot of mega-bytes then I would use my mobile data

P12: Thabo.docx - 12:12 [for me free Wi-Fi does it hey ..] (20:20) (Super)
Codes: [Finances - Family: User needs]
No memos

for me free Wi-Fi does it hey (Laughs) free Wi-Fi (responded jovially and excitedly) because most of the time I download movies and they take two hours and downloading something for two hours cost a lot of data, so with free Wi-Fi you just download unlimited

Personal Circumstances

P 2: Maria.docx - 2:8 [I rarely use government servic..] (31:31) (Super)
Codes: [Personal interests - Family: User needs]
No memos

I rarely use government services or what do you call it, municipal things or city utilities and things. I don't make payments through that so I don't need to have access to them. If I were to access it I probably would access it if I wanted to know where a certain Hotspot in Joburg that I don't know about is. If not it would definitely be personal staff

P 2: Maria.docx - 2:9 [I think I would use it for lei..] (33:33) (Super)
Codes: [Personal interests - Family: User needs]
No memos

I think I would use it for leisure, If I wanted to find certain things about where can I go to chill with my friends, If the need came for me to chill in Joburg central

P 2: Maria.docx - 2:10 [also if I wanted to find infor..] (33:33) (Super)
Codes: [Personal interests - Family: User needs]
No memos

also if I wanted to find information about where is the government, I mean certain government services I don't know.

P 2: Maria.docx - 2:26 [I probably would use it for (P..] (72:72) (Super)
Codes: [Personal interests - Family: User needs]
No memos

I probably would use it for (Pause) uh, like for bills, I would use it for events, and I would use it for general information as well

P 2: Maria.docx - 2:28 [I have never really had a reas..] (82:82) (Super)
Codes: [Personal interests - Family: User needs] [School - Family: User needs]
No memos

I have never really had a reason to go to them. Well I am a student, besides my research part where I have to search what is going on in the city, what type of development plan they have for the city, besides that there is nothing else I am using it for

P 2: Maria.docx - 2:34 [It was just general informatio..] (112:112) (Super)
Codes: [Personal interests - Family: User needs]
No memos

It was just general information about the city of Johannesburg, and also what they do, contact details, and plans they have in place, what they are working on

P 2: Maria.docx - 2:41 [It depends on what the need is..] (136:136) (Super)

Codes: [Personal interests - Family: User needs] [Profession - Family: User needs] [School - Family: User needs]
No memos

It depends on what the need is. So if I am just looking for general information, I don't know, I might use it. It depends what the need is. Whether personal, academic, work one, I might use it. If I need to know who is the current Meyer in the city of Johannesburg I would go to the website and I would check because I am assuming that their information will be updated

P 3: Andile.docx - 3:31 [I have used the SARS one, beca..] (56:56) (Super)
Codes: [Personal interests - Family: User needs]
No memos

I have used the SARS one, because it is the only one I have a need for

P 3: Andile.docx - 3:40 [For now I have not tried them ..] (68:68) (Super)
Codes: [Advertisement - Family: Awareness] [Knowledge - Family: Awareness] [Personal interests - Family: User needs]
No memos

For now I have not tried them because I don't see the need. Maybe if I saw a need I would have tried. Or maybe if they market themselves properly , I think that is why most people are not using it. Because I think people would want to know what is happening in the city. But then if they are quiet, the city of Johannesburg, and don't tell us then people will not be active and go on the websites. It is a challenge

P 3: Andile.docx - 3:43 [I would use it for billing, or..] (74:74) (Super)
Codes: [Personal interests - Family: User needs]
No memos

I would use it for billing, or if I had a complaint to make about the city

P 3: Andile.docx - 3:47 [It tried for Rea-vaya, there w..] (78:78) (Super)
Codes: [Convenience - Family: Value of Smart City Services] [Cost saving - Family: Value of Smart City Services] [Personal interests - Family: User needs] [Timing of need - Family: User needs] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

It tried for Rea-vaya, there was a strike so I was trying to check if the city of Johannesburg has updated information about the strike, like when is it going to end, you know, and when the strike ends what routes will be coming back. So I went to the website and I was like ah, this people, this information is not updated. They still tell you what Rea-vaya is, but there was nothing really specific about the strike and progress of the strike. So it was really frustrating. And then I tried sending them queries online, till this day I am still waiting for a response.

P 3: Andile.docx - 3:56 [But I think like you know some..] (98:98) (Super)
Codes: [Personal interests - Family: User needs] [Utility - Family: Effectiveness of Smart City Services]
No memos

But I think like you know sometimes you are always looking for small events as well, not like these well-known festivals, like you want something that is like special and small. Like they must do something for the little people as well. They should be more informed about events around the city.

P 4: Mrs Jane.docx - 4:11 [The only time when I use gover..] (37:37) (Super)
Codes: [Personal interests - Family: User needs]

No memos

The only time when I use government websites is when I use the home affairs one, and when I check my traffic fines on the traffic website

P 4: Mrs Jane.docx - 4:13 [Sometimes I even check myself ..] (39:39) (Super)
Codes: [Personal interests - Family: User needs]
No memos

Sometimes I even check myself whether I am still single or married. Or sometimes I check something like how much does the passport cost now, you know things like that

P 4: Mrs Jane.docx - 4:15 [I check my marital status, I c..] (47:47) (Super)
Codes: [Personal interests - Family: User needs]
No memos

I check my marital status, I check contact details, I check when I want to apply for passport or if there is other information that I am looking for relating to home affairs, when I want to apply for a birth certificate or all that and for jobs as well.

P 5: Jacob.docx - 5:5 [I was using it because I was t..] (22:22) (Super)
Codes: [Personal interests - Family: User needs]
No memos

I was using it because I was there and I was bored and I needed Wi-Fi. Nowadays Wi-Fi is a requirement, it tends to be a basic need

P 5: Jacob.docx - 5:23 [I only use the city of Johanne..] (53:53) (Super)
Codes: [Personal interests - Family: User needs]
No memos

I only use the city of Johannesburg one to check the load shedding schedules and the affected areas. I was concerned about load shedding in my area and when it will happen, at what times. Sometimes I use it to find information, for instance, sometimes people will be digging at the side of the road and you don't know what is happening and when you go to the websites you will informed that it is an expansion of fiber, electric cables, or expansion of other certain cables. So I mean sometimes curiosity strikes me when I see these things and I look up to see what is the activity and how long will the people be there working. Because you find that it is a small project and even if it takes two weeks it is an inconvenience in the area that I live in. And I would see that they are busy but I wouldn't know what they are busy with. So my curiosity seeing things of the ground compels me to the websites to find information. And having being around technology you will know how and where to find information

P 5: Jacob.docx - 5:24 [It is what affects me on the g..] (55:55) (Super)
Codes: [Personal interests - Family: User needs]
No memos

It is what affects me on the ground that influences my need to find information. Load shedding affects me, if I am from work I go home and it is dark but when I left they were on, then I will be affected. The following day I will have to inquire about loading shedding, I will go look up the load shedding schedule. Or if the road I use is closed or there is a detour I will have to look and see how long it will be closed and what are they doing with the road, what is the construction about. So whatever affects me on the ground makes me go look up the websites for information.

P 5: Jacob.docx - 5:27 [Visit the housing development ..] (59:59) (Super)

Codes: [Personal interests - Family: User needs]
No memos

Visit the housing development Agency also to see the next project of building free houses for the people, their population analysis, yah, those sort of things, I engage with interactive e-government sites

P 8: Baba Khumalo.docx - 8:15 [It also comes down to paradigm..] (34:34) (Super)
Codes: [Familiarity - Family: Effectiveness of Smart City Services] [Knowledge - Family: Awareness] [Personal interests - Family: User needs]
No memos

It also comes down to paradigm shift, shifting to using the websites when we need something and making it part and part of our lives

P 8: Baba Khumalo.docx - 8:18 [Mostly people are ignorant, th..] (32:32) (Super)
Codes: [Personal interests - Family: User needs]
No memos

Mostly people are ignorant, they don't take things seriously. People feel like they should go straight to the government department to ask and get information they need.

P 8: Baba Khumalo.docx - 8:19 [It also comes down to paradigm..] (34:34) (Super)
Codes: [Personal interests - Family: User needs]
No memos

It also comes down to paradigm shift, shifting to using the websites when we need something and making it part and part of our lives

P 8: Baba Khumalo.docx - 8:20 [some people are still used to ..] (36:36) (Super)
Codes: [Personal interests - Family: User needs]
No memos

some people are still used to the old fashioned style that if you need information about something you go to the government department to ask

P 9: Isaac.docx - 9:16 [I think most of us are also ig..] (41:41) (Super)
Codes: [Knowledge - Family: Awareness] [Personal interests - Family: User needs]
No memos

I think most of us are also ignorant, we are not doing enough to utilize all the resources made available to us, so people should be educated about these resources, and also the effort should also be coming from us, the once who want those services

P10: Peter.docx - 10:3 [I do a lot of research one for..] (4:4) (Super)
Codes: [Personal interests - Family: User needs]
No memos

I do a lot of research one for church things, I am more into church so I do a lot of research for church things and also for work related things

P10: Peter.docx - 10:9 [I was checking the Johannesbur..] (18:18) (Super)
Codes: [Personal interests - Family: User needs]
No memos

I was checking the Johannesburg one today, I have property in Johannesburg, so on a monthly basis I visit the city website to check housing developments. And I know I am registered for traffic fines, I check that one, I check also my bills for electricity, and I check the home affairs one now and then

P11: Steven.docx - 11:2 [I use it for sports informatio..] (8:8) (Super)
Codes: [Personal interests - Family: User needs]
No memos

I use it for sports information, music, chatting,

P11: Steven.docx - 11:17 [I don't really follow informat..] (33:33) (Super)
Codes: [Personal interests - Family: User needs]
No memos

I don't really follow information about the city, some staff I just get by getting around, I ask around, I get information from rumors, I talk to people, I don't necessarily have to dig for it, like I am not really interested

P12: Thabo.docx - 12:1 [I used it for downloading soft..] (6:6) (Super)
Codes: [Personal interests - Family: User needs]
No memos

I used it for downloading software and movies

P12: Thabo.docx - 12:2 [Yes because I was not at schoo..] (10:10) (Super)
Codes: [Personal interests - Family: User needs]
No memos

Yes because I was not at school I used it to download and I used it for my personal things

P12: Thabo.docx - 12:5 [they should increase use yes, ..] (24:24) (Super)
Codes: [Personal interests - Family: User needs]
No memos

they should increase use yes, because it will help a lot of people you know, some people want to do research for school, some want to use it for their work, for me now sometimes I edit videos and I need software to help me edit, then I can sell the videos and make a living out of them.

Profession

P 1: Bra Gee.docx - 1:20 [But some people who work in co..] (53:53) (Super)
Codes: [Profession - Family: User needs] [Timing of need - Family: User needs]
No memos

But some people who work in companies and what not, they go out for lunch and they still want to do their work while they are there. So it is convenient for them. I have seen a lot of people who use public Wi-Fi, you know. But for me as a student my work is either in my room or library, and most of the time I use Wits Wi-Fi you know. But if I worked in Braam for instance, it would be a differentstory. If I go out to KFC, I am still waiting for a business call or typing a report and I want to look up something, I would want to use the Wi-Fi. And I also think the Wi-Fi around the city attracts customers.

P 2: Maria.docx - 2:22 [I would like to think that it ..] (64:64) (Super)

Codes: [Profession - Family: User needs]
No memos

I would like to think that it depends on ones level of involvement and also what type of job they do.

P 2: Maria.docx - 2:41 [It depends on what the need is..] (136:136) (Super)
Codes: [Personal interests - Family: User needs] [Profession - Family: User needs] [School - Family: User needs]
No memos

It depends on what the need is. So if I am just looking for general information, I don't know, I might use it. It depends what the need is. Whether personal, academic, work one, I might use it. If I need to know who is the current Meyer in the city of Johannesburg I would go to the website and I would check because I am assuming that their information will be updated

P 2: Maria.docx - 2:43 [So it would be my school work...] (138:138) (Super)
Codes: [Profession - Family: User needs] [School - Family: User needs]
No memos

So it would be my school work. Mostly school work, but also my profession, if I wanted to understand something about my job,for example, if I needed to find out who is the minister of so and so, and I need to relate that information to my students, then I would use it.

P 4: Mrs Jane.docx - 4:1 [I was actually trying to get t..] (6:6) (Super)
Codes: [Profession - Family: User needs]
No memos

I was actually trying to get to my Wits website to renew some books and to read some emails, I was using my phone

P 4: Mrs Jane.docx - 4:2 [Sometimes I am not at work and..] (10:10) (Super)
Codes: [Convenience - Family: Value of Smart City Services] [Profession - Family: User needs]
No memos

Sometimes I am not at work and there is an urgent email that I need to read and respond to, so I quickly go to the nearest McDonalds for Wi-Fi because I don't have it at home, then I quickly go to McDonalds to access my emails

P 4: Mrs Jane.docx - 4:10 [the one that I normally visit ..] (37:37) (Super)
Codes: [Profession - Family: User needs]
No memos

the one that I normally visit is the home affairs one. I visited it because I was training students to show them that they can go to the home affairs website to see their marital status.

P 4: Mrs Jane.docx - 4:12 [For the home affairs one, I wa..] (39:39) (Super)
Codes: [Profession - Family: User needs]
No memos

For the home affairs one, I was training some high school kids for them to check and know their marital status. Because sometimes you are married on your status while you are not even aware that you are married. At that time my work influenced my need.

P 5: Jacob.docx - 5:26 [As an IT specialist, I did som..] (57:57) (Super)
Codes: [Profession - Family: User needs]
No memos

As an IT specialist, I did some jobs that offer us an opportunity to know about government websites. Part of my job encouraged me to know. I learnt about them through my job and through being a specialist. We create websites that encourage public participation.

P10: Peter.docx - 10:4 [I do a lot of research on the ..] (4:4) (Super)
Codes: [Profession - Family: User needs]
No memos

I do a lot of research on the internet to find out what other companies are doing, I am in the gas industry so I do a lot of research in that area. So I use my data

School or study needs

P 2: Maria.docx - 2:11 [So I would use it for leisure ..] (33:33) (Super)
Codes: [School - Family: User needs]
No memos

So I would use it for leisure but I would also use it for my studies as well. If I wanted to know something about the city which I can use within my studies, obviously I would want to use it

P 2: Maria.docx - 2:17 [And on a positive light, some ..] (49:49) (Super)
Codes: [School - Family: User needs]
No memos

And on a positive light, some students might use it to do their assignments, to do their work, and use it to find information for research.

P 2: Maria.docx - 2:28 [I have never really had a reas..] (82:82) (Super)
Codes: [Personal interests - Family: User needs] [School - Family: User needs]
No memos

I have never really had a reason to go to them. Well I am a student, besides my research part where I have to search what is going on in the city, what type of development plan they have for the city, besides that there is nothing else I am using it for

P 2: Maria.docx - 2:31 [My studies] (102:102) (Super)
Codes: [School - Family: User needs]
No memos

My studies

P 2: Maria.docx - 2:40 [If I am using it for my studie..] (134:134) (Super)
Codes: [School - Family: User needs]
No memos

If I am using it for my studies and I need to get government information and that is the only platform that is there, I would use it

P 2: Maria.docx - 2:41 [It depends on what the need is..] (136:136) (Super)
Codes: [Personal interests - Family: User needs] [Profession - Family: User needs] [School - Family: User needs]
No memos

It depends on what the need is. So if I am just looking for general information, I don't know, I might use it. It depends what the need is. Whether personal, academic, work one, I might use it. If I need to know who is the current Meyer in the city of Johannesburg I would go to the website and I would check because I am assuming that their information will be updated

P 2: Maria.docx - 2:43 [So it would be my school work...] (138:138) (Super)
Codes: [Profession - Family: User needs] [School - Family: User needs]
No memos

So it would be my school work. Mostly school work, but also my profession, if I wanted to understand something about my job,for example, if I needed to find out who is the minister of so and so, and I need to relate that information to my students, then I would use it.

