Abstract

Due to the high rate of e-government projects failures occurring in developing countries and the researcher being from a developing country, an impetus to undertake this research was provided. In IS research, diffusion of e-government products and services was noted to be slow within developing countries, and most developing countries striving to adopt e-government have undertaken it under the heavy burden of gender inequalities and strong multicultural beliefs. However, these social factors were shown to liberally influence users' perception, which in turn influences users' intentions and usage behaviour. Although there has been much research to explain users' perceptions, few have been conducted on e-government diffusion using developing country experiences. The identified gap prompted this research to investigate how the citizens of a country 'Nigeria' receive information about the egovernment products and services and how this information has influenced the way they feel, form opinions and make judgments on egovernment products and services. *Therefore, the aim of this research is to examine the implication of culture and gender upon e-government diffusion within Nigeria.* For this purpose, a conceptual model was formed combining social interaction, trust of egovernment delivery personnel and constructs from Roger's theory of diffusion and Technology Acceptance Model (TAM) to study e-government diffusion from the citizens' perspective. Additionally, the culture and gender elements were considered. In turn, these elements were expected to determine and explain predictor constructs that would be used to explain, determine and predict citizen's acceptance of e-government products and services. To acquire the data to this research, a qualitative research approach involving the case study method was employed. The data collection techniques used included interviews, personal observations, and examination of archival documents. The three main indigenous communities of Nigeria Yoruba, Ibo and Hausa were used and cross case analysis employed. This led to the findings identifying social interaction and the trust of personnel providing egovernment as the novel parts of the framework for this research. The main conclusions drawn from this research were that culture and gender were observed to have strong influences on social interaction as an e-government awareness channel; but significantly low influence on the other means of e-government awareness channels. Further, social interaction was noted to be a very strong determinant of communication within the indigenous societies. From the research findings it was learnt that for e-government to spread extensively, social interaction should be employed to improve the diffusion of e-government products and services. Future directions of this research include using a quantitative research approach to improve research findings and also investigating the relationships of trust of egovernment personnel and other forms of trust identified by previous research, i.e. the trust of government and trust in e-government. However, the view of this research is that since few studies of this kind are emphasized within IS research evaluating e-government diffusion, developing countries, culture and gender, other researchers interested in a topic similar to this research will learn of the importance of this research and these factors for other developing countries in the world. Due to the limitations of time and distance and financial constraints all the indigenous communities could not be represented. Hence, this was also considered to be a limitation to this research.

Key words: *e-government, culture, gender, diffusion, social interaction*

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List of Abbreviations

IS   Information Technology

ICT   Information, Communication Technologies

PD   Power distance

UA   Uncertainty Avoidance

LO   Low Term

RLP   Research Liaison Personnel

PUE   Perceive usefulness of e-government

EAC   E-government awareness channel

Publications

This thesis includes the following research papers that have been published as a result of this research study.

Choudrie, J., Umeoji, E. and Forson, C. (2010). Diffusion of E-Government in Nigeria: a Qualitative study of Culture and Gender. Accepted at and presented at pre-ICIS SIG Gobal Development Workshop, Saint Louis, Missouri, USA. December 12, 2010.

Choudrie, J., Umeoji, E. and Forson, C. Cultural and Gender Implications on E-Government Diffusion in Nigeria. In preparation for *European Journal of Information Systems*. To be submitted summer 2011.

<div align="center">**Chapter I**</div>

1. Introduction

1.1 Background to the research problem

This chapter offers a brief and general understanding of the main topics of this research. It also presents an insight into e-government diffusion by explaining how citizens interact with technology and whether such interactions are affected by social factors. Before proceeding to discuss the main issues of this research, an introduction to terms used within this study will be presented and an explanation of the research problem will be offered to show justification for this research. Also, a brief explanation on the location of the data collection will be offered to provide further understanding of the use of some procedures and processes adopted in this research.

1.1.1 E-government

As suggested by the title of this thesis, e-government is a term which is frequently used in this study, so brief explanations are offered to assist the reader to understand the meaning and use of this term includes the meaning as defined by other researchers and stakeholders. This will also improve the knowledge of the reader with regard to the basis of this research. Simply stated, e-government refers to an electronic form of government, which is based on Internet technology. Due to the immense number of countries striving to achieve this form of provision of government products and services, there has been overwhelming attention paid to this topic. As it stands, e-government is a diverse term that has various implications for various people (Grant & Chau, 2005). This has resulted in various definitions offered by different researchers and other interest groups.

Some researchers believe that it is practically impossible to give a definite definition of e-government as long as the definition comes from its activities rather than the necessary technology (Yildiz, 2007). Some describe it in terms of improving government operations for service delivery (Kumar and Best, 2006), while others describe it as cost saving projects for government operations (ADB, 2003; Eggers, 2004).

Furthermore, some consider e-government to be a means of increasing transparency, reducing corruption and enhancing citizen participation in political activities (UN-ASPA, 2002). In continuation, others describe e-government as a means to make government more competitive and to provide an avenue for government to meet the challenges of the digital age (OECD, 2003; UNDP-APDIP, 2003; Kumar et al., 2007). E-government has also been defined as an improvement of productivity (Gichoya, 2005). Upon analysing the definitions, it is observed that researchers normally define e-government in terms of research interests and align the definition of e-government with their area of interest.

To conclude, it can be asserted that e-government is defined in terms of research interests that encompass various areas; however, within IS academic study some definitions tend to be more general than the rest. This makes some definitions more acceptable than others within the Information Systems (IS) arena. The IS group defines e-government as the use of various information management and communication technologies (ICT) to promote more effective

government, facilitate easier access to government services, allow greater public access to information, and make government more accountable to its citizens (Lindberg, 2005).

As a result of this brief analysis, e-government is defined for the purposes of this research as: leveraging Information and Communications Technologies (ICTs) to simplify government processes, provide better services to society and allow the public better and easier access to information. When considering e-government, the adoption and implementation of ICT in terms of countries, only developing countries are considered. Most developing countries around the world are adopting e-government technology, but its failure rate is noted to be high (Heeks, 2002, 2003). This study will examine the success and failures of e-government within a region in the following sub-section.

1.1.2 Success and failures of e-government

It has been over a decade since e-government was first implemented (UNDP-APDIP, 2003). During this time, is has become an established fact that e-government project failures vary within localities (Heeks, 2002, 2003; Kumar and Best, 2006; Heeks and Bailur, 2007). Although most governments are implementing e-government, the success of this project has not been uniform across all countries (UNDP-APDIP, 2003; Unpan, 2001). E-government development failures are mostly prevalent in developing countries (Heeks, 2002, 2003) and this has prompted research to consider ways to improve the success rate of e-government in developing countries. Since e-government is viewed to be pertinent to a country's progression, it has the capability to improve the world's poverty level by 80%; thereby making it an impossible issue to ignore (Unpan, 2001).

It has also been found that the gap between developed and developing countries in terms of e-government adoption is increasing on a daily basis (UN-ASPA, 2002). Some researchers attribute this to the developing countries' strategies of adopting e-government (Heeks, 2003; Yildiz, 2007). Research suggests that the difference between developed and developing countries' e-government adoption lies mostly in societal factors rather than any other identified factors (Hofstede, 1980, 1991; Hofstede et al 2010; Heeks, 2003; Yildiz, 2007). Although the success of e-government in developed countries could be exaggerated, it is believed that the majority of the failures of e-government projects appear to occur in developing countries (Ciborra, 2005; Heeks, 2003). Heeks (2003) found that over 35% of e-government projects in developing countries fail and about 50% can be described as partial or abandoned failures. Furthermore, Heeks (2003) attributes the reasons for failure to social factors.

With this in mind, for the purposes of this research, the review will not go into the identification of problems, but will concentrate on the examination of already identified social factor problems, as described by Heeks (2003). Amongst the recorded e-government failures, Africa is the continent that has recorded the highest failure rates (Heeks, 2003).

1.1.3 Understanding e-government failure in the African region

Previous research has found that Africa has diverse levels of Information and Communication Technologies (ICT) growth, even though the rate of ICT access per 1000 and causes of delays in ICT diffusion might be similar (Bagchi et al., 2007; Brown, 2007). These differences might be as a result of human and environmental variables (Bagchi et al., 2007). These variables include the cultural symbols societies share, an argument which was also supported by Heeks (2002) and Stahl and Elbeltagi (2004).

Studies have shown that there is slow diffusion of ICT in Africa and this has affected the rate of development in the continent (Bagchi et al., 2007; Kasekende, 2006; Brown, 2007). It has been mentioned that gender inequality and cultural background are some of the factors that have contributed to this slow diffusion (Kasekende, 2006). These problems have always been treated on a general platform, but these factors vary across Africa. It is known that cultural behaviour, practices and beliefs in human societies are variables in space and time (Guglielmino et al., 1995). Therefore the generalising of the problem of technology diffusion in Africa might be a problem in itself, particularly considering the multicultural nature of African societies. From the above findings, it is declared that this research will examine the social factors believed to be affecting the diffusion of technology, with regard to e-government. In order to achieve this, the study selected two main variables to be considered: the culture that a society shares, and gender. Having selected these two variables, it is necessary to briefly explore the background of the two factors.

1.1.4 A brief review of social factors affecting ICT development in Africa.

Research regarding the issues of culture and gender in Africa has highlighted the importance of these two issues in the development of the region (Hasan and Dista, 1999; Ifenedo, 2005; Ogbomo, 2009; Bates et al., 2007; Kasekende, 2006). Emphasis has been placed on the importance of the two factors in all stages of development in developing countries (Harrison and Huntington, 2001; Kasekende, 2006; Evans and Yen, 2005; Stedham and Yamamura, 2004; Hafkin and Taggart, 2001). Attention has been drawn to the need to approach any developmental activity in developing countries using these factors (ibid). These factors cannot be the same across society, but could have similarities, especially in gender roles and activities (Kasekende, 2006). The next sub-section briefly discusses the theoretical aspects of gender with regard to this research.

1.1.5 A brief insight into gender studies

Gender is commonly viewed as a mere sexual difference between a man and a woman, which determines the societal duties and norms by which they live (Wiesner-Hanks, 2001).In any case, distinction was made between gender and sex, that sex is a biological category; whereas gender is the cultural shaped expression of sexual difference: the masculine way in which men should behave and the feminine way in which women should behave (Ibid). This suggests that gender refers to socially and culturally determined attributes categorised as masculine and feminine, a view equally shared by many authors (Hardwick, 1998; Wiesner-Hanks, 2001). Having clarified the gender issue, this section will go on to discuss gender development research in Africa.

Gender inequality plays a significant role in accounting for Africa's poor rates of diffusion of ICT (Morgan et al., 2004a; Kasekende et al., 2006). Women are frequently treated as second class citizens; their interests are often represented by their husbands or fathers and access to information is highly repressed (Bardasi et al., 2006: 70). "African societies' laws and customs impede women to a greater extent in obtaining education, training and information needed" (Bardasi et al., 2006: 70). This shows that gender has been recognised as an important factor for global development, including the African continent. Research has shown the importance of gender sensitivity in the development of IS projects. This research will briefly explain the need for gender consciousness in terms of IS development.

1.1.6 Gender and ICT development

When diffusing ICT, many countries have found women to have a major role in the acceptance of the technology. A study of broadband diffusion in South Korea found that "the strategy of educating women on Internet usage paid off; therefore the interest of women in the use of Internet will stimulate both the children and the interest of the entire family toward ICT adoption" (Choudrie and Lee, 2004,). This triggered more household adoption of ICT and contributed to the high residential broadband market (Toure, 2007). Although gender sensitivity might be vital in the development of such projects, there are still issues regarding how different societies treat sexual differences. The way a society views gender is dependent on the culture of the society. Insensitivity towards gender is normally an inherent factor in a culture that attaches importance to individual sex (Stahl and Elbeitagi, 2004). To improve our understanding of the research, a brief review of culture is offered.

1.1.7 Meaning of and views on culture

Culture is viewed as a system of collectively held values (Hofstede, 1983) and is categorised in two forms. Firstly, the culture of a society and, secondly, culture at a lower level, such as organisational or corporate culture (Stahl and Elbeltagi, 2004). This research deals with the culture of a society, which can also be viewed as the citizens' way of life (Stahl and Elbeltagi, 2004). The citizens' way of life forms their attitude and the way they approach life occurrences (Stahl and Elbeltagi, 2004). "Culture is a collective phenomenon because is partly shared with people who live or lived within the same social environment which is where it was learned" (Hofstede and Hofstede, 2005: 4). It is the collective programming of the mind that distinguishes the members of one group of people from others (ibid). However, culture has been described as being very difficult to define. For the purposes of this research, culture will be viewed as the behavioural pattern common amongst a group of people that can be commonly identified by a symbol (Stahl and Elbeltagi, 2004). Moreover, the culture of a society holds the beliefs shared by the society (Stahl and Elbeltagi, 2004; Hofstede and Hofstede, 2005). This definition was selected for this research, as this study examines the practical implications of culture on IS technology.