P 7: Samie.docx - 7:7 [Well my school research, I mig..] (31:31) (Super)
Codes: [School - Family: User needs]
No memos

Well my school research, I might continue using it for information, but I am not sure if will ever use the e-services

P 9: Isaac.docx - 9:3 [Accessing internet makes thing..] (12:12) (Super)
Codes: [School - Family: User needs]
No memos

Accessing internet makes things easier because nowadays most important information you find on the web, all the answers, sometimes when we are lazy to go through our books and all

P10: Peter.docx - 10:7 [it is good, but not for us gro..] (12:12) (Super)
Codes: [Age - Family: User needs] [School - Family: User needs]
No memos
it is good, but not for us grownups (Laughs) but for youngsters, especially students, the city has a lot of students and during our time when we were studying it was very hard to get access to internet and now Wi-Fi is free and easy (sounding excited) you can do a lot of research you can download, you can do anything, so it is very good, but not for old people (Laughs again)

Timing of need

P 1: Bra Gee.docx - 1:1 [I had to download some WhatsApp..] (5:5) (Super)
Codes: [Timing of need - Family: User needs]
No memos

I had to download some WhatsApp thing, I think the version of WhatsApp I was using was outdated so I needed Wi-Fi service, and so I just stood there and downloaded WhatsApp while I was waiting for my meal.

P 1: Bra Gee.docx - 1:12 [I didn’t have cell-phone banki..] (27:27) (Super)
Codes: [Timing of need - Family: User needs]
No memos

I didn’t have cell-phone banking at the time, so you know it is very convenient to buy airtime on your cell-phone with cell-phone banking. So I just didn't feel like going out to get airtime, leaving Wi-Fi in the shop. And I was already waiting there to buy takeout’s anyway.

P 1: Bra Gee.docx - 1:20 [But some people who work in co..] (53:53) (Super)
Codes: [Profession - Family: User needs] [Timing of need - Family: User needs]
No memos

But some people who work in companies and what not, they go out for lunch and they still want to do their work while they are there. So it is convenient for them. I have seen a lot of people who use public Wi-Fi, you know. But for me as a student my work is either in my room or library, and most of the time I use Wits Wi-Fi you know. But if I worked in Braam for instance, it would be a different story. If I go out to KFC, I am still waiting for a business call or typing a report and I want to look up something, I would want to use the Wi-Fi. And I also think the Wi-Fi around the city attracts customers.

P 3: Andile.docx - 3:10 [Thing is when you wait for a b..] (26:26) (Super)
Codes: [Timing of need - Family: User needs]
No memos

Thing is when you wait for a bus, you know a bus takes time to come, so you must entertain yourself while you are waiting there. So mainly it was about entertainment while waiting for the bus to come.

P 3: Andile.docx - 3:11 [Because I am there most of the..] (30:30) (Super)
Codes: [Convenience - Family: Value of Smart City Services] [Cost saving - Family: Value of Smart City Services] [Timing of need - Family: User needs]
No memos

Because I am there most of the time, I take the bus there. Like on average you would probably wait for around 10minutes for a bus to come, if you are lucky. So you would want to sit down and be comfortable, and Wi-Fi there is free, you can just switch it on and use it.

P 3: Andile.docx - 3:39 [My problem with government web..] (66:66) (Super)
Codes: [Pertinence - Family: Value of Smart City Services] [Timing of need - Family: User needs]
No memos

My problem with government websites is that when you go on their websites some of the staff is not relevant for you at that moment in time

P 3: Andile.docx - 3:47 [It tried for Rea-vaya, there w..] (78:78) (Super)
Codes: [Convenience - Family: Value of Smart City Services] [Cost saving - Family: Value of Smart City Services] [Personal interests - Family: User needs] [Timing of need - Family: User needs] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

It tried for Rea-vaya, there was a strike so I was trying to check if the city of Johannesburg has updated information about the strike, like when is it going to end, you know, and when the strike ends what routes will be coming back. So I went to the website and I was like ah, these people, this information is not updated. They still tell you what Rea-vaya is, but there was nothing really specific about the strike and progress of the strike. So it was really frustrating. And then I tried sending them queries online, till this day I am still waiting for a response.

P 6: Max.docx - 6:1 [When I am off-campus the optio..] (6:6) (Super)
Codes: [Timing of need - Family: User needs]
No memos

When I am off-campus the options are there at mug and bean and at wimpy but I am there for the purpose of eating not for Wi-Fi, so I will have to say no. I know the options are there but I just don't use them.

P 6: Max.docx - 6:2 [Thing is I buy data because I ..] (10:10) (Super)
Codes: [Timing of need - Family: User needs]
No memos

Thing is I buy data because I know when I am going to use it, so If I am in a city hotspot where Wi-Fi is available, chances are I am not going to use it because I am not there to be on the internet. Like when I am at the mall, I am not there for internet, I am there for shopping. And when I am in a restaurant, I am usually with a person, I am not there alone, so I will be interacting more with the person as opposed to being on the internet, on social media and staff

P 6: Max.docx - 6:3 [At that point in time when the..] (10:10) (Super)
Codes: [Timing of need - Family: User needs]
No memos

At that point in time when they are available, I don't really need them

P 6: Max.docx - 6:7 [It would be helpful especially..] (22:22) (Super)
Codes: [Timing of need - Family: User needs]
No memos

It would be helpful especially in a situation where you need the Wi-Fi, like when you are riding Gautrain, you are given these bus routes but you don't know the route you want, and you always have to go to these particular board as opposed to you accessing it online on your phone and it being at your convenience. So Wi-Fi will just make everything convenient for the traveler

3. EFFECTIVENESS

Familiarity

P 2: Maria.docx - 2:45 [Usability was okay, it was use..] (142:142) (Super)
Codes: [Familiarity - Family: Effectiveness of Smart City Services] [Usabiity - Family: Effectiveness of Smart City Services]
No memos

Usability was okay, it was useable. Familiarity, the website is not something that am used to, so it wasn't really familiar because it was my first time using it. But it was useable because I got what I wanted. Things were laid out clearly. Yah

P 3: Andile.docx - 3:14 [The one in diepkloof, soccer c..] (36:36) (Super)
Codes: [Familiarity - Family: Effectiveness of Smart City Services] [Knowledge - Family: Awareness] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

The one in diepkloof, soccer city, FNB stadium. I can take you one day if you want, you will see them there, they are always there, everyone without a fail, they are there. On weekends, you will find most people them there

P 3: Andile.docx - 3:15 [If I had to choose I would tak..] (40:40) (Super)

Codes: [Familiarity - Family: Effectiveness of Smart City Services] [Irreplaceability - Family: Value of Smart City Services] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

If I had to choose I would take the city of Johannesburg one, yah like it works. They must make it available around the whole city (sounding excited), like the city of Tshwane

P 3: Andile.docx - 3:55 [I read the Guardian, and I thi..] (96:96) (Super)
Codes: [Familiarity - Family: Effectiveness of Smart City Services] [Reliability of alternative source - Family: Alternative Information Sources] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

I read the Guardian, and I think I check it like about 5 or 6 times a day. And each time I check there will be something new posted there. Whereas with the city of Johannesburg website, you might go there twice a week and you will find the same information. I mean there is always something happening in the city. Like if you look at Joburg theatre, there is always a play there. So why don't they have something attractive like where to go, what does the city have

P 4: Mrs Jane.docx - 4:25 [You must remember that other p..] (62:62) (Super)
Codes: [Familiarity - Family: Effectiveness of Smart City Services]
No memos

You must remember that other people are techno-phonic, they don't like technology

P 8: Baba Khumalo.docx - 8:15 [It also comes down to paradigm..] (34:34) (Super)
Codes: [Familiarity - Family: Effectiveness of Smart City Services] [Knowledge - Family: Awareness] [Personal interests - Family: User needs]
No memos

It also comes down to paradigm shift, shifting to using the websites when we need something and making it part and part of our lives

P11: Steven.docx - 11:6 [Resetting the settings could b..] (18:18) (Super)
Codes: [Familiarity - Family: Effectiveness of Smart City Services]
No memos

Resetting the settings could be problematic, especially for old people and people who do not know how to change the settings, it might be very difficult for them to use the Wi-Fi, so some people might know how to change them and some people might not know, like you know when you are with your mother she will ask you to do it for her, but some people may not have anyone to help them

Usabiity

P 1: Bra Gee.docx - 1:4 [sometimes You know the Wi-Fi i..] (13:13) (Super)
Codes: [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

sometimes You know the Wi-Fi is very slow and it is not as effective as the one I get at school

P 2: Maria.docx - 2:44 [I think it was easy to navigat..] (140:140) (Super)

Codes: [Usabiity - Family: Effectiveness of Smart City Services]
No memos

I think it was easy to navigate, it wasn't so complicated

P 2: Maria.docx - 2:45 [Usability was okay, it was use..] (142:142) (Super)
Codes: [Familiarity - Family: Effectiveness of Smart City Services] [Usabiity - Family: Effectiveness of Smart City Services]
No memos

Usability was okay, it was useable. Familiarity, the website is not something that I am used to, so it wasn't really familiar because it was my first time using it. But it was useable because I got what I wanted. Things were laid out clearly. Yah

P 2: Maria.docx - 2:50 [You see SARS? SARS is a govern..] (164:164) (Super)
Codes: [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

You see SARS? SARS is a government entity, and for tax filing, there are times when they open their windows and I have used it, it is quite efficient. But now if SARS every time I am trying to submit something there is problem, I wouldn't use it. Because I would be thinking I am wasting my time here, this thing is wasting my time

P 2: Maria.docx - 2:52 [They need to make sure that if..] (164:164) (Super)
Codes: [Usabiity - Family: Effectiveness of Smart City Services]
No memos

They need to make sure that if I am stuck or don't know how to use it then I could get help.

P 3: Andile.docx - 3:1 [Yes, I use it every day (respo..] (8:8) (Super)
Codes: [Usabiity - Family: Effectiveness of Smart City Services]
No memos

Yes, I use it every day (responded with excitement)

P 3: Andile.docx - 3:2 [With my phone, I use my phone...] (10:10) (Super)
Codes: [Connectivity - Family: Access] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

With my phone, I use my phone. So when I come to work I use the bus, so I use the city of Johannesburg Wi-Fi available at the rea-vaya stations. And it is fast, it is free. I can update my software, because you know updating software uses a lot of data

P 3: Andile.docx - 3:6 [Not only to save money, but al..] (22:22) (Super)
Codes: [Region of stay - Families (2): Access, User needs] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

Not only to save money, but also availability and because it is quick. You know like sometimes in Soweto, MTN network is bad. So it is good to get Wi-Fi that is fast and quicker, so yah I prefer it because of that actually, besides saving, the speed of it.

P 3: Andile.docx - 3:12 [95% of the time it works] (32:32) (Super)
Codes: [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

95% of the time it works

P 3: Andile.docx - 3:13 [People know, because if you pa..] (34:34) (Super)
Codes: [Knowledge - Family: Awareness] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

People know, because if you pass by the Rea-vaya stations, you will always see young people with their phone and their laptops, closer to the station, like 10 meters away from the station. They are there because they are connecting to and using the Wi-Fi there. So they know. You always look and be like Ae! Maan, why is there always young people here

P 3: Andile.docx - 3:14 [The one in diepkloof, soccer c..] (36:36) (Super)
Codes: [Familiarity - Family: Effectiveness of Smart City Services] [Knowledge - Family: Awareness] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

The one in diepkloof, soccer city, FNB stadium. I can take you one day if you want, you will see them there, they are always there, everyone without a fail, they are there. On weekends, you will find most people them there

P 3: Andile.docx - 3:15 [If I had to choose I would tak..] (40:40) (Super)
Codes: [Familiarity - Family: Effectiveness of Smart City Services] [Irreplaceability - Family: Value of Smart City Services] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

If I had to choose I would take the city of Johannesburg one, yah like it works. They must make it available around the whole city (sounding excited), like the city of Tshwane

P 3: Andile.docx - 3:17 [It is accessible, it is fast, ..] (42:42) (Super)
Codes: [Connectivity - Family: Access] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

It is accessible, it is fast, it is free, even though we pay with our taxes (Laughs). But yah it is accessible it is fast. I mean like that is always what you want from your internet connection, speed and reliability. And the city of Johannesburg Wi-Fi has that. And it is better compared to other networks, your Vodacom's and your MTN's. I mean those guys are slow hey, but the city of Johannesburg one is fast and it is always there. And people use it, they trust it

P 3: Andile.docx - 3:38 [I haven't used it, I haven't. ..] (66:66) (Super)
Codes: [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

I haven't used it, I haven't. But there are times when I tried going to the website because I wanted to do something but I couldn't find what I was looking for. Well I found the document I was looking for but it was

outdated. My problem with government websites is that when you go on their websites some of the staff is not relevant for you at that moment in time

P 3: Andile.docx - 3:44 [But you know when you send com..] (76:76) (Super)
Codes: [Pertinence - Family: Value of Smart City Services] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

But you know when you send complaints through these forums they don't get back to you

P 3: Andile.docx - 3:45 [sometimes it doesn't work. You..] (76:76) (Super)
Codes: [Reliability of alternative source - Family: Alternative Information Sources] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

Sometimes it doesn't work. You know the reason why their twitter is efficient and the websites are not, like the city of Johannesburg when you tweet them and say: hey but what's happening why is my electricity off, why is there no water, like they answer you quickly. But then if you ask that question through their websites, they will take like two days to respond

P 3: Andile.docx - 3:46 [I think if there could be cons..] (76:76) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Convenience - Family: Value of Smart City Services] [Irreplaceability - Family: Value of Smart City Services] [Pertinence - Family: Value of Smart City Services] [Reliability of alternative source - Family: Alternative Information Sources] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

I think if there could be consistency in how the different departments under the city of Johannesburg work, then I think people would trust it more. They can even learn from the city of Johannesburg twitter. They must have the same implementation team or strategy, then I would use it

P 3: Andile.docx - 3:47 [It tried for Rea-vaya, there w..] (78:78) (Super)
Codes: [Convenience - Family: Value of Smart City Services] [Cost saving - Family: Value of Smart City Services] [Personal interests - Family: User needs] [Timing of need - Family: User needs] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

It tried for Rea-vaya, there was a strike so I was trying to check if the city of Johannesburg has updated information about the strike, like when is it going to end, you know, and when the strike ends what routes will be coming back. So I went to the website and I was like ah, this people, this information is not updated. They still tell you what Rea-vaya is, but there was nothing really specific about the strike and progress of the strike. So it was really frustrating. And then I tried sending them queries online, till this day I am still waiting for a response.

P 3: Andile.docx - 3:52 [I think first ne, a website sh..] (90:90) (Super)
Codes: [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

I think first ne, a website should captivate you, you should be like WOW! now we are talking. But sometimes I look at the city of Johannesburg website and I am like hae! no like the city of Johannesburg website is too plain. It is like white, I think it is still white and orange, something like that. And sometimes the links are outdated and then when you try to communicate with the city of Johannesburg people through the website they don't respond

P 3: Andile.docx - 3:53 [I mean like there are other we..] (92:92) (Super)
Codes: [Trust in technology - Family: Trust] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

I mean like there are other websites that I don't trust but I still go back to them, because they have that thing you know, they have that attraction that pulls you to it. And you don't really trust it but you still come back to see what they have. But the city of Johannesburg website is like you don't trust them but they also don't attract you to come back. They don't have that thing you know, like that website thing

P 3: Andile.docx - 3:54 [It's more like they should hav..] (94:94) (Super)
Codes: [Reliability of alternative source - Family: Alternative Information Sources] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

It's more like they should have their information updated like on a regular basis. Like twitter, twitter updates itself like every five seconds. Must I give you a newspaper example too?