1.1.8 Culture and ICT development

To underline the importance of culture in diffusion of e-government and ICT, diverse schools of thoughts have emerged with different views. However, different approaches to cultural studies have emerged in information system studies. One school of thought believes that culture is best understood by Hofstede's (1980) nationalistic approach to culture (Kovacic, 2005). However, a contrasting view is that culture is more dynamic (Lizie et al., 2004; McSweeney, 2002). Although there is agreement on the scope of culture, its importance in e-government is reiterated based on the fact that successful use of ICT depends to a large extent on the underlying societal and organisational culture (Stahl and Elbeltagi, 2004; Heeks, 2002, 2003; Heeks and Bailur, 2006).

The former states that the versatility of countries and culture has made it imperative for countries to determine culture in their own way while striving for ICT development. "Each country should find its own way to the optimal e-government readiness which is consistent with the national culture" (Kovacic, 2005). Choudrie et al (2003) quote Watson (1998), stating that the alignment of technology policy with national culture can play a role in the shaping of the national information infrastructure. This definition of culture gives the impression that it is more of a national issue and the diffusion and adoption of ICT should be studied along this axis.

However, the latter school of thought believes that culture should not be examined along a national axis; rather, it should be examined on cultural units that correctly determine ICT diffusion and adoption (Lizie et al., 2004; McSweeney, 2002). It has been established that the meaning of ICT adoption and usage is not uniform across culture (ibid). As such, ICT success is not only a question of access, but also one of cultural sensibility. That is, a cultural background contributes to the adoption and the usage of ICT (Lizie et al., 2004); therefore, technology should be aligned along cultural perspectives. This definition expresses the fact that culture is versatile and, as long as there are differences in culture, there could be differences in the diffusion of ICT, as is the case with regard to e-government. In recent years, the diffusion of e-government has attracted the focus of an immense number of IS researchers; thereby attracting much research to the area. Bearing this in mind, the next paragraph examines diffusion research.

1.1.9 Diffusion

The term diffusion was originally used in marketing in order to learn about product adoption; however, it is also used in the IS field to denote the introduction of technology in a given society. A diffusion cycle begins from the time a product reaches the market and extends to the saturation of market demand (Rogers, 62 - 83,). Due to technology marketing, the term was transformed into the diffusion of innovations (Rogers, 1971). "Diffusion is the process by which an innovation is communicated through certain channels over time amongst members of a society" (Rogers, 2003: 8). Four elements were identified as important for the diffusion of new technology: innovation, communication channels, time and the social system (ibid). These elements have diverse characteristics and this research will only utilise certain aspects in order to form an understanding.

Over the years the adoption of information system technology has been a major problem and priority for researchers (Venkatesh and Davis, 2000). Therefore, this research will aim to improve the understanding of adoption behaviour in order to improve the adoption of a system. It is known that low usage of installed systems is a major factor underlying the productivity paradox surrounding lacklustre returns from organisational investments in information technology (Venkatesh and Davis, 2000; Sichel, 1997). Therefore the diffusion of e-government goes beyond the successful implementation of e-government. Success should not only be examined as mere access, but should also comprise acceptance and usage.

1.1.10 Conclusion to section 1.1

Research involving the study of ethnic societies has shown that, in multiethnic societies, which are the hallmarks of most developing countries in Africa, culture has a profound impact upon peoples' lives (Kasekende et al., 2006). This poses a problem, as it is difficult to redirect people's attitudes and beliefs (Guglielmino et al., 1995). Furthermore, it has been established that peoples' culture is very strong in determining how they react to any changes in their region (Guglielmino et al., 1995). It is believed that, for any major shift to occur in the attitudes of people, an event will have to take its roots from social factors such as culture and gender (Stahl and Elbeltagi, 2004; Guglielmino et al., 1995).

It has been suggested that the e-government platform can be the same for all countries attempting to implement it; however, governance will vary according to the country (Oakley, 2002). The development of e-government is an attempt to modernise government for the benefit of the citizens. Hence, the focus should be more on attaining usage of the technology by citizens, rather than the technology that can be provided. Much of e-government research emphasises improvements to the administrative processes, the automation of certain services and a greater provision of information via websites rather than addressing the citizens needs (Oakley, 2002).

Further, empirical evidence suggests that simply providing access to e-government or ICT does not guarantee its usage; instead, the concerns and abilities of users should be addressed during the provision of such infrastructure (Brookes 2004). Research in Egypt found that participants rejected a technology, even though it was affordable and available (Stahl and Elbaltgi, 2004). The rejection of the system could be traced to the beliefs of the citizens, which is part of the culture that a society shares. From the above, it can also be generalised that an e-government problem would be better understood by examining and understanding the cultural and gender factors inherent in most developing countries.

Therefore, this research will examine the effect of culture and gender in e-government diffusion in a developing country. This will be achieved using Nigeria as a case study. The research will also examine the effect in the country taking into considering three indigenous cultures that also abide by the same government. Having introduced the main issues surrounding this research, this chapter will now introduce and discuss the area used as a case study for this thesis to improve the reader's understanding of the procedure and process of the research. Nigeria is used as a data collection location and a brief introduction is offered in the next section.

1.2 Brief background information about Nigeria

Nigeria is located in the west of the African continent and the area is sometimes called sub Saharan Africa. Nigeria is the largest country among the Sub Saharan countries of the region and is the most populated country in Africa (CIA: world fact book, 2010; ADB,2003; Kasekende, 2007); it is estimated to have a population of over 140 million people. (NPC: census result, 2006; NOHS, 2011). Nigeria is counted among the four countries with high investment potential within the African continent which also comprises of South African, Algeria, and Egypt know as SANE Economies (SANE) Foundation (Kasekende, 2007, 2009; Anyanwu et al, 2007). It is believed that the economies of these countries are the bed rock of any development in Africa and they are located within the four cardinal points of the continent (Ibid). SANE countries comprise: from the south of the continent, South Africa, in the north, Algeria, in the east, Egypt, and in the west, Nigeria (Kasekende, 2007). It is noted that any development within the countries named has the tendency to influence the development of other countries around them (Ibid). The above explanation shows that it is important to understand the cultural environment of such countries in order to improve the introduction of projects like e-government. Based on this search for understanding, the study of Nigerian cultural and gender influences in the diffusion of e-government is considered to be very important for understanding the adoption of such technology, considering the investment opportunities posed by such technology. Figure 1.1 below shows a map of the country.
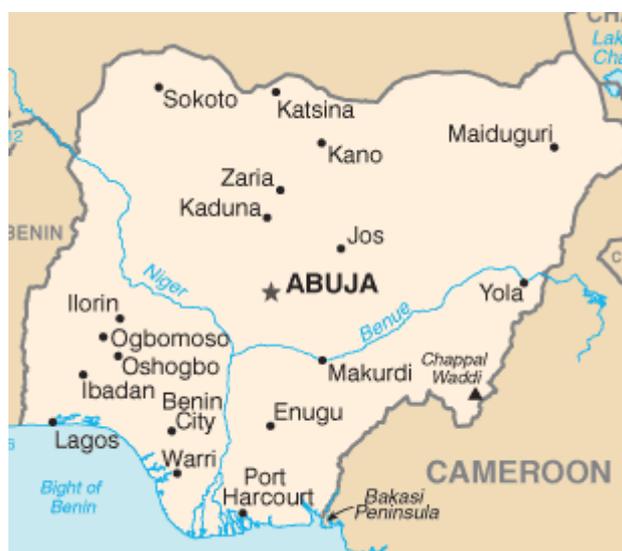
Figure 1.1: The map of Nigeria