P 3: Andile.docx - 3:55 [I read the Guardian, and I thi..] (96:96) (Super)
Codes: [Familiarity - Family: Effectiveness of Smart City Services] [Reliability of alternative source - Family: Alternative Information Sources] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

I read the Guardian, and I think I check it like about 5 or 6 times a day. And each time I check there will be something new posted there. Whereas with the city of Johannesburg website, you might go there twice a week and you will find the same information. I mean there is always something happening in the city. Like if you look at Joburg theatre, there is always a play there. So why don't they have something attractive like where to go, what does the city have

P 3: Andile.docx - 3:62 [Because I think if they dedica..] (102:102) (Super)
Codes: [Cost saving - Family: Value of Smart City Services] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

Because I think if they dedicate more time fixing e-services, then they will probably have less people coming to their offices to ask stupid questions at times. If they dedicate a better team to the whole electronic thing , I mean people can communicate with them from home and from their offices rather than being inconvenienced or the service provider working there being inconvenienced by me coming all the way , spending an hour there, fighting with the service provider and causing a scene. You can just do it electronically and it can be sorted now

P 3: Andile.docx - 3:63 [So I think when they say they ..] (102:102) (Super)
Codes: [Cost saving - Family: Value of Smart City Services] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

So I think when they say they want to move towards being a smart City, they should want to see less people coming to their offices to ask them. I mean people should engage with technology, it is faster, and it is more efficient. And it is actually nicer communicating with someone online rather than going there fighting. So the websites are needed for sure. I mean we cannot be a smart city if we don't have technology

P 4: Mrs Jane.docx - 4:16 [It used to be user friendly as..] (49:49) (Super)
Codes: [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]

No memos

It used to be user friendly as I said, but now for some reason when I try to open it it said it was being reconstructed, so I couldn't get what I wanted

P 4: Mrs Jane.docx - 4:18 [Government information is reli..] (53:53) (Super)
Codes: [Trust in the information provided - Family: Trust] [Usabiity - Family: Effectiveness of Smart City Services]
No memos

Government information is reliable on the websites as well

P 4: Mrs Jane.docx - 4:19 [Yes, I would continue to use t..] (57:57) (Super)
Codes: [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

Yes, I would continue to use the websites, they are easy, and they are easy to know some of the things, people are not aware of most of the things available on the websites

P 6: Max.docx - 6:5 [I think when you use it there ..] (20:20) (Super)
Codes: [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

I think when you use it there will be connectivity issues, well it will connect but it will not connect often, and you can't really do anything, you can't really update there, so it's not really helping me to actually connect so I just don't use it. There are problems, they do frustrate if it is a free service

Utility

P 1: Bra Gee.docx - 1:4 [sometimes You know the Wi-Fi i..] (13:13) (Super)
Codes: [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

sometimes You know the Wi-Fi is very slow and it is not as effective as the one I get at school

P 2: Maria.docx - 2:49 [So if I need to go and use the..] (160:160) (Super)
Codes: [Utility - Family: Effectiveness of Smart City Services]
No memos

So if I need to go and use them, I will go and use it. They just need to make sure it works

P 2: Maria.docx - 2:50 [You see SARS? SARS is a govern..] (164:164) (Super)
Codes: [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

You see SARS? SARS is a government entity, and for tax filing, there are times when they open their windows and I have used it, it is quite efficient. But now if SARS every time I am trying to submit something there is

problem, I wouldn't use it. Because I would be thinking I am wasting my time here, this thing is wasting my time

P 3: Andile.docx - 3:2 [With my phone, I use my phone...] (10:10) (Super)
Codes: [Connectivity - Family: Access] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

With my phone, I use my phone. So when I come to work I use the bus, so I use the city of Johannesburg Wi-Fi available at the rea-vaya stations. And it is fast, it is free. I can update my software, because you know updating software uses a lot of data

P 3: Andile.docx - 3:6 [Not only to save money, but al..] (22:22) (Super)
Codes: [Region of stay - Families (2): Access, User needs] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

Not only to save money, but also availability and because it is quick. You know like sometimes in Soweto, MTN network is bad. So it is good to get Wi-Fi that is fast and quicker, so yah I prefer it because of that actually, besides saving, the speed of it.

P 3: Andile.docx - 3:12 [95% of the time it works] (32:32) (Super)
Codes: [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

95% of the time it works

P 3: Andile.docx - 3:13 [People know, because if you pa..] (34:34) (Super)
Codes: [Knowledge - Family: Awareness] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

People know, because if you pass by the Rea-vaya stations, you will always see young people with their phone and their laptops, closer to the station, like 10 meters away from the station. They are there because they are connecting to and using the Wi-Fi there. So they know. You always look and be like Ae! Maan, why is there always young people here

P 3: Andile.docx - 3:14 [The one in diepkloof, soccer c..] (36:36) (Super)
Codes: [Familiarity - Family: Effectiveness of Smart City Services] [Knowledge - Family: Awareness] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

The one in diepkloof, soccer city, FNB stadium. I can take you one day if you want, you will see them there, they are always there, everyone without a fail, they are there. On weekends, you will find most people them there

P 3: Andile.docx - 3:15 [If I had to choose I would tak..] (40:40) (Super)
Codes: [Familiarity - Family: Effectiveness of Smart City Services] [Irreplaceability - Family: Value of Smart City Services] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

If I had to choose I would take the city of Johannesburg one, yah like it works. They must make it available around the whole city (sounding excited), like the city of Tshwane

P 3: Andile.docx - 3:17 [It is accessible, it is fast, ..] (42:42) (Super)
Codes: [Connectivity - Family: Access] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

It is accessible, it is fast, it is free, even though we pay with our taxes(Laughs). But yah it is accessible it is fast. I mean like that is always what you want from your internet connection, speed and reliability. And the city of Johannesburg Wi-Fi has that. And it is better compared to other networks, your Vodacom's and your MTN's. I mean those guys are slow hey, but the city of Johannesburg one is fast and it is always there. And people use it, they trust it

P 3: Andile.docx - 3:21 [Yah, the minute I am close to ..] (44:44) (Super)
Codes: [Cost saving - Family: Value of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

Yah, the minute I am close to a station, I switch on the Wi-Fi on my phone, then I think after like 2 seconds it connects

P 3: Andile.docx - 3:28 [I think for now they need to f..] (50:50) (Super)
Codes: [Connectivity - Family: Access] [Region of stay - Families (2): Access, User needs] [Utility - Family: Effectiveness of Smart City Services]
No memos

I think for now they need to first identify areas where they can roll-out free Wi-Fi and test it out. I think they should maybe start with the townships first, like start in Soweto. They should start rolling it out in the townships, see how it works. Because I think if they introduce it to more people, it might become slower because of more people using it. So they should also increase their broadband, its capacity, then I would love the city of Johannesburg Wi-Fi more

P 3: Andile.docx - 3:38 [I haven't used it, I haven't. ..] (66:66) (Super)
Codes: [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

I haven't used it, I haven't. But there are times when I tried going to the website because I wanted to do something but I couldn't find what I was looking for. Well I found the document I was looking for but it was outdated. My problem with government websites is that when you go on their websites some of the staff is not relevant for you at that moment in time

P 3: Andile.docx - 3:44 [But you know when you send com..] (76:76) (Super)
Codes: [Pertinence - Family: Value of Smart City Services] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

But you know when you send complaints through this forums they don't get back to you

P 3: Andile.docx - 3:45 [sometimes it doesn't work. You..] (76:76) (Super)
Codes: [Reliability of alternative source - Family: Alternative Information Sources] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

sometimes it doesn't work. You know the reason why their twitter is efficient and the websites are not, like the city of Johannesburg when you tweet them and say: hey but what's happening why is my electricity off, why is there no water, like they answer you quickly. But then if you ask that question through their websites , they will take like two days to respond

P 3: Andile.docx - 3:46 [I think if there could be cons..] (76:76) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Convenience - Family: Value of Smart City Services] [Irreplaceability - Family: Value of Smart City Services] [Pertinence - Family: Value of Smart City Services] [Reliability of alternative source - Family: Alternative Information Sources] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

I think if there could be consistency in how the different departments under the city of Johannesburg work, then I think people would trust it more. They can even learn from the city of Johannesburg twitter. They must have the same implementation team or strategy, then I would use it

P 3: Andile.docx - 3:47 [It tried for Rea-vaya, there w..] (78:78) (Super)
Codes: [Convenience - Family: Value of Smart City Services] [Cost saving - Family: Value of Smart City Services] [Personal interests - Family: User needs] [Timing of need - Family: User needs] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

It tried for Rea-vaya, there was a strike so I was trying to check if the city of Johannesburg has updated information about the strike, like when is it going to end, you know, and when the strike ends what routes will be coming back. So I went to the website and I was like ah, this people, this information is not updated. They still tell you what Rea-vaya is, but there was nothing really specific about the strike and progress of the strike. So it was really frustrating. And then I tried sending them queries online, till this day I am still waiting for a response.

P 3: Andile.docx - 3:52 [I think first ne, a website sh..] (90:90) (Super)
Codes: [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

I think first ne, a website should captivate you, you should be like WOW! now we are talking. But sometimes I look at the city of Johannesburg website and I am like hae! no like the city of Johannesburg website is too plain. It is like white, I think it is still white and orange, something like that. And sometimes the links are outdated and then when you try to communicate with the city of Johannesburg people through the website they don't respond

P 3: Andile.docx - 3:53 [I mean like there are other we..] (92:92) (Super)
Codes: [Trust in technology - Family: Trust] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

I mean like there are other websites that I don't trust but I still go back to them, because they have that thing you know, they have that attraction that pulls you to it. And you don't really trust it but you still come back to see what they have. But the city of Johannesburg website is like you don't trust them but they also don't attract you to come back. They don't have that thing you know, like that website thing

P 3: Andile.docx - 3:54 [It's more like they should hav..] (94:94) (Super)
Codes: [Reliability of alternative source - Family: Alternative Information Sources] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

It's more like they should have their information updated like on a regular basis. Like twitter, twitter updates itself like every five seconds. Must I give you a news paper example too?

P 3: Andile.docx - 3:55 [I read the Guardian, and I thi..] (96:96) (Super)
Codes: [Familiarity - Family: Effectiveness of Smart City Services] [Reliability of alternative source - Family: Alternative Information Sources] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

I read the Guardian, and I think I check it like about 5 or 6 times a day. And each time I check there will be something new posted there. Whereas with the city of Johannesburg website, you might go there twice a week and you will find the same information. I mean there is always something happening in the city. Like if you look at Joburg theatre, there is always a play there. So why don't they have something attractive like where to go, what does the city have

P 3: Andile.docx - 3:56 [But I think like you know some..] (98:98) (Super)
Codes: [Personal interests - Family: User needs] [Utility - Family: Effectiveness of Smart City Services]
No memos

But I think like you know sometimes you are always looking for small events as well, not like these well-known festivals, like you want something that is like special and small. Like they must do something for the little people as well. They should be more informed about events around the city.

P 3: Andile.docx - 3:62 [Because I think if they dedica..] (102:102) (Super)
Codes: [Cost saving - Family: Value of Smart City Services] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

Because I think if they dedicate more time fixing e-services, then they will probably have less people coming to their offices to ask stupid questions at times. If they dedicate a better team to the whole electronic thing , I mean people can communicate with them from home and from their offices rather than being inconvenienced or the service provider working there being inconvenienced by me coming all the way , spending an hour there, fighting with the service provider and causing a scene. You can just do it electronically and it can be sorted now

P 3: Andile.docx - 3:63 [So I think when they say they ..] (102:102) (Super)
Codes: [Cost saving - Family: Value of Smart City Services] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

So I think when they say they want to move towards being a smart City, they should want to see less people coming to their offices to ask them. I mean people should engage with technology, it is faster, and it is more efficient. And it is actually nicer communicating with someone online rather than going there fighting. So the websites are needed for sure. I mean we cannot be a smart city if we don't have technology

P 3: Andile.docx - 3:65 [And when we do use it, they mu..] (104:104) (Super)
Codes: [Cost saving - Family: Value of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

And when we do use it, they must take us seriously. If I ask them something, then they must respond. At least they must have a turnaround time like most companies website have. I think most of the websites tell you that they will respond to you in like 48 working hours. But I think with the city of Johannesburg they respond to you in like one working month (mockery and laughs)

P 4: Mrs Jane.docx - 4:16 [It used to be user friendly as..] (49:49) (Super)
Codes: [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

It used to be user friendly as I said, but now for some reason when I try to open it it said it was being reconstructed, so I couldn't get what I wanted

P 4: Mrs Jane.docx - 4:19 [Yes, I would continue to use t..] (57:57) (Super)
Codes: [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

Yes, I would continue to use the websites, they are easy, and they are easy to know some of the things, people are not aware of most of the things available on the websites

P 5: Jacob.docx - 5:1 [Uhm, I remember one time I man..] (10:10) (Super)
Codes: [Utility - Family: Effectiveness of Smart City Services]
No memos

Uhm, I remember one time I managed to connect, but it was so slow and it was unbearably frustrating

P 5: Jacob.docx - 5:4 [So it was minor things like le..] (20:20) (Super)
Codes: [Utility - Family: Effectiveness of Smart City Services]
No memos

So it was minor things like let me just check this. So it was like something that I know about so I was checking if that area is covered. And I found that it is covered but the Wi-Fi is not effective

P 5: Jacob.docx - 5:8 [The area where I was connected..] (30:30) (Super)
Codes: [Utility - Family: Effectiveness of Smart City Services]
No memos

The area where I was connected in it was slow. But if I am in an area where it is fast, I would use it. There are areas where it is fast and there are areas where it is extremely frustrating

P 5: Jacob.docx - 5:30 [My expectations were met, I me..] (63:63) (Super)
Codes: [Utility - Family: Effectiveness of Smart City Services]
No memos

My expectations were met, I mean I am an expert in that area so I was looking with an eye of saying I know what has to happen, and yes I was impressed with the performance

P 5: Jacob.docx - 5:31 [For me it depends on how inter..] (69:69) (Super)
Codes: [Utility - Family: Effectiveness of Smart City Services]
No memos

For me it depends on how interactive and dynamic they are. If it is just an information website then sometimes I get bored. Sometimes we need dynamic websites to see more. But yah, they are very useful, the information is useful and I get informed of what is going on.

P 5: Jacob.docx - 5:34 [It depends on what I need to d..] (75:75) (Super)

Codes: [Utility - Family: Effectiveness of Smart City Services]
No memos

It depends on what I need to do, but most of the time it was easy to achieve my goal. They give me the results that I am searching for

P 5: Jacob.docx - 5:35 [The information is there on th..] (75:75) (Super)
Codes: [Utility - Family: Effectiveness of Smart City Services]
No memos

The information is there on the websites the main thing is to utilize it where it fits you. Even though sometimes you don't trust it, you just have to see how you use it.

P 5: Jacob.docx - 5:37 [People now believe in one-on-o..] (78:78) (Super)
Codes: [Utility - Family: Effectiveness of Smart City Services]
No memos

People now believe in one-on-one interactions, they ask questions and they want to get a response immediately. They should tell people what the turnaround time is when posing queries through websites.

P 6: Max.docx - 6:5 [I think when you use it there ..] (20:20) (Super)
Codes: [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

I think when you use it there will be connectivity issues, well it will connect but it will not connect often, and you can't really do anything, you can't really update there, so it's not really helping me to actually connect so I just don't use it. There are problems, they do frustrate if it is a free service

P 7: Samie.docx - 7:1 [Not really because either conn..] (6:6) (Super)
Codes: [Utility - Family: Effectiveness of Smart City Services]
No memos

Not really because either connection is bad or you need passwords to connect to the Wi-Fi, do not really, I haven't used them

P 7: Samie.docx - 7:2 [Samie: I have tried it and lik..] (8:8) (Super)
Codes: [Utility - Family: Effectiveness of Smart City Services]
No memos

Samie: I have tried it and like even loading the first page on google take forever (laughs)

P 7: Samie.docx - 7:5 [And I think for me the thing t..] (26:26) (Super)
Codes: [Utility - Family: Effectiveness of Smart City Services]
No memos

And I think for me the thing that would really motivate me to use is it is if they increase the speed, then I would probably use it a lot more

P 8: Baba Khumalo.docx - 8:11 [I think they are important, I ..] (28:28) (Super)
Codes: [Utility - Family: Effectiveness of Smart City Services]
No memos

I think they are important, I mean it could be easy to get information on the websites because there will be no need to ask a person, you can just go through the websites and find everything there. And you can go to the websites anytime

P10: Peter.docx - 10:11 [The first time when I used the..] (23:23) (Super)
Codes: [Convenience - Family: Value of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

The first time when I used them was when I got by bill, I used to get my bill via post, but now they email them to me. So if I have some queries then I check the city's websites, I just go to www on my computer, then I click, the website is on my favourites now. But when I first learned about it was on the bill, the utility bill

P10: Peter.docx - 10:20 [. Ever since I have registered..] (27:27) (Super)
Codes: [Utility - Family: Effectiveness of Smart City Services]
No memos

. Ever since I have registered, on a monthly basis they sms me what I am owing and what my monthly bills are, what I have to pay, my rates and all. And I can even quickly go and check on the website when I need to know and I think maybe for other services that I need to pay, I can just go to the website and check (sounding confident). It is very very useful, in fact even effective

P11: Steven.docx - 11:3 [had to first do some settings ..] (12:12) (Super)
Codes: [Utility - Family: Effectiveness of Smart City Services]
No memos

had to first do some settings on my phone before it could work, and the process is not really effective because you have to now first reset your phone and then after that the Wi-Fi will connect so you see now you have to meet up with difficulties before connecting so it is tiring

P11: Steven.docx - 11:9 [They must put more hotspots fo..] (22:22) (Super)
Codes: [Utility - Family: Effectiveness of Smart City Services]
No memos

They must put more hotspots for Wi-Fi and improve their Wi-Fi and make it fast.

P12: Thabo.docx - 12:8 [And sometimes they take time t..] (44:44) (Super)
Codes: [Utility - Family: Effectiveness of Smart City Services]
No memos

And sometimes they take time to respond on these websites, they take time (stressing his point) I know the DTI is now two years now and I am still waiting for funding assistance but they haven't said anything, so I can't deal with something that takes time. So maybe I have lost interest in them because of that.

P12: Thabo.docx - 12:10 [Yah they should also improve t..] (47:47) (Super)
Codes: [Utility - Family: Effectiveness of Smart City Services]
No memos

Yah they should also improve their work, they should not take long to respond, they should not be lazy, then more people will use it.

4. ALTERNATIVE SOURCES

Accessibility of alternative source

P 1: Bra Gee.docx - 1:5 [but like me I am more of a dat..] (15:15) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Reliability of alternative source - Family: Alternative Information Sources]
No memos

but like me I am more of a data person, I buy alot of data so whenever I need internet I just buy data, so I never really feel the consequences of Wi-Fi in the city

P 1: Bra Gee.docx - 1:14 [Yes, and Wits Wi-Fi] (33:33) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources]
No memos

Yes, and Wits Wi-Fi

P 1: Bra Gee.docx - 1:15 [Data? MTN, I buy MTN data] (35:35) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources]
No memos

Data? MTN, I buy MTN data

P 1: Bra Gee.docx - 1:17 [When I am out of campus I use ..] (39:39) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Finances - Family: User needs]
No memos

When I am out of campus I use my data for minor things such as social networks, Facebook, WhatsApp etc. But if I had to look-up something on utube you know like watching a clip for like 5minutes, it takes about 100MB and that costs like 30 bucks so yah.

P 1: Bra Gee.docx - 1:18 [Yes, because most of the time ..] (43:43) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Finances - Family: User needs]
No memos

Yes, because most of the time when I am outside Wits I am on WhatsApp. So yeah you could say using data is more accessible. I do not feel the need to connect to Wi-Fi just so I could communicate with someone on WhatsApp or Facebook. I mean it does use my data but not much of it. You get me? But if I was to do or watch a video or something that requires a lot of data, I would consider having or using Wi-Fi from the city. I don't know if I made myself clear.

P 1: Bra Gee.docx - 1:19 [I mean like take me for exampl..] (53:53) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Familiarity of alternative source - Family: Alternative Information Sources] [Reliability of alternative source - Family: Alternative Information Sources]
No memos

I mean like take me for example ne, most of the time when I work I am either in my room or in the library, that's why I use Wits Wi-Fi okay

P 1: Bra Gee.docx - 1:30 [I used Google maps, and I used..] (86:86) (Super)

Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Reliability of alternative source - Family: Alternative Information Sources]
No memos

I used Google maps, and I used the Gautrain, yah and it took me there and I used Google maps when I was there

P 1: Bra Gee.docx - 1:31 [There is a website called news..] (88:88) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources]
No memos

There is a website called news24, I always get updates on news24

P 1: Bra Gee.docx - 1:34 [I always manage to get by with..] (92:92) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Irreplaceability - Family: Value of Smart City Services] [Reliability of alternative source - Family: Alternative Information Sources]
No memos

I always manage to get by without those websites. I just call a friend, they will tell me. Am not saying every place I want to go I know, but most of the time where I want to go, someone has been there, or lives next to the place, you see? So answers are always around

P 2: Maria.docx - 2:2 [I have an MTN line, and if I w..] (19:19) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources]
No memos

I have an MTN line, and if I want to get on the internet using my phone, I use, I mean I obviously need to have data on my phone so yes I do buy data to get on the internet because my phone does not allow me to access internet without having data

P 2: Maria.docx - 2:3 [because, because I rarely go t..] (21:21) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources]
No memos

because, because I rarely go to the city

P 2: Maria.docx - 2:25 [Because I have other means] (70:70) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Irreplaceability - Family: Value of Smart City Services]
No memos

Because I have other means

P 2: Maria.docx - 2:35 [I mostly don't have a need for..] (120:120) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Irreplaceability - Family: Value of Smart City Services] [Pertinence - Family: Value of Smart City Services]
No memos

I mostly don't have a need for anything government related, most of the staff that I do is general, not specific to the government here. So I haven't had a need to go to their websites to be very honest. The one instance when I needed to, I went on their site and got what I wanted, and that was it. Okay? So for my profession, my studies, my personal life, I use the internet, but I use other sites not government sites

P 2: Maria.docx - 2:36 [it usually feds to me through ..] (122:122) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources]
No memos

it usually feds to me through twitter. Because the city of Johannesburg posts things about the city on twitter, so I get to know about them

P 2: Maria.docx - 2:37 [I usually get information thro..] (124:124) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Familiarity of alternative source - Family: Alternative Information Sources] [Reliability of alternative source - Family: Alternative Information Sources]
No memos

I usually get information through twitter, for load shedding, my traffic, I use twitter

P 2: Maria.docx - 2:39 [with twitter I don't need to g..] (128:128) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Convenience - Family: Value of Smart City Services] [Irreplaceability - Family: Value of Smart City Services] [Reliability of alternative source - Family: Alternative Information Sources]
No memos

with twitter I don't need to go and check, it just feeds into my phone. So usually when I go to websites is when I am looking for something. But the reason why I follow them on twitter is because certain interesting things might come up which may not be on the website. Because they don't post little things on the websites all the time. So on twitter, you get feeds, live feeds for the whole day. So you kind of know what is going on

P 2: Maria.docx - 2:53 [I would be stuck now, I have n..] (166:166) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Irreplaceability - Family: Value of Smart City Services]
No memos

I would be stuck now, I have nothing else to use

P 3: Andile.docx - 3:46 [I think if there could be cons..] (76:76) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Convenience - Family: Value of Smart City Services] [Irreplaceability - Family: Value of Smart City Services] [Pertinence - Family: Value of Smart City Services] [Reliability of alternative source - Family: Alternative Information Sources] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

I think if there could be consistency in how the different departments under the city of Johannesburg work, then I think people would trust it more. They can even learn from the city of Johannesburg twitter. They must have the same implementation team or strategy, then I would use it

P 3: Andile.docx - 3:49 [I use twitter, newspapers, I ..] (82:82) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources]
No memos

I use twitter, newspapers, I hardly listen to the radio these days, so yah I think that's it

P 3: Andile.docx - 3:50 [I also read the government pos..] (84:84) (Super)

Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Reliability of alternative source - Family: Alternative Information Sources]
No memos

I also read the government posters as well, when passing by them. But yah, mainly it's through twitter because I follow a lot of government agencies on twitter. And they always update regularly

P 3: Andile.docx - 3:51 [It is accessible and it is fas..] (86:86) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Convenience - Family: Value of Smart City Services] [Cost saving - Family: Value of Smart City Services] [Irreplaceability - Family: Value of Smart City Services] [Pertinence - Family: Value of Smart City Services] [Reliability of alternative source - Family: Alternative Information Sources]
No memos

It is accessible and it is fast. I think now they realized that the mind-set of the people has changed. People want information like at the tips of their figures. They don't want to go to some government department to find information. If I am on twitter I want to see like what government is doing, and their services and events that are coming up.

P 4: Mrs Jane.docx - 4:5 [At home I don't have Wi-Fi con..] (20:20) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Connectivity - Family: Access]
No memos

At home I don't have Wi-Fi connection, Its only when I use my cell-phone, because I use my mega-bytes, or when I use my iPad taking data from my megabytes.

P 4: Mrs Jane.docx - 4:17 [If I want to look at governmen..] (51:51) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources]
No memos

If I want to look at government publications like I use government gazettes, If I want to check the white papers, the green papers I also go there. I use radio and newspapers as well

P 6: Max.docx - 6:11 [I find information through fac..] (29:29) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources]
No memos

I find information through Facebook and WhatsApp so I am at that point where I am comfortable with what I have now and I don't want to brunch out

P 8: Baba Khumalo.docx - 8:10 [I am not aware of the other we..] (26:26) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources]
No memos

I am not aware of the other websites, I read about some of their plans in the newspapers, I never access their websites

P 8: Baba Khumalo.docx - 8:13 [The New Age newspaper communi..] (32:32) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Reliability of alternative source - Family: Alternative Information Sources]
No memos

The New Age newspaper communicates lots of information about the government, so I use it . Sometimes if I want information about certain things I go there physically and ask.

P12: Thabo.docx - 12:9 [I listen to radio, I watch TV,..] (45:45) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Reliability of alternative source - Family: Alternative Information Sources]
No memos

I listen to radio, I watch TV, and Jozi FM, Jozi FM you know they talk about everything if there is something new in the township they talk about it (sounding confident and satisfied) . So Jozi FM is a radio station in the township they talk about things in Soweto, and many people listen to it, it is in Soweto. And even when there is some event in town, they talk about it and we get the information, so for people in Soweto Jozi FM is good.

Familiarity of alternative source

P 1: Bra Gee.docx - 1:19 [I mean like take me for exampl..] (53:53) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Familiarity of alternative source - Family: Alternative Information Sources] [Reliability of alternative source - Family: Alternative Information Sources]
No memos

I mean like take me for example ne, most of the time when I work I am either in my room or in the library, that's why I use Wits Wi-Fi okay

P 1: Bra Gee.docx - 1:33 [You know, and it is very easy ..] (90:90) (Super)
Codes: [Familiarity of alternative source - Family: Alternative Information Sources] [Reliability of alternative source - Family: Alternative Information Sources]
No memos

You know, and it is very easy to navigate your way around. There is also an archive where you can go and find old posts. It's not like it updates this and tomorrow it’s no longer there. I can always go back. Or you could also search news which is related to a specific topic or country, you know, it's more like a search engine. It also has video clips. I think it is very detailed.

P 2: Maria.docx - 2:37 [I usually get information thro..] (124:124) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Familiarity of alternative source - Family: Alternative Information Sources] [Reliability of alternative source - Family: Alternative Information Sources]
No memos

I usually get information through twitter, for load shedding, my traffic, I use twitter

P 6: Max.docx - 6:13 [So it goes with some familiari..] (35:35) (Super)
Codes: [Familiarity of alternative source - Family: Alternative Information Sources]
No memos

So it goes with some familiarity that I have always had Facebook. If like the e-services were like Facebook and there is that familiarity then I would probably use the e-services websites as well.

P10: Peter.docx - 10:2 [To be honest I don't use Wi-Fi..] (4:4) (Super)
Codes: [Familiarity of alternative source - Family: Alternative Information Sources]
No memos

To be honest I don't use Wi-Fi that much, I don't know if I can even use it, I might know how to connect to it but honestly I have never used it, I prefer using internet data because I have my laptop at home, I have my cell phones and my phone has the BIS service, so I don't actually use Wi-Fi

Reliability of alternative source

P 1: Bra Gee.docx - 1:5 [but like me I am more of a dat..] (15:15) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Reliability of alternative source - Family: Alternative Information Sources]
No memos

but like me I am more of a data person, I buy a lot of data so whenever I need internet I just buy data, so I never really feel the consequences of Wi-Fi in the city

P 1: Bra Gee.docx - 1:19 [I mean like take me for exampl..] (53:53) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Familiarity of alternative source - Family: Alternative Information Sources] [Reliability of alternative source - Family: Alternative Information Sources]
No memos

I mean like take me for example ne, most of the time when I work I am either in my room or in the library, that's why I use Wits Wi-Fi okay

P 1: Bra Gee.docx - 1:30 [I used Google maps, and I used..] (86:86) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Reliability of alternative source - Family: Alternative Information Sources]
No memos

I used Google maps, and I used the Gautrain, yah and it took me there and I used Google maps when I was there

P 1: Bra Gee.docx - 1:32 [News24 to me it's very uhm rel..] (90:90) (Super)
Codes: [Reliability of alternative source - Family: Alternative Information Sources] [Trust in the information provided - Family: Trust]
No memos

News24 to me it's very uhm reliable, it's also truthful, I don't know if truthful is the word to use but you know, information you get is very accurate, and it's not biased, it does not favor anyone, it just represents news as they are. And yah, it also has local; I mean it covers local news and international news

P 1: Bra Gee.docx - 1:33 [You know, and it is very easy ..] (90:90) (Super)
Codes: [Familiarity of alternative source - Family: Alternative Information Sources] [Reliability of alternative source - Family: Alternative Information Sources]
No memos

You know, and it is very easy to navigate your way around. There is also an archive where you can go and find old posts. It's not like it updates this and tomorrow its no longer there. I can always go back. Or you could also search news which is related to a specific topic or country, you know, it's more like a search engine. It also has video clips. I think it is very detailed.

P 1: Bra Gee.docx - 1:34 [I always manage to get by with..] (92:92) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Irreplaceability - Family: Value of Smart City Services] [Reliability of alternative source - Family: Alternative Information Sources]

No memos

I always manage to get by without those websites. I just call a friend, they will tell me. Am not saying every place I want to go I know, but most of the time where I want to go, someone has been there, or lives next to the place, you see? So answers are always around

P 2: Maria.docx - 2:27 [Well some of them I have gone ..] (80:80) (Super)
Codes: [Reliability of alternative source - Family: Alternative Information Sources]
No memos

Well some of them I have gone to check but I have never had a need to in the last year or two and I haven't used the platforms. Because most of the time I access Google and it pulls out information for me

P 2: Maria.docx - 2:37 [I usually get information thro..] (124:124) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Familiarity of alternative source - Family: Alternative Information Sources] [Reliability of alternative source - Family: Alternative Information Sources]
No memos

I usually get information through twitter, for load shedding, my traffic, I use twitter

P 2: Maria.docx - 2:39 [with twitter I don't need to g..] (128:128) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Convenience - Family: Value of Smart City Services] [Irreplaceability - Family: Value of Smart City Services] [Reliability of alternative source - Family: Alternative Information Sources]
No memos

with twitter I don't need to go and check, it just feeds into my phone. So usually when I go to websites is when I am looking for something. But the reason why I follow them on twitter is because certain interesting things might come up which may not be on the website. Because they don't post little things on the websites all the time. So on twitter, you get feeds, live feeds for the whole day. So you kind of know what is going on

P 3: Andile.docx - 3:45 [sometimes it doesn't work. You..] (76:76) (Super)
Codes: [Reliability of alternative source - Family: Alternative Information Sources] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

sometimes it doesn't work. You know the reason why their twitter is efficient and the websites are not, like the city of Johannesburg when you tweet them and say: hey but what's happening why is my electricity off, why is there no water, like they answer you quickly. But then if you ask that question through their websites , they will take like two days to respond

P 3: Andile.docx - 3:46 [I think if there could be cons..] (76:76) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Convenience - Family: Value of Smart City Services] [Irreplaceability - Family: Value of Smart City Services] [Pertinence - Family: Value of Smart City Services] [Reliability of alternative source - Family: Alternative Information Sources] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

I think if there could be consistency in how the different departments under the city of Johannesburg work, then I think people would trust it more. They can even learn from the city of Johannesburg twitter. They must have the same implementation team or strategy, then I would use it

P 3: Andile.docx - 3:50 [I also read the government pos..] (84:84) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Reliability of alternative source - Family: Alternative Information Sources]
No memos

I also read the government posters as well, when passing by them. But yah, mainly it's through twitter because I follow a lot of government agencies on twitter. And they always update regularly

P 3: Andile.docx - 3:51 [It is accessible and it is fas..] (86:86) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Convenience - Family: Value of Smart City Services] [Cost saving - Family: Value of Smart City Services] [Irreplaceability - Family: Value of Smart City Services] [Pertinence - Family: Value of Smart City Services] [Reliability of alternative source - Family: Alternative Information Sources]
No memos

It is accessible and it is fast. I think now they realized that the mind-set of the people has changed. People want information like at the tips of their figures. They don't want to go to some government department to find information. If I am on twitter I want to see like what government is doing, and their services and events that are coming up.

P 3: Andile.docx - 3:54 [It's more like they should hav..] (94:94) (Super)
Codes: [Reliability of alternative source - Family: Alternative Information Sources] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

It's more like they should have their information updated like on a regular basis. Like twitter, twitter updates itself like every five seconds. Must I give you a newspaper example too?