Source: CIA world fact book 2011.

Nigeria was colonised by Britain and its official language is English. It has three major ethnic tribes which are regionally located in the country: Hausas in the north, Yorubas in the west and the Ibos in the east. The country has experienced tremendous economic and IS development in recent years and Nigerians are amongst the fastest growing ICT users in the world (Kasekende, 2009; CIA world fact book, 2010; ITU, 2010; Internetworldstats.com 2011). Although the country has a low ranking in terms of corruption from transparency

international (TICP, 2004), this could be linked to the protracted period of military rule in the country. According to Ifinedo (2005), citing Ifidon (1996), military coups are mainly motivated by greed and a desire to loot the national treasury and a trickledown effect often follows, considering that leaders are expected to be an example of how to behave (Hofstede et al., 2010). Table 1.1 shows the growth in Internet usage compared to the population of the country using three selected years.

Table 1.1: Internet usage and population growth

Year	Users	Population	% Pen.	Usage Source
2000	200,000	142,895,600	0.1 %	ITU
2006	5,000,000	159,404,137	3.1 %	ITU
2009	23,982,200	149,229,090	16.1 %	ITU

Source: www.internetworldstats.com

Democratic civilian government returned to the country in 1999 and embarked on a lot of reforms, which could be the link to the improved development being recorded within the country. These reforms include: banking reforms, privatisation of government agencies involved in the provision of social amenities, the deregulation of the oil sector. NOHS, 2011; Kasekende et al., 2009; CIA world fact book, 2010). Such reforms were also extended to the area of IS, due to the belief that it will help to introduce transparency to government transactions and discourage corruption; considerable efforts have been recorded in this section (Ajayi, 2003; Ifinedo, 2006) . The Nigerian government established a full ministry of science and technology in charge of the implementation of such programmes within Nigeria.

Considering all the development and efforts towards e-government development in Nigeria, e-government diffusion is still regarded as very low compared to other nations of the world and is even considered to be poor among other SANE economies of Africa (Anyanwu et al 2007; Heeks, 2002). In an attempt to examine this problem, the current research will examine the impact of culture and gender on the introduction of e-government within the country. The population of Nigeria is made up of about 250 indigenous tribes (CIA world fact book, 2010), but this research will concentrate on three major indigenous tribes due to their influence over other tribes. In recent times, there has been agitation by other smaller ethnic indigenous societies with the aim of being recognised, namely the Ijaw, Ogoni and Tiv (NPC, 2006). Further information on Nigeria and e-government development will be offered in Chapter 2 (Sections 2.3, 2.4 and 2.6). Having offered an insight into the subject of the case study, the research will proceed with an outline of the aims and objectives of the study.

Justification for the use of three indigenous tribe

Nigeria is made up of about 250 ethnic tribes (CIA factbook, 2010; Ifendo 2006) but the research considered only three of these indigenous ethnic societies namely Yoruba, Ibo and Hausa. The ethnic societies were mostly categorised along indigenous languages and locations within the country (CIA factbook, 2010). The three ethic societies were identified based on their population density within Nigeria and their dominance over the smaller ethnic societies within the country. A more research specific reason was that to acquire a reasonable and substantial study conclusion, large numbers of a sample population are required. This, it was felt would be possible only by including the larger, dominant societies considered within

this research area. A final consideration was the barrier of time. If further societies were included, then the time taken to complete this research would be longer and something not envisioned by this research.

1.3 Aims and objectives of this research

Bearing the aforementioned discussion in mind, the aims of this research are:

To investigate the relationship between culture and e-government awareness channels within subcultures of a developing country that strives to adopt e-government. This research will also aim to examine gender influence within the subcultures when considering e-government awareness channels in the same country.

To achieve the overall aims, the following research objectives outlined in Table 1 will be undertaken;

Table 1.2: Research objectives

Themes	Objectives
Review of literature	The objective of this research is to examine whether some previously identified social factors influence e-government awareness channels. This research will also critically examine the conditions under which these social factors influence the e-government awareness channel. In view of the area and samples of the study, the research will examine whether any of the social factors vary amongst the different indigenous groups under study. An added objective of this research is also to determine the current status of practice and how the existing theories will be applied to achieve the aim of this research. For that reason, the literature on the existing theories of all the principal issues involved in this research will be examined and critically analysed. Therefore, if no suitable framework is found, the available theories will be combined to try to provide a suitable framework for the accomplishment of the aims of the research.
Development of research propositions	The conducted literature review will provide a background to the development of propositions. The proposition will be used to investigate the influence of culture and gender on the aspect of e-government diffusion. It will also identify and develop a suitable research method to obtain these results. This research proceeds further and offers a research approach that will proffer a deeper meaning to the research aims.
Establishing the conceptual framework	The research propositions represent the gap between the existing framework and the research aims. In order to provide this bridge, some variables will be identified to form the variables of the framework that will achieve the aims of this research

Testing the conceptual framework	After establishing the initial theory of a conceptual framework, it is important to test it and identify the main weakness that may hinder the framework from achieving the aims of the research.
Establish areas for improvement	It will be necessary to evaluate the data and relate it to the proposition in order to determine the weaknesses and areas for improvement. This will help to strengthen the framework so that the aims of this research can be achieved. At this point, the objective of the research will be to ensure the framework is reusable for further IS research.

Having described the aims and objectives of this research, the section below describes the research scope and definitions.

1.4 Research scope and definitions

This research examines whether gender and culture are factors which should be taken into consideration when examining e-government diffusion in IS in a developing country; in this case, Nigeria. This will entail an in-depth evaluation of cultural and gender factors within selected Nigerian societies in order to determine if these social factors influence citizens' awareness and acceptance of e-government products and services.

Furthermore, this research critically considers the conditions under which these social factors are viewed to influence the awareness and acceptance of e-government products and services. In view of this, this study will examine whether the social factors vary or are homogenous amongst the various indigenous groups under scrutiny. This research examines three major different ethnic indigenous societies within Nigeria; namely, Hausa, Yoruba and Ibo. These groups were selected on the basis of accessibility, availability, population distribution and influence over other smaller ethnic groups within and around them.

However, due to the large scope covered by this study, it was imperative to streamline the areas of this research to make issues clearer for the reader. From the definition of e-government adopted in this chapter, the research focused upon the citizens to e-government (C to G) section of e-government. E-government diffusion was examined from a citizen centric view. Therefore, this research will treat e-government diffusion in terms of citizens' awareness and knowledge and behaviour towards its acceptance.

Another term often used in this research is culture. The scope of cultural research is in the area of *Cultural Values and information systems: (the people who carry with them a pattern of thinking, acting and feeling which is learned through the culture).* The cultural analysis does not delve into other aspects such as the culture in technology (the inherent culture on which the design of the technology is based), or become involved in the technology culture (the culture which develops as a result of the changes that come with an innovation) (Hasan and Dista, 1999). It will solely deal with the culture of the society in which the technology is being introduced.

Moreover, gender, a broad and varied topic is also considered by this research. Therefore, in order to examine gender this research examines diverse gender perspectives and combines

them. That is, only aspects of gender research suitable for achieving the aims of this research are employed. Hence, both the political and strategic needs of gender influence on the awareness and usage of e-government are applied.

Finally, this research employs Rogers' (2003) diffusion analysis to investigate the diffusion of e-government within the selected case studies. However, a diffusion element that is related to information exchange of e-government will also be studied. The research will investigate the impact of social factors identified as culture and gender on the diffusion element. Such study will be conducted at one point in time within the social system. The elements of diffusion covered in the investigation are the channels of communication and social systems.

1.5 Brief description of the research methodology

Since research focused upon culture and gender in IS e-government adoption is sparse, the approach used for this study is not a stipulated theory. This means that theory is the dictator of the procedure instead of serving as a guideline to a successful procedure. As Quinn (1988) finds, a research methodology must be regarded as a mere intellectual framework and should not be overused.

Due to the nature of the research, which is based on human subjects and the study of their characters which are known to be dynamic (D'Iribarne, 1997), an understanding of well detailed, precise and certain analysis of the social factors is necessary in order to illustrate the societal differences. Due to the above reasoning, a case study approach was viewed to be suitable. This research is characteristically subjective; further explanations for this approach are offered in Chapter three. However, for such research, a qualitative approach is beneficial (Yin, 2009).

There is only one context to be studied; in this case, Nigeria. For this, a case study approach was used. A case study is a research strategy which investigates an empirical topic by following a set of pre-specified procedures. This is normally used to explore a contemporary phenomenon within its real life context and, most often, when the boundaries between phenomenon and context are not clearly evident (Yin, 2009). Research also states that, in the tradition of inquiry, case studies are often used in social, urban and political scientific studies (Yin, 2003), which this research is considered to be; hence suggesting that a case study was best. The research procedure involves the analysis of the social behaviour of a group of people (the indigenous groups mentioned above) in their social context. In this instance, there were several sub case studies within a case study. Further explanations of this strategy are provided in Chapter three.

To gather the data, a multiple data collection strategy was used. This includes a pilot study to streamline the questions and procedures. The use of the pilot allowed the researcher to validate and verify the propositional constructs formed during the theoretical review of the research variables and to consider whether they were suitable to achieve the research aims. The data collection methods include: semi structured interviews, researcher's personal notes, and examination of archival documents. The multiple strategies lend the ability to deal with all the varieties of evidence, as this is a new environment for such enquiry and limited

research exists in this area. Furthermore, pursuing a multiple data collection technique improves the validity of the research (Yin, 2003, 2009).

For this research to be conducted, subject identification was also necessary. Subjects were selected from all three indigenous groups; a detailed explanation of the processes is provided in Chapter three. Selection of the subjects was performed using a self identification process. The researcher also considered the following factors: convenience, accessibility and geographical proximity. The pursued selection process and the choice and number of subjects are explained in detail in Chapters four and five.

This research also faced a number of challenges due to the emergence of subjective bias. Due to the multiple data collection methods, , the subjective bias was reduced. Data analysis was conducted using pattern matching, cross case analysis and explanation building. Further details of this analysis are provided in Chapters three, four and five.

1.6 Overview

In order to familiarise the reader with this thesis, the following outline is offered in Table 2 which explains the project description according to chapters. The study is composed of seven chapters and the contents of each chapter are detailed.

Table1.3 : Research outline

Chapters	Descriptions
Chapter One	*Introduction* This covers the introduction of the main issues on which the study rests and describes the aims and objectives of the research work. The chapter contains an introductory explanation of the approach that is applied in the research work and the objectives and aims of the thesis. The chapter also explains the reason for embarking on the research and its methodology.
Chapter Two	*Literature Review* This chapter provides the background, previous theory and analyses of the research issues. It provides the basis for this study and suitable arguments are used to investigate the research. This chapter also explains the keywords in this thesis and how they relate to the aims of this research.
Chapter Three	*Research Approach* Chapter 3 provides a description of the research approach, application and procedure; the reasoning behind the applied research procedure is also explained. Moreover, there is also a discussion of other research methods and their inherent problems.
Chapter Four	*Describes and Discusses the Pilot Case Study* This chapter provides the empirical resources for the pilot study that was used in this research. It also describes the results of the pilot study.

Chapter Five	*Describes and Discusses Case Study Research and Findings* This chapter describes and discusses the findings used in this research.
Chapter Six	*Research Validation and Discussion* Chapter six describes the variations that have occurred in the empirical evidence and the advantages of the observed evidence. The validation of the framework is also discussed, since it is considered to be important for future research directions in the understanding of the implications of culture and gender.
Chapter Seven	*Summary and Conclusions* This chapter describes the research conclusions. Additionally, the contributions, achievements of this research and limitations of this study are discussed. Also included are future directions for this research.