P 3: Andile.docx - 3:55 [I read the Guardian, and I thi..] (96:96) (Super)
Codes: [Familiarity - Family: Effectiveness of Smart City Services] [Reliability of alternative source - Family: Alternative Information Sources] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

I read the Guardian, and I think I check it like about 5 or 6 times a day. And each time I check there will be something new posted there. Whereas with the city of Johannesburg website, you might go there twice a week and you will find the same information. I mean there is always something happening in the city. Like if you look at Joburg theatre, there is always a play there. So why don't they have something attractive like where to go, what does the city have

P 5: Jacob.docx - 5:11 [I have BIS, so sometimes it do..] (36:36) (Super)
Codes: [Reliability of alternative source - Family: Alternative Information Sources]
No memos

I have BIS, so sometimes it does not register to me that I can use free Wi-Fi, I buy data for the whole month. Blackberry is not like other phones where you have to buy data every time it finishes like the android phones and iphones. Blackberry's capability makes me forget that I use free Wi-Fi

P 6: Max.docx - 6:12 [And with facebook there is lik..] (35:35) (Super)
Codes: [Reliability of alternative source - Family: Alternative Information Sources]
No memos

And with facebook there is like a mobile app, there is a desktop web, and I have always kind of had Facebook since a young age, and I have always had facebook with me, so it just something that has been engrained in me

P 7: Samie.docx - 7:3 [I found that the connection is..] (14:14) (Super)
Codes: [Reliability of alternative source - Family: Alternative Information Sources]
No memos

I found that the connection is actually stronger with personal Wi-Fi, so it is quicker for me to do whatever I need to do on the internet, because you get impatient waiting for things, and you want to just use something that is quicker. The personal one is reliable

P 8: Baba Khumalo.docx - 8:13 [The New Age newspaper communi..] (32:32) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Reliability of alternative source - Family: Alternative Information Sources]
No memos

The New Age newspaper communicates lots of information about the government, so I use it . Sometimes if I want information about certain things I go there physically and ask.

P 9: Isaac.docx - 9:10 [Mostly I use other sites, for ..] (33:33) (Super)
Codes: [Reliability of alternative source - Family: Alternative Information Sources]
No memos

Mostly I use other sites, for example for job I will use JobisJob.com, because I have never really heard of other government websites

P 9: Isaac.docx - 9:12 [And the other website I use is..] (35:35) (Super)
Codes: [Reliability of alternative source - Family: Alternative Information Sources]
No memos

And the other website I use is SoccerLaduma. com, because they have invented this feature where you sign up for jobs and they send you information and job opportunities. So it could be more helpful for the city of Johannesburg websites do the same, then we could use it

P12: Thabo.docx - 12:9 [I listen to radio, I watch TV,..] (45:45) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Reliability of alternative source - Family: Alternative Information Sources]
No memos

I listen to radio, I watch TV, and Jozi FM, Jozi FM you know they talk about everything if there is something new in the township they talk about it (sounding confident and satisfied) . So Jozi FM is a radio station in the township they talk about things in Soweto, and many people listen to it, it is in Soweto. And even when there is some event in town, they talk about it and we get the information, so for people in Soweto Jozi FM is good.

5. AWARENESS

Marketing/Advertisement

P 1: Bra Gee.docx - 1:23 [Awareness of city Wi-Fi, Yah j..] (57:57) (Super)
Codes: [Advertisement - Family: Awareness] [Findability - Family: Awareness]
No memos

Awareness of city Wi-Fi, Yah just aware, and I think they should also try and put up some signs so people can see, okay this is a free Wi-Fi area

P 1: Bra Gee.docx - 1:26 [No, I just go to the rank and ..] (70:70) (Super)
Codes: [Advertisement - Family: Awareness] [Knowledge - Family: Awareness]
No memos

No, I just go to the rank and look for it, I did not know about the website hey

P 1: Bra Gee.docx - 1:27 [No, I would have checked it ou..] (74:74) (Super)
Codes: [Advertisement - Family: Awareness] [Knowledge - Family: Awareness]
No memos

No, I would have checked it out myself. But then by you just saying it's a Johannesburg website, it sounded like something I don't need. But when you started telling me it has like finding your way around then yah I could use it.

P 1: Bra Gee.docx - 1:28 [No, like I said, I did not kno..] (76:76) (Super)
Codes: [Advertisement - Family: Awareness] [Findability - Family: Awareness]
No memos

No, like I said, I did not know about it up until you mentioned it, so ,yah

P 1: Bra Gee.docx - 1:29 [I didn't know they exist, but ..] (78:78) (Super)
Codes: [Advertisement - Family: Awareness] [Knowledge - Family: Awareness] [Pertinence - Family: Value of Smart City Services]
No memos

I didn't know they exist, but am sure I would have thought of them. Off course if I had a need for them I would have found out about them. I am very updated myself, it has never presented its self to me, the website.

P 1: Bra Gee.docx - 1:35 [yah am sure if I knew these we..] (94:94) (Super)
Codes: [Advertisement - Family: Awareness] [Knowledge - Family: Awareness]
No memos

yah am sure if I knew these websites existed I would have used them

P 1: Bra Gee.docx - 1:36 [They do not tell us they exist..] (96:96) (Super)
Codes: [Advertisement - Family: Awareness] [Knowledge - Family: Awareness]
No memos

They do not tell us they exist. How are we supposed to know? I don't know I have never seen the websites anywhere. They can’t just sit there on the internet expecting to magically be found. We don't know about these websites, how are we supposed to know about them? Off course if I knew about them I would have taken a look at them, but I don't know.

P 1: Bra Gee.docx - 1:39 [Let us know, they should at le..] (100:100) (Super)
Codes: [Advertisement - Family: Awareness]
No memos

Let us know, they should at least try and advertise the sites. Am sure there is a form of advertisement they are already carrying out, but obviously it is not working that well. So I think they should try and employ something different, and I mean am sure a lot of people from Wits don't know about it, so it's either they advertise on TV, or utube. Utube is a perfect example. I mean like we are always on utube, students, always on utube. And every time we play a video there is always that small advert. So if they could play that thing on utube, that's fine. TV, no one watches TV, no one has time for TV. So yah I think utube is a good way to advertise.

P 3: Andile.docx - 3:40 [For now I have not tried them ..] (68:68) (Super)
Codes: [Advertisement - Family: Awareness] [Knowledge - Family: Awareness] [Personal interests - Family: User needs]
No memos

For now I have not tried them because I don't see the need. Maybe if I saw a need I would have tried. Or maybe if they market themselves properly , I think that is why most people are not using it. Because I think people would want to know what is happening in the city. But then if they are quiet, the city of Johannesburg, and don't tell us then people will not be active and go on the websites. It is a challenge

P 3: Andile.docx - 3:61 [So I think access, marketing a..] (100:100) (Super)
Codes: [Advertisement - Family: Awareness] [Connectivity - Family: Access] [Trust in government - Family: Trust]
No memos

So I think access, marketing as well, and trust. I think those are the top 3.

P 3: Andile.docx - 3:64 [I think it is about advertisin..] (104:104) (Super)
Codes: [Advertisement - Family: Awareness] [Knowledge - Family: Awareness]
No memos

I think it is about advertising. Yah, you know like MTN offers rubbish services, but they have great advertisements. You know like when you see an MTN advert, you think like these people offer me rubbish services, but because I like what they are telling me in the advert, automatically I will forget the bad service that the offered me and I will just be focused on what they are saying. So I think with government as well, they need to go on that huge advertising drive. They should just go out there and challenge the perceptions that we have as people. I think if they do that they will find that people will actually use the websites more.

P 4: Mrs Jane.docx - 4:8 [Yes there is a necessity to im..] (32:32) (Super)
Codes: [Advertisement - Family: Awareness] [Knowledge - Family: Awareness]
No memos

Yes there is a necessity to improve the use of city Wi-Fi and people need to know about it. It needs to be widely advertised because most people may not be aware of it. It would make things easier like if you want to access the home affairs website, SARS and whatever service you need. So people need to know about it.

P 4: Mrs Jane.docx - 4:9 [They must put adverts, billboa..] (34:34) (Super)
Codes: [Advertisement - Family: Awareness]
No memos

They must put adverts, billboards. Advertise it on TV if possible, newspaper, any media to make people aware

P 4: Mrs Jane.docx - 4:27 [We need to spread the gospel. ..] (64:64) (Super)
Codes: [Advertisement - Family: Awareness] [Knowledge - Family: Awareness]
No memos

We need to spread the gospel. We must keep passing on the information

P 5: Jacob.docx - 5:18 [They should create awareness, ..] (48:48) (Super)
Codes: [Advertisement - Family: Awareness] [Knowledge - Family: Awareness]
No memos

They should create awareness; they could use media platforms, go to radios, TV, they can advertise, they can use pamphlets, or physically advertise and inform the nation that there is this Wi-Fi roll out project that will help them. Tell people that they can use services that they couldn't reach. Because it is not always easy to go to the government office and find an officer who will help you. If the systems are there and the services are operating there on the technology it is easy to connect and be able to use them

P 5: Jacob.docx - 5:39 [Objectives of e-services shoul..] (78:78) (Super)
Codes: [Advertisement - Family: Awareness]
No memos

Objectives of e-services should be well threshed out to the people on the ground. This can be done through TV, or through computer sectors where they engage the people and teach them. It can also be through media.

P 6: Max.docx - 6:8 [They should go on campaigns to..] (24:24) (Super)
Codes: [Advertisement - Family: Awareness]
No memos

They should go on campaigns to make people aware, they must make a presence like here we are and these is what we provide and this is how it will help you. In a sense kind of sell like these is what we do for you and these is how it can benefit you, and just make the Wi-Fi wide-spread so that everyone can have access, opposed to just selected areas

P 6: Max.docx - 6:15 [hey are useful they should hav..] (39:39) (Super)
Codes: [Advertisement - Family: Awareness]
No memos

Hey are useful they should have a link of their websites of social media sites, such that if I am on Facebook and I want government information I can just click the link, as opposed to me having to go look for it. They should have a description of what the website does with a link to the actual website that would make things so much easier and helpful. They should also advertise themselves at events that people go to, and tell the people about the websites and let them know that more upcoming events are advertised on the city of Johannesburg website. People are just not aware, If they don't know about it then they can't try it to find out whether they can use it or not. Because I also didn't know about it

P 7: Samie.docx - 7:4 [Maybe a lot of people don't kn..] (26:26) (Super)
Codes: [Advertisement - Family: Awareness]
No memos

Maybe a lot of people don't know about it, because I haven't seen any advertising about the Wi-Fi hot spots. Maybe they should advertise it at the bus stops or wherever the hotspots are, and maybe even having explanations of how to connect to it, because maybe people don't know how to connect to it, and increasing the speed of the Wi-Fi would also help.

P 7: Samie.docx - 7:6 [But for the general population..] (26:26) (Super)
Codes: [Advertisement - Family: Awareness]
No memos

But for the general population, I think if they just make them aware, but up advertisements at stops and instructions of how to use it and connecting, I mean just marketing

P 7: Samie.docx - 7:12 [Marketing and like I think the..] (53:53) (Super)
Codes: [Advertisement - Family: Awareness]
No memos

Marketing and like I think they should just spread the knowledge that these things exist either by going to speak in communities or like something to increase awareness. From my personal point of view I think awareness is the main reason why people are not using them

P 8: Baba Khumalo.docx - 8:7 [They should use the media to m..] (20:20) (Super)
Codes: [Advertisement - Family: Awareness]
No memos

They should use the media to make people aware. And in busy places like this one (pointing to the park) public spaces, they should advertise. Because you see like with the government, they have good policies but you see a lot of people don't know about them (sounding serious and concerned). The policies are good but communicating them to the people and implementing them is poor, that aspect of it is very poor.

P 8: Baba Khumalo.docx - 8:12 [They should intensify awarenes..] (30:30) (Super)
Codes: [Advertisement - Family: Awareness]
No memos

They should intensify awareness programs, like in this park here put notices around and let people know, because many people like this park because it is safe and clean. So this park can be used to communicate information to a lot of people

P 8: Baba Khumalo.docx - 8:14 [But now I know that I can get ..] (32:32) (Super)
Codes: [Advertisement - Family: Awareness] [Knowledge - Family: Awareness]
No memos

But now I know that I can get information about things I need on the websites. May be also before I took things for granted. Mostly people are ignorant, they don't take things seriously. People feel like they should go straight to the government department to ask and get information they need. But if they advertise these websites in our faces, we will be forced to learn. They can use TV, and when we see this advertisement on TV we will take our phones same time and try to access and see what they are talking about. And next time we will not go to the government department anymore because we will know that we can get information on the websites

P 8: Baba Khumalo.docx - 8:16 [They should inform! (Pausing f..] (36:36) (Super)
Codes: [Advertisement - Family: Awareness]
No memos

They should inform! (Pausing for moment for a moment to let it stick) properly and patiently communicate with people, because some people are still used to the old fashioned style that if you need information about something you go to the government department to ask

P 8: Baba Khumalo.docx - 8:21 [They can use TV, and when we s..] (32:32) (Super)
Codes: [Advertisement - Family: Awareness]
No memos

They can use TV, and when we see this advertisement on TV we will take our phones same time and try to access and see what they are talking about. And next time we will not go to the government department anymore because we will know that we can get information on the websites

P 9: Isaac.docx - 9:9 [They should use commercial cha..] (22:22) (Super)
Codes: [Advertisement - Family: Awareness]
No memos

They should use commercial channels to let out information and tell people. Even on the news underneath when the news are running just write a message there that there are hotspots down at the bottom of the TV screen where they put news updates

P 9: Isaac.docx - 9:15 [They should put information ab..] (39:39) (Super)
Codes: [Advertisement - Family: Awareness] [Knowledge - Family: Awareness]
No memos

They should put information about the websites on the most used sites like twitter and Facebook, because most people nowadays use twitter and facebook so if they can connect to those kinds of sites then people will start recognizing it. They should also advertise on media, like media is the fastest thing nowadays, just put it out there and explain to the people. And if they could send messages to schools, it would be better, send emails to all the schools that are registered to inform them to teach the kids about the websites. I think it is easier that way; at least you make sure that the message reaches all schools and the teachers will now pass the word to the students.

P10: Peter.docx - 10:12 [it is not advertised enough, l..] (25:25) (Super)
Codes: [Advertisement - Family: Awareness]
No memos

it is not advertised enough, like when you go to home affairs and you get the form, either at the bottom of the form its then that you will see the website, but you can't just see the advertisement everywhere like there is their websites and all, you don't

P10: Peter.docx - 10:17 [They should advertise, on buse..] (35:35) (Super)
Codes: [Advertisement - Family: Awareness]
No memos

They should advertise, on buses as well, we have a lot of buses in the city they should put notices like 'Home Affairs information logon to www.homeaffairs.com' something like that. And shopping malls as well, these big billboards at shopping malls, they should advertise there. I mean because it is a government thing they can even put it on SABC, radio stations as well, we listen to radio stations.

P10: Peter.docx - 10:19 [They can also advertise in hos..] (35:35) (Super)
Codes: [Advertisement - Family: Awareness]
No memos

They can also advertise in hospitals. I have also seen advertisement on rubbish bins, people always go to rubbish bins and they will read about the websites every time they go to the rubbish bin. And they should look at things that are used on a daily basis. At least once a day you go to the rubbish bin. So the city of Johannesburg when they give out rubbish bins they should put those websites there.

P11: Steven.docx - 11:15 [these websites are important b..] (37:37) (Super)
Codes: [Advertisement - Family: Awareness]
No memos

these websites are important because we have to know what is happening in our country, I am talking to the people who really want to know. But then why don't they advertise the websites? (Sounding annoyed) on TV it is not there, on radio , nothing! so it like it's a secret

P12: Thabo.docx - 12:11 [They should advertise it. Now ..] (47:47) (Super)
Codes: [Advertisement - Family: Awareness]
No memos

They should advertise it. Now we have free newspapers in Soweto, so if maybe they could also advertise it in the newspapers, because I mean we get the newspaper for free, so information about government websites should be in there, then when they are there we will be able to see. And many people can like the websites you know, because if you keep hearing about something several times, you would want to see what is this thing that people are talking about you would want to check it out to see if it is real, then if you find out that it is true you will start using it. And they should also advertise in schools, tell matrics and grade 11 students so that when they finish school they can have plans, they can visit the websites and have information

Findability

P 1: Bra Gee.docx - 1:9 [My phone detects it, it's like..] (23:23) (Super)
Codes: [Connectivity - Family: Access] [Findability - Family: Awareness] [Visibility - Family: Awareness]
No memos

My phone detects it, it's like open Wi-Fi detector or something, on my phone, you see (takes out phone and demonstrates something) it detects all the Wi-Fi networks available now.

P 1: Bra Gee.docx - 1:23 [Awareness of city Wi-Fi, Yah j..] (57:57) (Super)
Codes: [Advertisement - Family: Awareness] [Findability - Family: Awareness]
No memos

Awareness of city Wi-Fi, Yah just aware, and I think they should also try and put up some signs so people can see, okay this is a free Wi-Fi area

P 1: Bra Gee.docx - 1:28 [No, like I said, I did not kno..] (76:76) (Super)
Codes: [Advertisement - Family: Awareness] [Findability - Family: Awareness]
No memos

No, like I said, I did not know about it up until you mentioned it, so, yah

P 1: Bra Gee.docx - 1:37 [I don't know I have never seen..] (96:96) (Super)
Codes: [Findability - Family: Awareness]
No memos

I don't know I have never seen the websites anywhere. They can't just sit there on the internet expecting to magically be found. We don't know about these websites, how are we supposed to know about them? Off course if I knew about them I would have taken a look at them, but I don't know.

P 2: Maria.docx - 2:15 [In my opinion I think the prom..] (45:45) (Super)
Codes: [Findability - Family: Awareness] [Knowledge - Family: Awareness]
No memos

In my opinion I think the promotion and to mobilize people to use them is a very good idea because there are a lot of people that would want to use them.For example, if I am looking for a job, these days 70% of jobs are advertised online, and if I have qualifications and I want to apply for a job or look for a job, it would be better, free internet would be very very helpful, it would be a very good platform for me to try and find a job. So yah, I think it is important to increase the use, to make people aware of what you can use them for, and also to make people aware of where are the spots where free internet is available. I mean I don't particularly know of the spots themselves like where they are.

P 2: Maria.docx - 2:19 [Trust but also knowledge. Mayb..] (53:53) (Super)
Codes: [Findability - Family: Awareness] [Knowledge - Family: Awareness]
No memos

Trust but also knowledge. Maybe people don't know about it, they don't know how it works maybe. They just know that there are hotspots, but they don't know what they are supposed to do with them or where they are

P 2: Maria.docx - 2:20 [they know they are there, we k..] (55:55) (Super)
Codes: [Findability - Family: Awareness] [Visibility - Family: Awareness]
No memos

they know they are there, we know about it, the city of Johannesburg has implemented this Wi-Fi hot spots, but where are they, and are they safe? People may not be aware of where to go for these hotspots. Do I need to be in a certain place or can it be in the whole of Joburg central, can I access it everywhere? You see?

P 3: Andile.docx - 3:8 [I follow the city of Johannesb..] (24:24) (Super)
Codes: [Findability - Family: Awareness] [Knowledge - Family: Awareness]
No memos

I follow the city of Johannesburg on twitter, so I saw on their twitter feed that there is free Wi-Fi at their bus stations. And then I tried it out. But I was like okay, but it does not work. And then I twitted them. And they said, No it works at certain stations, but we are doing the rollout quickly. So they did the rollout and then yah, that's how I found out about them.

P10: Peter.docx - 10:18 [. For city of Johannesburg it ..] (35:35) (Super)
Codes: [Findability - Family: Awareness]
No memos

. For city of Johannesburg it is only when you are looking for information that you will find it, like you can find that oh okay I can go here and click here to get information. Information is not available freely.

Knowledge

P 1: Bra Gee.docx - 1:25 [No, what does it deal with?] (62:62) (Super)
Codes: [Knowledge - Family: Awareness]
No memos

No, what does it deal with?

P 1: Bra Gee.docx - 1:26 [No, I just go to the rank and ..] (70:70) (Super)
Codes: [Advertisement - Family: Awareness] [Knowledge - Family: Awareness]
No memos

No, I just go to the rank and look for it, I did not know about the website hey

P 1: Bra Gee.docx - 1:27 [No, I would have checked it ou..] (74:74) (Super)
Codes: [Advertisement - Family: Awareness] [Knowledge - Family: Awareness]
No memos

No, I would have checked it out myself. But then by you just saying it's a Johannesburg website, it sounded like something I don't need. But when you started telling me it has like finding your way around then yah I could use it.

P 1: Bra Gee.docx - 1:29 [I didn't know they exist, but ..] (78:78) (Super)
Codes: [Advertisement - Family: Awareness] [Knowledge - Family: Awareness] [Pertinence - Family: Value of Smart City Services]

No memos

I didn't know they exist, but am sure I would have thought of them. Off course if I had a need for them I would have found out about them. I am very updated myself, it has never presented its self to me, the website.

P 1: Bra Gee.docx - 1:35 [yah am sure if I knew these we..] (94:94) (Super)
Codes: [Advertisement - Family: Awareness] [Knowledge - Family: Awareness]
No memos

yah am sure if I knew these websites existed I would have used them

P 1: Bra Gee.docx - 1:36 [They do not tell us they exist..] (96:96) (Super)
Codes: [Advertisement - Family: Awareness] [Knowledge - Family: Awareness]
No memos

They do not tell us they exist. How are we supposed to know? I don't know I have never seen the websites anywhere. They can't just sit there on the internet expecting to magically be found. We don't know about these websites, how are we supposed to know about them? Off course if I knew about them I would have taken a look at them, but I don't know.

P 1: Bra Gee.docx - 1:41 [Let us know, they should at le..] (100:100) (Super)
Codes: [Knowledge - Family: Awareness]
No memos

Let us know, they should at least try and advertise the sites.

P 1: Bra Gee.docx - 1:42 [I mean am sure a lot of people..] (100:100) (Super)
Codes: [Knowledge - Family: Awareness]
No memos

I mean am sure a lot of people from Wits don't know about it,

P 2: Maria.docx - 2:15 [In my opinion I think the prom..] (45:45) (Super)
Codes: [Findability - Family: Awareness] [Knowledge - Family: Awareness]
No memos

In my opinion I think the promotion and to mobilize people to use them is a very good idea because there are a lot of people that would want to use them. For example, if I am looking for a job, these days 70% of jobs are advertised online, and if I have qualifications and I want to apply for a job or look for a job, it would be better, free internet would be very very helpful, it would be a very good platform for me to try and find a job. So yah, I think it is important to increase the use, to make people aware of what you can use them for, and also to make people aware of where are the spots where free internet is available. I mean I don't particularly know of the spots themselves like where they are.

P 2: Maria.docx - 2:18 [To increase the use, I think, ..] (51:51) (Super)
Codes: [Knowledge - Family: Awareness] [Trust in technology - Family: Trust]
No memos

To increase the use, I think, remember I keep repeating myself on trust. So I think people need to be made aware that it is a safe platform. And that they can use it for their personal things. And that their credential will not be stolen. Remember crime is a huge thing in Joburg, and everyone has that at the back of their heads. And if they are told that this is free for everybody to use, but we don't know how safe it is, it might hinder, hence the low use. Perhaps the use of it right now is not very up because of that. But I think, I still think that it is the security issue.

P 2: Maria.docx - 2:19 [Trust but also knowledge. Mayb..] (53:53) (Super)
Codes: [Findability - Family: Awareness] [Knowledge - Family: Awareness]
No memos

Trust but also knowledge. Maybe people don't know about it, they don't know how it works maybe. They just know that there are hotspots, but they don't know what they are supposed to do with them or where they are

P 2: Maria.docx - 2:38 [But then I know, I am aware th..] (126:126) (Super)
Codes: [Knowledge - Family: Awareness]
No memos

But then I know, I am aware that if I need to, I can go to their site. The most important thing is I know about their site. I know that there is a platform there, and should it be, I know how to get there, I know where to go

P 2: Maria.docx - 2:51 [SARS does things electronically..] (164:164) (Super)
Codes: [Knowledge - Family: Awareness] [Trust in technology - Family: Trust]
No memos

SARS does things electronically; they encourage people to do things electronically so you literally want to do things electronically. And they have made the platform in such a way that I can trust it, and also I can use it very quickly, and I can quickly get help if I am stuck

P 3: Andile.docx - 3:8 [I follow the city of Johannesb..] (24:24) (Super)
Codes: [Findability - Family: Awareness] [Knowledge - Family: Awareness]
No memos

I follow the city of Johannesburg on twitter, so I saw on their twitter feed that there is free Wi-Fi at their bus stations. And then I tried it out. But I was like okay, but it does not work. And then I twitted them. And they said, No it works at certain stations, but we are doing the rollout quickly. So they did the rollout and then yah, that's how I found out about them.

P 3: Andile.docx - 3:13 [People know, because if you pa..] (34:34) (Super)
Codes: [Knowledge - Family: Awareness] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

People know, because if you pass by the Rea-vaya stations, you will always see young people with their phone and their laptops, closer to the station, like 10 meters away from the station. They are there because they are connecting to and using the Wi-Fi there. So they know. You always look and be like Ae! Maan, why is there always young people here

P 3: Andile.docx - 3:14 [The one in diepkloof, soccer c..] (36:36) (Super)
Codes: [Familiarity - Family: Effectiveness of Smart City Services] [Knowledge - Family: Awareness] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

The one in diepkloof, soccer city, FNB stadium. I can take you one day if you want, you will see them there, they are always there, everyone without a fail, they are there. On weekends, you will find most people them there

P 3: Andile.docx - 3:40 [For now I have not tried them ..] (68:68) (Super)

Codes: [Advertisement - Family: Awareness] [Knowledge - Family: Awareness] [Personal interests - Family: User needs]
No memos

For now I have not tried them because I don't see the need. Maybe if I saw a need I would have tried. Or maybe if they market themselves properly , I think that is why most people are not using it. Because I think people would want to know what is happening in the city. But then if they are quiet, the city of Johannesburg, and don't tell us then people will not be active and go on the websites. It is a challenge

P 3: Andile.docx - 3:48 [I am not aware of all the func..] (80:80) (Super)
Codes: [Knowledge - Family: Awareness]
No memos

I am not aware of all the functionalities they have, but I think the once I want to use I know that they are available. But I am sure if I spend more time I would discover more functionality

P 3: Andile.docx - 3:64 [I think it is about advertisin..] (104:104) (Super)
Codes: [Advertisement - Family: Awareness] [Knowledge - Family: Awareness]
No memos

I think it is about advertising. Yah, you know like MTN offers rubbish services, but they have great advertisements. You know like when you see an MTN advert, you think like these people offer me rubbish services, but because I like what they are telling me in the advert, automatically I will forget the bad service that the offered me and I will just be focused on what they are saying. So I think with government as well, they need to go on that huge advertising drive. They should just go out there and challenge the perceptions that we have as people. I think if they do that they will find that people will actually use the websites more.

P 4: Mrs Jane.docx - 4:8 [Yes there is a necessity to im..] (32:32) (Super)
Codes: [Advertisement - Family: Awareness] [Knowledge - Family: Awareness]
No memos

Yes there is a necessity to improve the use of city Wi-Fi and people need to know about it. It needs to be widely advertised because most people may not be aware of it. It would make things easier like if you want to access the home affairs website, SARS and whatever service you need. So people need to know about it.

P 4: Mrs Jane.docx - 4:20 [Yes, I would continue to use t..] (57:57) (Super)
Codes: [Knowledge - Family: Awareness]
No memos

Yes, I would continue to use the websites, they are easy, and they are easy to know some of the things, people are not aware of most of the things available on the websites. So when you guys interview us, it makes things easier, because sometimes I may not have knowledge about these things, but through the interview I will learn that oh! This is something that I need to know

P 4: Mrs Jane.docx - 4:27 [We need to spread the gospel. ..] (64:64) (Super)
Codes: [Advertisement - Family: Awareness] [Knowledge - Family: Awareness]
No memos

We need to spread the gospel. We must keep passing on the information

P 5: Jacob.docx - 5:9 [So I didn't know about the exi..] (32:32) (Super)
Codes: [Knowledge - Family: Awareness]
No memos

So I didn't know about the existence of Wi-Fi in other places, I will have to check out their websites to check the rollout plans and which hotspots they have. Right now I don't know, I have no idea. Well I know that the city of Johannesburg is aggressive on being a Smart City from Parkstal accouchements

P 5: Jacob.docx - 5:16 [I don't' know of them, for now..] (44:44) (Super)
Codes: [Knowledge - Family: Awareness]
No memos

I don't' know of them, for now I only know the one at the taxi rank, there is access there. I don't know where others are. I will look up on the internet to check how far is the roll-out then I will know of them and I will be aware of whether I have access or not

P 5: Jacob.docx - 5:17 [There should be a campaign to ..] (46:46) (Super)
Codes: [Knowledge - Family: Awareness]
No memos

There should be a campaign to make people aware and alert them that there is free Wi-Fi around the city and that it is one of the city initiatives to give back to the community. And they should encourage people to use services that do not require them to go physically to the institution while they can do things online. Because there is Wi-Fi, and the technology and instruments that are currently available can connect to Wi-Fi. People can do whatever they want to do at their own convenient time everywhere. People have to be told, through advertisement or any means that can make them alert. They have to make that campaign to inform the nation. People don't know and they need to be informed . Sometimes we live in different spaces, we work in different environments. We might not be aware of something until someone comes and says remember there is this and you can use this area here to connect to the internet rather than using your own data. Yah, sometimes awareness can be raised through informing people

P 5: Jacob.docx - 5:18 [They should create awareness, ..] (48:48) (Super)
Codes: [Advertisement - Family: Awareness] [Knowledge - Family: Awareness]
No memos

They should create awareness, they could use media platforms, go to radios, TV, they can advertise, they can use pamphlets, or physically advertise and inform the nation that there is this Wi-Fi roll out project that will help them. Tell people that they can use services that they couldn't reach. Because it is not always easy to go to the government office and find an officer who will help you. If the systems are there and the services are operating there on the technology it is easy to connect and be able to use them

P 5: Jacob.docx - 5:36 [They should make people aware ..] (78:78) (Super)
Codes: [Knowledge - Family: Awareness]
No memos

They should make people aware and provide training on how they can use e-services. Also they should sell these services, tell people the ideas and objectives of e-services, and why they should use them

P 6: Max.docx - 6:4 [No I don't know they exist, I ..] (14:14) (Super)
Codes: [Knowledge - Family: Awareness]
No memos

No I don't know they exist, I know Gauteng they have apps and all but in terms of connectivity I don't know I just know in a private space like restaurants where Wi-Fi is just an extra service that's where I know of. But in general like around the city, I don't have any clue.

P 6: Max.docx - 6:6 [they should increase awareness..] (22:22) (Super)
Codes: [Knowledge - Family: Awareness]

No memos

they should increase awareness that there is an option to use it. They should improve the process of making it available to people and also improving awareness.

P 6: Max.docx - 6:9 [Mainly people are not using it..] (26:26) (Super)
Codes: [Knowledge - Family: Awareness]
No memos

Mainly people are not using it because of awareness, and data is expensive and people don't know that they have other options they can use to save their data.

P 6: Max.docx - 6:10 [I though it just a website whe..] (29:29) (Super)
Codes: [Knowledge - Family: Awareness]
No memos

I though it just a website where you can find information like contact details, I didn't know that you can function on that website. So I didn't know

P 7: Samie.docx - 7:9 [I actually didn't even conside..] (43:43) (Super)
Codes: [Knowledge - Family: Awareness]
No memos

I actually didn't even consider that Johannesburg would have their own websites (Laughs). Because I mean you think like companies and social networks and that's all online, you don't think like a city has its own website, at least I didn't think that they did. I honestly didn't think that cities have websites (laughs) it was not even in my mind that they would have a website.

P 7: Samie.docx - 7:10 [Honestly like I was surprised ..] (43:43) (Super)
Codes: [Knowledge - Family: Awareness]
No memos

Honestly like I was surprised that Johannesburg is doing the whole smart city thing, like know ever told me about it, I didn't even know.

P 8: Baba Khumalo.docx - 8:1 [No I haven't used any hot spot..] (4:4) (Super)
Codes: [Knowledge - Family: Awareness]
No memos

No I haven't used any hot spot, I don't know about them

P 8: Baba Khumalo.docx - 8:2 [I was not even aware, you mean..] (6:6) (Super)
Codes: [Knowledge - Family: Awareness]
No memos

I was not even aware, you mean it is at the Rea-Vaya stations there? No I don't know, maybe it is because I don't use these area around here, I don't stay in the city and I don't travel around here, so I am not aware

P 8: Baba Khumalo.docx - 8:4 [I use my cellphone to connect ..] (10:10) (Super)
Codes: [Knowledge - Family: Awareness]
No memos

I use my cellphone to connect to the internet, using data, I have a contract with Cell C so yah I am not using Wi-Fi. But Wi-Fi might be good, but like I am saying, we are not aware of it, and it is not accessible. I mean I was not even aware that here! Here! At the Rea-vaya stations it is there, so there is Wi-Fi here?! (Sounding amused and excited). When did they roll it out? (Inquired with curiosity) early this year?