1.7 Summary

This chapter provided the reader with a brief description of the nature and stages that this research pursues and also offered an introduction to the issues covered by this study. The forthcoming chapter will present the reader with a detailed review of e-government diffusion and adoption studies and will give a detailed analysis of the dimensions of culture and gender perspectives used in this research.

<div align="center">**Chapter 2**</div>

 Literature Review

2.1 Introduction

This chapter reviews issues which focus upon the impact of culture and gender on e-government diffusion. In other words, it will examine the theoretical models of culture and gender and other theories related to e-government diffusion and adoption in order to help find an answer to the following research question: How does culture and gender influence e-government diffusion? It will also review existing literature relating to e-government diffusion, starting with its relationships with culture and gender as social factors

2.1.1 E-government and social factors

Social factors have been identified to be a complex moderating variable on usage intention (Venkatesh et al., 2003; Warkentin et al, 2002; Tedre et al, 2006; Kumar and Best, 2006; Gilber and Balestrini, 2004). It is believed that social impact appears to be important only in the early stages of individual experience with the technology; its role erodes over time and eventually becomes insignificant with sustained usage within mandatory settings and it has no significance when used in voluntary contexts (Venkatesh et al, 2003). Most of the research has been conducted in the area of adoption and usage; however, due to the relationships of the studies, the research involves adoption theories which can be related to this research. Nevertheless, some research still shows that social factors operate by influencing perceptions about technology within a voluntary setting (Venkatesh et al, 2003; Tedre et al, 2006; Kumar and Best, 2006; Gilber and Balestrini, 2004). It is well noted within IS that social variables influence perception, which in turn influences the adoption of information technology systems; thus, some studies have made recommendations for future research to include developing a deeper understanding of the dynamic influences of social factors on new technology like e-government (Kumar and Best, 2006; Gilber and Balestrini, 2004; Venkatesh et al, 2003).

Due to the benefits associated with the adoption and usage of e-government, it has become a priority IS project among governments of different countries (Ifinedo, 2005). As this research is focused upon developing countries, it was found that there are several problems associated with the diffusion of e-government products and services in developing countries (Heeks, 2002; Ebrahim and Irani, 2005; Rorissa and Demisse, 2009; Ifinedo, 2006). When considering adoption and acceptance, diffusion is an important issue to consider (Rogers, 2003; Ayo et al., 2008); within the context of developing countries, it has been found that IS diffusion is affected by factors such as infrastructure, literacy, income. (Chen Wee and Abu Bakar, 2006; Kumar et al, 2007; Gilbert and Balestrini, 2004; Ifinedo, 2006). Other factors to consider include citizens and culture. Culture is a term that some researchers also refer to as history and citizens are sometimes known as gender (Warkentin et al, 2002; Olatokun, 2009).

Despite the identification of the influence of social factors on IS projects in developing countries, few studies have been undertaken to determine the impact of these factors on e-government diffusion at a micro level (Ebrahim and Irani, 2005; Awoleye et al, 2008). One reason for this could be that most e-government research focuses upon the success and failure

of e-government in developing countries and less upon its adoption and usage in developing countries (Heeks 2002, 2003; Rorissa and Demissie, 2009). In recent times, interest has been drawn to the peculiar environmental nature of the developing countries as opposed to developed countries; hence, the clamour to modify most of the models based on the developing countries' environment (Ifinedo, 2006). According to Noorderhaven et al. (2010), most of the models existing today are based on the experience of developed society, so for any meaningful success to be recorded in the area of adoption such models will need to be modified to suit the developing countries' reality. However, the study by Noorderhaven et al. was in the area of information management, but e-government involves the management of government information. Therefore, the impact of social factors such as gender and culture are neglected since they are not strong determinants of developed countries' culture (Hofstede and Hofstede, 2005). Hofstede et al (2010) suggest that Western culture (the developed country context) is more individualistic; therefore, social factors such as culture and gender exert little or no influence upon the way people interact in the region.

When considering the acceptance of e-government, these social factors are considered to be critical (Tedre et al, 2006; Kumar and Best, 2006; Gilber and Balestrini, 2004; Awoleye et al, 2008). Research identifies social factors such as culture and gender to influence perceptions and behaviour in the use of technology, but they are particularly important when considering adoption behaviour and usage in a voluntary setting; specifically, in the case of first time users (Venkatesh and Davis, 2000; Ajzen, 1991; Venkatesh et al, 2003). When considering a theoretical aspect, the theory of adoption and usage of IT supports the view that perception influences acceptance and adoption (Venkatesh and Davis, 2000) and that human beings do not undertake actions without limitations being imposed upon them by society (Bagozzi et al, 1992). The implications of such views imply that perception could also be influenced by some elements of society. Therefore, the impact of culture and gender do constitute factors that could influence the citizens' perception towards the adoption of e-government products and services, which in turn could affect the diffusion of such technology (Rogers, 2003) within a developing country setting.

According to Heeks & Bailur (2007), the adoption of e-government is largely dependent on human agency shaped by social context. It is also held that IS plays a lesser role in shaping human intentions and choices and is itself shaped by human intentions and choices (Tedre et al., 2006). An example of the impact of technology being shaped according to society manifested itself first in the 1990s when the technologically superior operating system OS/2 Warp lost the market to Windows 95 for non-technological reasons (Tedre et al., 2006). Most Information System research contends that the social context must be understood broadly and that social context is not a set of static taxonomies, but is an ongoing, adaptive process (Heeks and Bailur, 2007; Tedre et al., 2006; Hasan and Dista, 1999). Therefore, if one technology is acceptable in the culture of one society, it might not be true of others (Rogers, 2003).

Furthermore, research emphasised the need to understand the local context of the citizens and incorporate it in the development of the e-government system (Heeks & Bailur, 2007; Hasan and Dista, 1999). The local context can be described as the cultural belief of the group of people, which influences their daily lives and their way of doing things within their

community. This belief could be a strong determinant in the attitude of the majority of the inhabitants of that locality and it is unique to them. According to Walsham and Sahay (2006) citing Bada (2000), globalization theorists who argue for cultural homogeneity should be criticised, because for IS to be adopted within a community it is necessary to understand the values of the community and their local meaningful way of doing things. Macome (2003), following a similar argument, suggests that local context was crucial in the implementation of an invoice information system in Mozambique Electricity Company, a view also expressed by Puri and Sahay (2003).

In conclusion, the significance of social factors on e-government diffusion in Nigeria and the West African region has been the focal point of most e-government research within the region (Ifinedo, 2005, 2006; Adeyemo, 2011; Rorissa and Demissie, 2009; Ayo et al., 2008; Dasguta and Gupta, 2010). Although few field studies have been conducted compared to macro and industrial research in the area (Awoleye et al., 2008; Olatokun, 2009), all emphasise the impact of culture and gender on the development of e-government within the region. Studies in other areas have noted the importance of the two factors on the development of the region, including other developing countries (Harrison and Huntington, 2001; Kasekende et al., 2006; Evans and Yen, 2005; Stedham and Yamamura, 2004; Hafkin and Taggart, 2001). The above school of thought has drawn attention to the need to approach any developmental activity in developing countries through an understanding of the impact of social factors. However, it is noted that although the impact of social factors can never be the same across society, they could have similarities in their influences (Noorderhaven et al., 2010). To understand the impact of social factors on every society, Hofstede and Hofstede propose that such a study must be based on measurable elements of the society (Hofstede et al., 2010) and the present research identified culture and gender as its main factors for measuring social impact.

2.2 Understanding culture and gender in e-government diffusion

Although some adoption theories consider the impact of social factors like culture and gender to grow less significant with time (Venkatesh et al., 2003; Davis, 1989), others recognise their importance in the study of technology adoption (Hasan and Dista, 1999; Morgan et al., 2004; Yeniyurt and Townsend, 2003; Kumar and Krishnan, 2002; Awoleye et al., 2009; Noorderhaven et al., 2010). The later findings supporting the importance of culture in the study of technology adoption were noted to be more important in the study of technology adoption among developing countries (Hakin, 2004). In the analysis, the research reiterates the sensitivity of culture and gender, stressing that Western developers of ICT based projects do not understand the cultural context for the use of this technology (Ibid).

Furthermore, research shows that development has not been equal among genders in the African region (Kasekende et al., 2006; Morgan et al., 2004). Hakin, (2004) blames the culture of developing countries for the preference of male gender over female gender, thereby giving the female gender an inferior status. In a practical sense, women have reduced access to IS facilities due to cultural barriers and it is shown that they have difficulty availing themselves of this potentially empowering technology (Best & Maier, 2007, citing Momo, 2000; Praser, 2003). Due to the impact of gender as a social factor in the development of information systems, most research has emphasised the need to make the implementation of

IS base projects gender sensitive to allow the participation of all genders in the usage of such projects (Raji et al., 2006; Dasguta and Gupta, 2010). From analysis, research shows that the culture of developing countries largely militates against a particular gender acquiring such skills, not to mention using them. For example the research conducted by Best and Maier (2007) in the Melur District in India on the SARI project shows that there are gender specific usage patterns, and identified some obstacles to female usage of an IS project meant to help the community. Most of the time women are at the receiving end and they constantly face barriers against the usage of IS technologies largely because the design of IS systems does not reflect the needs of the female gender (Mitter, 2004; Hafkin, 2000; Arun and Aruna, 2002; Archibald et al., 2005). According to Best & Maier (2007, citing Koffi, 2005) women hold the power to the success of any development in developing countries and any developmental project that is not gender sensitive is endangered. Research has shown the importance of gender sensitivity in the development of IS projects like e-government. One example is the case of research addressing the residential broadband market in South Korea by Choudrie & Lee et al. (2003), which found that the targeting of women boosted the adoption of broadband internet services in households in the country.

In continuation, access to e-government systems was equally identified as a major factor to be considered when seeking to improve diffusion and adoption of technology (Adeyemo, 2011; Ifinedo, 2005; Fanira and Olaniyan; 2009; Ayo et al., 2008), but research shows that it does not translate to e-government adoption and usage (Al-adawie et al., 2005). Al-adawie et al. (2005) discovered that access alone does not achieve the desired effect in the diffusion of e-government; in the study of IS on-line services, "access" constitutes about 81% of the factors affecting the use of ICT on-line services, but within the same studies it was discovered that, during the study of e-government online participation in Hungary and Poland, less than 1/3 of internet users visit e-government sites. These findings, even in transitional economies, show that this issue could be a major influence on the acceptance of e-government by citizens. To study the constituents of the society, the elements that make up the society will have to be examined to establish if there is any correlation. This research considers culture and gender to be vital factors in understanding any society. According to Barnard et al. (2003), the importance of the aforementioned reasons brought about the development of the "Government to citizen e-governance" project in South Africa by the Council for Scientific and Industrial Research, in conjunction with Fraunhofer-Gesellschaft of Germany, in order to fashion a platform for the accommodation of the local factors affecting the development of electronic service delivery.

Finally, human factors are known to be very vital to the eventual successful diffusion of e-government, especially in developing countries due to the complex nature of the societal structure (Ifinedo, 2006; Adeyemo, 2011; Olatokun, 2009;). . This view was also supported by Walsham and Sahay (2005, 1995), when they stated that the process of IT usage in developing countries is a complex phenomenon and recognised the need to increase locally based research for developing countries, where culture analysis will be the highest priority of research.

2.3 Understanding e-government diffusion and developing countries' realities

E-government is diffusing slowly within developing countries (Heeks, 2002; Rorissa and Demissie, 2009). Since e-government involves ensuring that citizens will use the technology that is being provided by the government, in this instance an innovation for the citizens and governments alike, the change could be difficult to achieve and the issue of diffusion becomes important (Rogers, 2003). The diffusion of information Systems (IS) is a global phenomenon, but despite the rapid rate of globalisation there are considerable differences between nations in terms of the adoption and usage of new technologies (Kovacic, 2005a). In any case, the success of e-government should also involve the delivery of the government's products and services, the citizen's acceptance of e-government products and services, and the citizen's usage of the e-government products and services at the citizen's convenience. If, in economics, "production of goods and services is not seen to be complete until it gets to the final consumer" (Smith, 2009), a comparison can be made to e-government which cannot be considered to be successful unless accepted and used by the citizens. Therefore, the success of e-government systems is contingent upon citizens' willingness to accept this innovation (Carter and Belanger, 2005).

Research has noted that e-government diffusion is slow within developing countries because of the strategy of implementation (Heeks, 2002; Akther, 2007). They attribute this to the adoption of the design concept of e-government, which is pre-western and neglects developing countries' realities. In any case, the diffusion of e-government among developing countries should be a confrontational reality within the developing regions of the world. Different technology comes with different problems and this normally varies as communities and environments vary. The introductory platform on which e-government is implemented could be the same, but the difference is more visible in terms of usage and acceptability. According to Evans and Yen (2005), some countries have used their technology and educational ability to create an e-government structure, while e-government development has been slow in other countries that have the same resources because the citizens do not trust the e-government structure. Although this could be a result of citizens' past experiences with the government, citizen's perceptions of e-government products and services were often equally noted to be a contributory factor (Ibid). The user's perception in information technology has in recent times been viewed as an element that forms the intention and usage behaviours of users faced with the adoption of technology innovation like e-government (Rogers, 2003). Acceptance of technology has generated concern in IS, which has in turn generated the development and extension of theories to explain diffusion and adoption. Having discussed the relationships of culture and gender in e-government, this research will proceed to analyse and explain the dimensions of this study with regard to diffusion in the next section.