P 8: Baba Khumalo.docx - 8:5 [No I have not tried to use it...] (16:16) (Super)
Codes: [Knowledge - Family: Awareness]
No memos

No I have not tried to use it. But now that I know it is here I can use. So I can switch off my data and save my data? (Sounding excited)

P 8: Baba Khumalo.docx - 8:6 [For sure? (Responded excitedly..] (18:18) (Super)
Codes: [Knowledge - Family: Awareness]
No memos

For sure? (Responded excitedly and impressed) No we were not aware (laughs friendly) yah we were not ohh so it is free? hehehehe okay, No thank you for telling us, we were not aware

P 8: Baba Khumalo.docx - 8:8 [I have heard about the home af..] (24:24) (Super)
Codes: [Knowledge - Family: Awareness]
No memos

I have heard about the home affairs one, and I do use it. Because you know home affairs they have done a good job communicating their policy

P 8: Baba Khumalo.docx - 8:9 [Like for example, when they an..] (24:24) (Super)
Codes: [Knowledge - Family: Awareness]
No memos

Like for example, when they announced the use of a smart card they told people. And home affairs you are always forced to access it because in home affairs a lot of things keep changing, and the price of ID's and price of passports keep changing so you are always forced to access that one to get up to date information. With the other websites it depends on the information you need to get. So with the home affairs one I know I can find updates about ID's and passports

P 8: Baba Khumalo.docx - 8:14 [But now I know that I can get ..] (32:32) (Super)
Codes: [Advertisement - Family: Awareness] [Knowledge - Family: Awareness]
No memos

But now I know that I can get information about things I need on the websites. May be also before I took things for granted. Mostly people are ignorant, they don't take things seriously . People feel like they should go straight to the government department to ask and get information they need. But if they advertise these websites in our faces, we will be forced to learn. They can use TV, and when we see this advertisement on TV we will take our phones same time and try to access and see what they are talking about. And next time we will not go to the government department anymore because we will know that we can get information on the websites

P 8: Baba Khumalo.docx - 8:15 [It also comes down to paradigm..] (34:34) (Super)
Codes: [Familiarity - Family: Effectiveness of Smart City Services] [Knowledge - Family: Awareness] [Personal interests - Family: User needs]
No memos

It also comes down to paradigm shift, shifting to using the websites when we need something and making it part and part of our lives

P 9: Isaac.docx - 9:7 [They should have more hotspots..] (20:20) (Super)
Codes: [Knowledge - Family: Awareness]
No memos

They should have more hotspots and people should have the knowledge that there are hotspots like I didn't know that there were hotspots at the rea-vaya bus stations, my friend just told me recently so I didn't really know. Most of the people are not aware I have only heard it from few people that you can connect there, so I don't think that most people know

P 9: Isaac.docx - 9:11 [They have to talk about these ..] (35:35) (Super)
Codes: [Knowledge - Family: Awareness]
No memos

They have to talk about these websites, maybe in the news or something, show them on TV . And again the issue of how people access the websites is quite difficult, because it is us that are supposed to go and seek information so like you only get that information if you are looking for it, if you are not looking for it you will never get it. People don't get out of their comfort zone to try and see what's out there

P 9: Isaac.docx - 9:14 [I don't think people have enou..] (39:39) (Super)
Codes: [Knowledge - Family: Awareness]
No memos

I don't think people have enough information about the websites, so if maybe they could have information they will start using it. Because there are some sites that are connected to Facebook, so if the government websites can also be connected to Facebook then maybe more people can see them and use them

P 9: Isaac.docx - 9:15 [They should put information ab..] (39:39) (Super)
Codes: [Advertisement - Family: Awareness] [Knowledge - Family: Awareness]
No memos

They should put information about the websites on the most used sites like twitter and Facebook, because most people nowadays use twitter and Facebook so if they can connect to those kinds of sites then people will start recognizing it. They should also advertise on media, like media is the fastest thing nowadays, just put it out there and explain to the people. And if they could send messages to schools, it would be better, send emails to all the schools that are registered to inform them to teach the kids about the websites. I think it is easier that way, at least you make sure that the message reaches all schools and the teachers will now pass the word to the students.

P 9: Isaac.docx - 9:16 [I think most of us are also ig..] (41:41) (Super)
Codes: [Knowledge - Family: Awareness] [Personal interests - Family: User needs]
No memos

I think most of us are also ignorant, we are not doing enough to utilize all the resources made available to us, so people should be educated about these resources, and also the effort should also be coming from us, the once who want those services

P 9: Isaac.docx - 9:17 [All they have to do is to rais..] (43:43) (Super)
Codes: [Knowledge - Family: Awareness]
No memos

All they have to do is to raise awareness, the rest is up to us, and they cannot force anyone to do something. The rest is up to us to go and use the resources. And in schools, most of us are not told about this things, so what we learn now in school is that when we finish matric we have to go to university, so if they can give out information

about the websites in schools, maybe we can use them, we will be more attentive to this kind of things, because now all we do is study, we want to go to varsity, we don't care about other things. They should provide information, just provide the information then we will work on our paths, whether we want to use the information or we don't want to use the information, they should do their part, and provide information.

P11: Steven.docx - 11:10 [No I have not used them, becau..] (27:27) (Super)
Codes: [Knowledge - Family: Awareness]
No memos

No I have not used them, because I don't know even one of the websites you are talking about

P11: Steven.docx - 11:11 [I don't even know anyone who u..] (29:29) (Super)
Codes: [Knowledge - Family: Awareness]
No memos

I don't even know anyone who uses them, no one has ever mentioned them to me, and you are the first one to talk about them

P11: Steven.docx - 11:12 [I didn't know they exist, it's..] (31:31) (Super)
Codes: [Knowledge - Family: Awareness]
No memos

I didn't know they exist; it's the first time hearing about them

P11: Steven.docx - 11:13 [I don't really follow informat..] (33:33) (Super)
Codes: [Knowledge - Family: Awareness]
No memos

I don't really follow information about the city, some staff I just get by getting around, I ask around, I get information from rumors, I talk to people, I don't necessarily have to dig for it, like I am not really interested

P11: Steven.docx - 11:14 [The websites are not popular, ..] (35:35) (Super)
Codes: [Knowledge - Family: Awareness]
No memos

The websites are not popular; people don't know about them or even know people who use them

6. TRUST

Reputation

P 3: Andile.docx - 3:33 [So I trust SARS because I alwa..] (56:56) (Super)
Codes: [Reputation - Family: Trust]
No memos

So I trust SARS because I always do my e-filling on SARS. So it is quick, I don't have to stand in the line, and you hardly hear stories that someone did their e-filling with SARS and it got messed up

P 3: Andile.docx - 3:35 [for the city of Johannesburg, ..] (58:58) (Super)

Codes: [Reputation - Family: Trust]
No memos

For the city of Johannesburg, the whole billing crisis, Ae yah, it makes one not to trust them hey.

P 3: Andile.docx - 3:36 [Yes because it was Joburg bill..] (60:60) (Super)
Codes: [Reputation - Family: Trust] [Trust in technology - Family: Trust]
No memos

Yes because it was Joburg billing. I don't trust the website based on the stories that I have heard, not necessarily based on experience

P 4: Mrs Jane.docx - 4:3 [From a friend] (12:12) (Super)
Codes: [Reputation - Family: Trust]
No memos

From a friend

P 9: Isaac.docx - 9:2 [: I heard from a friend, and I..] (12:12) (Super)
Codes: [Reputation - Family: Trust]
No memos

: I heard from a friend, and I was like if it is free let me just connect and see what happens, and how fast it is

Trust in government

P 2: Maria.docx - 2:21 [People don't trust the governm..] (62:62) (Super)
Codes: [Trust in government - Family: Trust]
No memos

People don't trust the government (responded with a hint of mockery, then laughs again)

P 2: Maria.docx - 2:23 [And people are a little remove..] (64:64) (Super)
Codes: [Trust in government - Family: Trust]
No memos

And people are a little removed away from anything that has to do with the government because it sounds like it either does not work or things are not accurate (Laughs)

P 2: Maria.docx - 2:33 [Convenient, but also I trusted..] (110:110) (Super)
Codes: [Trust in government - Family: Trust]
No memos

Convenient, but also I trusted that maybe if they put up something on the website then it is credible enough. That if it has been put up by them maybe the information has gone through a check and challenge process for it to be taken to be true

P 3: Andile.docx - 3:30 [I think people think because i..] (52:52) (Super)
Codes: [Trust in government - Family: Trust]
No memos

I think people think because it is government then people will steal their staff. But I think for now I can trust them, they haven't given me reason not to trust them. if they gave me reason not to trust them then I wouldn't trust them

P 3: Andile.docx - 3:32 [I have used the SARS one, beca..] (56:56) (Super)
Codes: [Convenience - Family: Value of Smart City Services] [Trust in government - Family: Trust]
No memos

I have used the SARS one, because it is the only one I have a need for. But the other ones I don't trust them (responds with a hint of mockery and laughs). Yah, now it is trust. Because like the thing with SARS is that they are so convenient. Yah it is still government but you know other government departments don't work like SARS, unfortunately. So I trust SARS because I always do my e-filling on SARS. So it is quick

P 3: Andile.docx - 3:59 [and I think unfortunately peop..] (100:100) (Super)
Codes: [Trust in government - Family: Trust]
No memos

And I think unfortunately people don't trust the government. In a way it is unfair, but also the city of Johannesburg people are not doing anything to give that perception you know what hey, we are not just government, this is what we offer you, and these are the types of services that we have online

P 3: Andile.docx - 3:61 [So I think access, marketing a..] (100:100) (Super)
Codes: [Advertisement - Family: Awareness] [Connectivity - Family: Access] [Trust in government - Family: Trust]
No memos

So I think access, marketing as well, and trust. I think those are the top 3.

P 3: Andile.docx - 3:66 [If they can improve their effi..] (104:104) (Super)
Codes: [Cost saving - Family: Value of Smart City Services] [Trust in government - Family: Trust]
No memos

If they can improve their efficiency you know, and just market themselves well, then I think they will find more people using their websites. Because I really think people want to use their e-services, but because like we don't trust the government, people feel like they would rather go there to government offices and tell them , oh but I am having this problem when are you guys going to fix it?

P 5: Jacob.docx - 5:32 [(Laughs) No, look, I mean gove..] (71:71) (Super)
Codes: [Trust in government - Family: Trust] [Trust in the information provided - Family: Trust]
No memos

(Laughs) No, look, I mean government, they announce something in advance and they postpone. Sometimes you have to check if things are still happening. So I don't buy the story when I see it for the first time, when I see a public notice. And when you make a follow up to find out, you find that people in charge are on leave and you find these acting people, I don't like to deal with acting people. Because sometimes you have questions that you really want to understand, and you need to ask them to the real guy, so this acting guy will always say they will transfer your message and it never gets there. So I don't feel like I can trust them

P 9: Isaac.docx - 9:13 [And yes I think I can trust th..] (37:37) (Super)
Codes: [Trust in government - Family: Trust]
No memos

And yes I think I can trust the information they have on the websites because this is the city, I think we are counting on the city, they can't just feed us wrong information it is definitely illegal. So I am confident that most of the projects they say they are going to do they will be implemented

Trust in technology

P 2: Maria.docx - 2:12 [Because it is public, so I wou..] (33:33) (Super)
Codes: [Trust in technology - Family: Trust]
No memos

Because it is public, so I would use it for public type of information.

P 2: Maria.docx - 2:13 [I don't think that it is very ..] (35:35) (Super)
Codes: [Trust in technology - Family: Trust]
No memos

I don't think that it is very secure. I mean thing is if it is open to the public then chances are that they monitor it. Sometimes if I am accessing a public network, I am thinking that if I access my banking profile using that, maybe someone can hack into my account or someone can get my credentials (her voice taking a solemnity tone). So I don't really think it is safe. But in terms of accessing general information, I think that I would use it.

P 2: Maria.docx - 2:14 [another reason would be trust ..] (41:41) (Super)
Codes: [Trust in technology - Family: Trust]
No memos

Another reason would be trust issues. So if I would have access to it, I would use it for public things or general information. But I wouldn't really use it for personal things where I have to provide my personal credentials like my account information, paying of bills and all that.

P 2: Maria.docx - 2:18 [To increase the use, I think, ..] (51:51) (Super)
Codes: [Knowledge - Family: Awareness] [Trust in technology - Family: Trust]
No memos

To increase the use, I think, remember I keep repeating myself on trust. So I think people need to be made aware that it is a safe platform. And that they can use it for their personal things. And that their credential will not be stolen. Remember crime is a huge thing in Joburg, and everyone has that at the back of their heads. And if they are told that this is free for everybody to use, but we don't know how safe it is, it might hinder, hence the low use. Perhaps the use of it right now is not very up because of that. But I think, I still think that it is the security issue.

P 2: Maria.docx - 2:51 [SARS does things electronically..] (164:164) (Super)
Codes: [Knowledge - Family: Awareness] [Trust in technology - Family: Trust]
No memos

SARS does things electronically; they encourage people to do things electronically so you literally want to do things electronically. And they have made the platform in such a way that I can trust it, and also I can use it very quickly, and I can quickly get help if I am stuck

P 3: Andile.docx - 3:20 [And people use it, they trust ..] (42:42) (Super)
Codes: [Trust in technology - Family: Trust]
No memos

And people use it, they trust it

P 3: Andile.docx - 3:29 [Because thing is, let's say yo..] (52:52) (Super)
Codes: [Trust in technology - Family: Trust]
No memos

Because thing is, let's say you use Wi-Fi in Sandton, that can also be hacked. Even if you use your own data, you can also be hacked. So I don't buy into this whole argument that because it is government Wi-Fi then people will hack into it. You know if you are just careful with your phone, and you don't save your passwords then no one will hack into your accounts. Because you can use internet network from Vodacom you can also get hacked

P 3: Andile.docx - 3:36 [Yes because it was Joburg bill..] (60:60) (Super)
Codes: [Reputation - Family: Trust] [Trust in technology - Family: Trust]
No memos

Yes because it was Joburg billing. I don't trust the website based on the stories that I have heard, not necessarily based on experience

P 3: Andile.docx - 3:37 [Yah, even though I should view..] (64:64) (Super)
Codes: [Cost saving - Family: Value of Smart City Services] [Trust in technology - Family: Trust]
No memos

Yah, even though I should view them the same because it is the same thing, all government. But like SARS is super-efficient so I trust them

P 3: Andile.docx - 3:53 [I mean like there are other we..] (92:92) (Super)
Codes: [Trust in technology - Family: Trust] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

I mean like there are other websites that I don't trust but I still go back to them, because they have that thing you know, they have that attraction that pulls you to it. And you don't really trust it but you still come back to see what they have. But the city of Johannesburg website is like you don't trust them but they also don't attract you to come back. They don't have that thing you know, like that website thing

P 4: Mrs Jane.docx - 4:7 [I don't trust it for my person..] (30:30) (Super)
Codes: [Trust in technology - Family: Trust]
No memos

I don't trust it for my personal credentials because people can hack the system. I use it for general information, not for my credit card or accessing any of my banking details

P 4: Mrs Jane.docx - 4:26 [For some people the reasons ar..] (62:62) (Super)
Codes: [Trust in technology - Family: Trust]
No memos

For some people the reasons are that they are afraid of being hacked because now off-late there are cyber crimes. So sometimes it is difficult to convince people. It depends also on the level of understanding

P 5: Jacob.docx - 5:3 [Uhm, I would use it to check n..] (18:18) (Super)
Codes: [Trust in technology - Family: Trust]
No memos

Uhm, I would use it to check news on other informative websites. It will depend on what I really want to do. But I am avoiding using personal staff and credentials on an open Wi-Fi network. Because I believe in security, I am

an IT specialist so I know the consequences of using personal information on open networks like free Wi-Fi. I would rather have a secure platform. I feel like free Wi-Fi is not very secure so I would rather use it to read news, not personal staff

P 5: Jacob.docx - 5:13 [I trust my blackberry because ...] (38:38) (Super)
Codes: [Trust in technology - Family: Trust]
No memos

I trust my blackberry because I know the platform and I know what I want to get out of it. Blackberry enterprise server is always secure and governments have been trying to break into it. Even in India they wanted to force the Blackberry company to open the server for the government to know data and what people are doing. That gave me confidence that blackberry is secure. Every president uses blackberry if you didn't know about it, that is a fact. Because blackberry has its own enterprise server and it is secure. For me if I trust the technology I will use it

P 5: Jacob.docx - 5:14 [As a technical person, Yes, I ..] (40:40) (Super)
Codes: [Trust in technology - Family: Trust]
No memos

As a technical person, Yes, I am always weary about what needs to be out there personally, and I would rather be guarded and protect my personal information

P 5: Jacob.docx - 5:15 [Not only protection from the g..] (42:42) (Super)
Codes: [Trust in technology - Family: Trust]
No memos

Not only protection from the government but from the hackers and anyone who would feel a need to look into my personal staff, like someone going behind my back to find information about you. That is why I want to feel protected

Trust in the physical safety of the environment

P 2: Maria.docx - 2:6 [I don't really trust Joburg ce..] (27:27) (Super)
Codes: [Trust in the environment - Family: Trust]
No memos

I don't really trust Joburg central, I mean I know that there is a bunch of security guards, I know that there is police, even the spots where you can access the Wi-Fi itself, they are pretty much safe. But I still have that in my mind that someone is going to come and snatch my phone and run away with it while I am waiting there trying to access Wi-Fi. So am not so keen on carrying any gadget when I am in Joburg central.

P 5: Jacob.docx - 5:10 [At the end of the day they sho..] (34:34) (Super)
Codes: [Trust in the environment - Family: Trust]
No memos

At the end of the day they should put it in places where it is safe and secure and there is tight security. Because you can't just pop up with a smart phone everywhere in the streets while you are looking for Wi-Fi, putting your phone up in the sky to see whether you can connect (responded with a hint of mockery)

Trust in the information provided

P 1: Bra Gee.docx - 1:32 [News24 to me it's very uhm rel..] (90:90) (Super)

Codes: [Reliability of alternative source - Family: Alternative Information Sources] [Trust in the information provided - Family: Trust]
No memos

News24 to me it's very uhm reliable, it's also truthful, I don't know if truthful is the word to use but you know, information you get is very accurate, and it's not biased, it does not favour anyone, it just represents news as they are. And yah, it also has local; I mean it covers local news and international news

P 3: Andile.docx - 3:60 [It tried for Rea-vaya, there w..] (78:78) (Super)
Codes: [Trust in the information provided - Family: Trust]
No memos

It tried for Rea-vaya, there was a strike so I was trying to check if the city of Johannesburg has updated information about the strike, like when is it going to end, you know, and when the strike ends what routes will be coming back. So I went to the website and I was like ah, this people, this information is not updated. They still tell you what Rea-vaya is, but there was nothing really specific about the strike and progress of the strike. So it was really frustrating. And then I tried sending them queries online, till this day I am still waiting for a response.

P 4: Mrs Jane.docx - 4:18 [Government information is reli..] (53:53) (Super)
Codes: [Trust in the information provided - Family: Trust] [Usabiity - Family: Effectiveness of Smart City Services]
No memos

Government information is reliable on the websites as well

P 5: Jacob.docx - 5:32 [(Laughs) No, look, I mean gove..] (71:71) (Super)
Codes: [Trust in government - Family: Trust] [Trust in the information provided - Family: Trust]
No memos

(Laughs) No, look, I mean government, they announce something in advance and they postpone. Sometimes you have to check if things are still happening. So I don't buy the story when I see it for the first time, when I see a public notice. And when you make a follow up to find out, you find that people in charge are on leave and you find these acting people, I don't like to deal with acting people. Because sometimes you have questions that you really want to understand, and you need to ask them to the real guy, so this acting guy will always say they will transfer your message and it never gets there. So I don't feel like I can trust them

P 8: Baba Khumalo.docx - 8:17 [As people, we trust hearing go..] (36:36) (Super)
Codes: [Trust in the information provided - Family: Trust]
No memos

As people, we trust hearing government officials telling us information, so using the websites we risk getting outdated information (responded pensively). But a government official you are asking might say I am not sure let me go and find out for you whether it is still like that. So yes, people always rely on getting it from the horse's mouth, home affairs or any other government department. Because for license information, you will always get people hearing information from the websites but they will say no I want the government official to tell me the procedure, I want to get it from the horse's mouth. We have that mind set, so they should raise awareness and change the mindset

P10: Peter.docx - 10:16 [I think I can trust it, all th..] (33:33) (Super)
Codes: [Trust in the information provided - Family: Trust]
No memos

I think I can trust it, all the information that I got from the websites it's been useful, I trust it very much, I have never seen anyone going into the websites and putting rubbish, maybe it is because I am to trusty I don't know, but I have never found wrong information

P11: Steven.docx - 11:16 [And one of the thing why peopl..] (39:39) (Super)
Codes: [Trust in the information provided - Family: Trust]
No memos

And one of the thing why people are not using it is because of crime, fraud, you know people have been getting the messages that they have won some money and need to send their details then they take your account number and steal your money

7. ACCESS

Connectivity and Region of stay

P 1: Bra Gee.docx - 1:2 [My phone, it is a smart phone] (7:7) (Super)
Codes: [Connectivity - Family: Access]
No memos

My phone, it is a smart phone

P 1: Bra Gee.docx - 1:3 [Yes, but I use my laptop most ..] (9:9) (Super)
Codes: [Connectivity - Family: Access]
No memos

Yes, but I use my laptop most of the time.

P 1: Bra Gee.docx - 1:9 [My phone detects it, it's like..] (23:23) (Super)
Codes: [Connectivity - Family: Access] [Findability - Family: Awareness] [Visibility - Family: Awareness]
No memos

My phone detects it, it's like open Wi-Fi detector or something, on my phone, you see (takes out phone and demonstrates something) it detects all the Wi-Fi networks available now.

P 1: Bra Gee.docx - 1:40 [What the Macdonalds Wi-Fi? uhm..] (27:27) (Super)
Codes: [Connectivity - Family: Access]
No memos

What the Macdonalds Wi-Fi? uhm.. I did’nt have cell-phone banking at the time, so you know it is very convenient to buy airtime on your cell-phone with cell-phone banking. So I just didn't feel like going out to get airtime, leaving Wi-Fi in the shop. And I was already waiting there to buy takeouts anyway.

P 2: Maria.docx - 2:1 [I use my phone, I use my deskt..] (13:13) (Super)
Codes: [Connectivity - Family: Access]
No memos

I use my phone, I use my desktop, I use my ipad, I use a whole lot of gadgets that I have

P 3: Andile.docx - 3:2 [With my phone, I use my phone...] (10:10) (Super)

Codes: [Connectivity - Family: Access] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

With my phone, I use my phone. So when I come to work I use the bus, so I use the city of Johannesburg Wi-Fi available at the rea-vaya stations. And it is fast, it is free. I can update my software, because you know updating software uses a lot of data

P 3: Andile.docx - 3:17 [It is accessible, it is fast, ..] (42:42) (Super)
Codes: [Connectivity - Family: Access] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

It is accessible, it is fast, it is free, even though we pay with our taxes (Laughs). But yah it is accessible it is fast. I mean like that is always what you want from your internet connection, speed and reliability. And the city of Johannesburg Wi-Fi has that. And it is better compared to other networks, your Vodacom's and your MTN's. I mean those guys are slow hey, but the city of Johannesburg one is fast and it is always there. And people use it, they trust it

P 3: Andile.docx - 3:24 [If you look at studies, one of..] (48:48) (Super)
Codes: [Connectivity - Family: Access]
No memos

If you look at studies, one of the main reasons why people in Africa don't use internet is because it is expensive and it is not available. So if you have free Wi-Fi then the whole notion will not exist anymore and people will also use government e-services. Because people don't use government e-services because they don't have connectivity. So they if they roll-out free Wi-Fi, especially to townships and rural areas, it will help the government to connect to the people on an easier basis. Because like if you have complaints I mean I complain a lot ne, I tweet a lot to the city of Johannesburg and they respond quickly on twitter, because we have that whole connectivity thing, we are connected, we can communicate. So if more people have access to the internet, then they can also communicate with the government and the government can tell people: look if you have problem with maybe service delivery, you can post your complaints on-line, then we will attend to it.

P 3: Andile.docx - 3:28 [I think for now they need to f..] (50:50) (Super)
Codes: [Connectivity - Family: Access] [Region of stay - Families (2): Access, User needs] [Utility - Family: Effectiveness of Smart City Services]
No memos

I think for now they need to first identify areas where they can roll-out free Wi-Fi and test it out. I think they should maybe start with the townships first, like start in Soweto. They should start rolling it out in the townships, see how it works. Because I think if they introduce it to more people, it might become slower because of more people using it. So they should also increase their broadband, its capacity, then I would love the city of Johannesburg Wi-Fi more

P 3: Andile.docx - 3:57 [I think the first one is just ..] (100:100) (Super)
Codes: [Connectivity - Family: Access] [Region of stay - Families (2): Access, User needs]
No memos

I think the first one is just connectivity, like access. Not everyone has access to the internet on a regular basis. For some people, they only get it when they are at work, school or university. But if they are just there at home, they don't have access to the internet

P 3: Andile.docx - 3:61 [So I think access, marketing a..] (100:100) (Super)
Codes: [Advertisement - Family: Awareness] [Connectivity - Family: Access] [Trust in government - Family: Trust]

No memos

So I think access, marketing as well, and trust. I think those are the top 3.

P 4: Mrs Jane.docx - 4:5 [At home I don't have Wi-Fi con..] (20:20) (Super)
Codes: [Accessibility of alternative source - Family: Alternative Information Sources] [Connectivity - Family: Access]
No memos

At home I don't have Wi-Fi connection, It's only when I use my cell-phone, because I use my mega-bytes, or when I use my ipad taking data from my megabytes.

P 4: Mrs Jane.docx - 4:22 [Remember we are not all profes..] (59:59) (Super)
Codes: [Connectivity - Family: Access]
No memos

Remember we are not all professionals, we are not all educated, and we are not all information literate. So off course there will be challenges, it will not be used hundred percent. It will only be used by people who are able to use it and those that have access to the internet. But those people who don't have access to the internet, they will not be able to use this things

P 5: Jacob.docx - 5:19 [Firstly people may not be usin..] (50:50) (Super)
Codes: [Connectivity - Family: Access]
No memos

Firstly people may not be using these hotspots because of accessibility. If people don't know how to access the services then it is a problem on its own

P 9: Isaac.docx - 9:5 [It's not that easy for me to a..] (16:16) (Super)
Codes: [Connectivity - Family: Access]
No memos

It's not that easy for me to access free Wi-Fi, but the government is making a good step to try and make it available to everyone

P 9: Isaac.docx - 9:6 [It is not always easy to conne..] (18:18) (Super)
Codes: [Connectivity - Family: Access]
No memos

It is not always easy to connect, because sometimes with public Wi-Fi the Wi-Fis are locked and need password

P11: Steven.docx - 11:1 [I use my phone, my phone is a ..] (6:6) (Super)
Codes: [Connectivity - Family: Access]
No memos

I use my phone, my phone is a smart phone it connects to the internet

P11: Steven.docx - 11:8 [they should make more hotspots..] (20:20) (Super)
Codes: [Connectivity - Family: Access]
No memos

they should make more hotspots because we use internet, each and every day we would want to know news what is happening around the country. But then we do not know because we don't have free Wi-Fi, we have to buy data in order to have internet and know what is happening in our country so it is difficult

P12: Thabo.docx - 12:6 [By it installing it also at th..] (26:26) (Super)
Codes: [Connectivity - Family: Access]
No memos

By it installing it also at the tuk shops, especially in Soweto

P 2: Maria.docx - 2:4 [There are certain spots within..] (23:23) (Super)
Codes: [Region of stay - Families (2): Access, User needs]
No memos

There are certain spots within central Joburg where you can access it right? I don't stay anywhere near the city and I rarely go there,

P 2: Maria.docx - 2:5 [I haven't explored that option..] (25:25) (Super)
Codes: [Region of stay - Families (2): Access, User needs]
No memos

I haven't explored that option because I am not usually in the vicinity where it is available.

P 3: Andile.docx - 3:6 [Not only to save money, but al..] (22:22) (Super)
Codes: [Region of stay - Families (2): Access, User needs] [Usabiity - Family: Effectiveness of Smart City Services] [Utility - Family: Effectiveness of Smart City Services]
No memos

Not only to save money, but also availability and because it is quick. You know like sometimes in Soweto, MTN network is bad. So it is good to get Wi-Fi that is fast and quicker, so yah I prefer it because of that actually, besides saving, the speed of it.

P 3: Andile.docx - 3:28 [I think for now they need to f..] (50:50) (Super)
Codes: [Connectivity - Family: Access] [Region of stay - Families (2): Access, User needs] [Utility - Family: Effectiveness of Smart City Services]
No memos

I think for now they need to first identify areas where they can roll-out free Wi-Fi and test it out. I think they should maybe start with the townships first, like start in Soweto. They should start rolling it out in the townships, see how it works. Because I think if they introduce it to more people, it might become slower because of more people using it. So they should also increase their broadband, its capacity, then I would love the city of Johannesburg Wi-Fi more

P 3: Andile.docx - 3:57 [I think the first one is just ..] (100:100) (Super)
Codes: [Connectivity - Family: Access] [Region of stay - Families (2): Access, User needs]
No memos

I think the first one is just connectivity, like access. Not everyone has access to the internet on a regular basis. For some people, they only get it when they are at work, school or university. But if they are just there at home, they don't have access to the internet

P 8: Baba Khumalo.docx - 8:3 [I don't stay in the city and I..] (6:6) (Super)
Codes: [Region of stay - Families (2): Access, User needs]

No memos

I don't stay in the city and I don't travel around here, so I am not aware

P10: Peter.docx - 10:5 [another thing is I don't stay ..] (6:6) (Super)
Codes: [Region of stay - Families (2): Access, User needs]
No memos

another thing is I don't stay in the city , I stay outside of the city, so we don't have Wi-Fi, we can only get access to Wi-Fi when we go to places like Macdonald at South gate mall, the mall I use

P10: Peter.docx - 10:6 [I am not aware of the one in t..] (10:10) (Super)
Codes: [Region of stay - Families (2): Access, User needs]
No memos

I am not aware of the one in the city in fact I think I come to the city only once a month, I only come here to bring my wife for a check-up at the doctor , like now I am at Brenthurst clinic now for her check-up

P11: Steven.docx - 11:4 [I use the one at eastgate beca..] (14:14) (Super)
Codes: [Region of stay - Families (2): Access, User needs]
No memos

I use the one at eastgate because it is accessible to me, I stay close to eastgate

E-skills

P 4: Mrs Jane.docx - 4:23 [There should be someone who is..] (59:59) (Super)
Codes: [E-skills - Family: Access]
No memos

There should be someone who is showing people or training people on how to go about doing things on the websites. People need to use technology. And also they should be encouraged from an early stage, from high school or from junior level. Like if you want to check the bus schedule you can use the websites and this is how you can go about it. You can check what time does the bus leave, or what time does the bus arrive. And even for planes, when to catch a plane, you can go to Wi-Fi to connect and use the websites. People need to be trained. There should be more training and more adverts.

P 4: Mrs Jane.docx - 4:24 [They should start at an early ..] (60:60) (Super)
Codes: [E-skills - Family: Access]
No memos

They should start at an early level. Now off-late our kids are intelligent. They are sharp, they are clever, they know these things. But more people should be trained and have knowledge about this things

P 5: Jacob.docx - 5:21 [They can educate people by pro..] (50:50) (Super)
Codes: [E-skills - Family: Access]
No memos

They can educate people by providing training; people will not know how to use certain services if they are not trained. So they should go to the community centers where they can provide training or give manuals to people who can be able to figure out staff on their own

P 5: Jacob.docx - 5:40 [Since high schools are now goi..] (79:79) (Super)
Codes: [E-skills - Family: Access]
No memos

Since high schools are now going the e-learning route, this is some of the things that can be implemented in high schools. And even at universities, there should be e-learning courses or modules where students learn how to use e-government. There is end user computing at first year level, e-services should be part of that. And people should be made aware that if they don't have internet at home there are centers and hot spots around the city where they where they can do their assignments. Kids at school should be encouraged to tell their parents, brothers and sisters at home. Because remember people take information seriously if they see the importance of it. People who are studying should transfer that knowledge. These should be incorporated from high school level because nowadays the city of Johannesburg has embarked on e-learning in schools. And universities should try to put it as one of the first modules. People should learn computers early.