2.4 Understanding the diffusion of innovation as it relates to the research

Having explained diffusion in the previous chapter, the study of innovation diffusion is the study of how, why, and at what rate new innovation e.g. technology spreads through culture (Rogers, 1962). This is applied to examine factors that are thought to be determinant to the adoption and usage of the information system, although some other researchers have included it to examine a lower level of individual and innovation characteristics (Brancheau and

Wetherbe, 1990). Rogers (1995, 2003) formalises this theory by stating that adopters of a new innovation can be categorised into innovators, early adopters, early majority adopters, late majority adopters and laggards, and he opines that each adopter's willingness and ability to adopt an innovation would depend on their awareness, interest, evaluation, trial, and adoption. According to Rogers (2003), the different groups possess different characteristics and communication patterns; he notes that communication is more likely to take place between the members of the same categories of adopters. If communication characteristics vary among different groups of adopters, the level of awareness among the adopter groups will therefore also vary. This means that e-government awareness among the categories of adopters within Nigeria will also vary, as found by Adeyemo (2011).

Furthermore, as stated earlier, research shows that awareness influences perception, which in turn influences behavioural intention to adopt innovation. Relating this to e-government shows that e-government awareness will influence citizens' perception of e-government products and services, thereby influencing behavioural intention to adopt e-government. Since awareness was identified as a strong element of adoption (Rogers, 2003; Davis, 1989; Ajzen, 1991; Bagozzi et al., 1992; Dutta-Bergman, 2002; Dimitrova and Chen, 2006), the research examines the effect of gender and culture on e-government awareness among the adopters, although adopters will be called citizens, as the study addresses e-government. The research discovered that it will be impossible to determine the categories of adopters among citizens of Nigeria due to time constraints within this research, so a different approach was used to accommodate all the adopters' categories. This was necessary to ensure that no single adopter category dominated the research. In order to accommodate different adopters, the research categorised the citizens based on awareness level: category 1 are those who are aware of e-government products and services and have used them, category 2 are those who are aware of e-government, but have not used it and category 3 are those who have not heard about it nor used it. The categorisation of the citizens will cover all the groups of adopters as stated by Rogers (2003), which makes the research unique from most research in this field within the region. It is noted that most research on e-government diffusion focuses on early adopters, ignoring the rest of the categories of adopters (Heeks, 2002; Stal and Elbeltagi, 2004).

Secondly, Rogers (2003) states that for diffusion of innovation to take place it must be delivered through a channel of communication across a social system over a period of time. In diffusion theory, Rogers (2003) states that categories of different adopters have different characteristics and communication easily occurs mostly within each category. Some research has also motioned demographical elements as reasons for such occurrence (Rogers, 1995-2003; Dimitrova and Chen, 2006; Olatokun, 2009).   Although demographical elements like age, income and literacy level were mentioned as factors for such occurrences, psychological factors such as beliefs and personality were later suggested (Rogers, 2003).   The latter elements have been shown to influence media choices and adoption decisions (e.g., Dutta-Bergman, 2002; Dimitrova and Chen, 2006).   Research looking at the channels of communication through which the e-government as a new innovation is being delivered to the citizens of developing countries like Nigeria barely exists. Few studies have examined this important element of the innovation process (Dimitrova and Chen, 2006; Roger, 2003). The research identifies media, inter-personal interactions and Internet communication systems as channels of communication for innovation awareness. The current research

examines the effect of culture and gender on the channels of communication of e-government, the means through which these new innovations are transferred among the categories of adopter of the new technology. From the definition of innovation it is perceived that e-government will be regarded as a new innovation, based on the fact that it is still new to the citizens of Nigeria. Therefore, e-government communication channels are regarded as the media through which e-government products and services are transmitted to the citizens of Nigeria. If the information transmitted through this medium influences perception, which in turn impacts on behavioural intention to adopt innovation, an understanding of the theories of adoption which form that extended model of this research is therefore imperative.

2.5 Understanding adoption theories as they relate to the research

However, Rogers' theory that adopters' willingness and ability to adopt an innovation depends on their awareness, interest, evaluation, trial, and adoption argument was seriously questioned. Davis states that perceived usefulness and perceived ease of use will affect people's adoptability options (Davis, 1989) and alter the flow of Rogers' theory. The Theory of Acceptance Model (TAM) (Davis, 1989) theorises that an individual's behavioural intention to use a system is determined by two beliefs: perceived usefulness, defined as the extent to which a person believes that using a system will enhance his or her job performance, and perceived ease of use, defined as the extent to which a person believes that using the system will be free of effort. It also states that, according to Venkatesh and Davis (2000), the effect of external variables like system characteristics, development process and training on intention to use are mediated by perceived usefulness and perceived ease of use. TAM substantiates this by stating that perceived usefulness is also influenced by perceived ease of use because it is only when a system is easier to use that it is more useful (Venkatesh and Davis, 2000). However, Bagozzi et al. (1992) state that human beings don't act without limitations, so there are constraints to the theory, since that in the real world there will be many constraints such as limited ability, time constraints, environmental or organisational limits, or unconscious habits which will limit the freedom to act.

In the course of research to include additional determinants of perceived usefulness and usage intention and to show how the effects of these determinants change with increasing user experience over time with the target system, most of the theories were advanced and extended to accommodate social norms (TAM 2) (Venkatesh and Davis, 2000) and decomposed (DTPB by Taylor and Todd, 1995). All these theories are based on behavioural characteristics. Although they believe that the effect of the social norms on users' intentions is still minimal, they still acknowledge the fact that more critical research needs to be done to determine the depth of social norms in terms of users' intentions and usage behaviour.

The study of user intention and behaviour towards a new innovation like e-government has generated a lot of interest that has informed the development of different theoretical models with different sets of user acceptance determinants. This diversity has equally formed the reason behind the unification of these constructs to deliver a more accurate and acceptable model among information systems researchers. In the unification model, the eight most popular models are evaluated, which include: the Theory of Reasoned Action, The Technology Acceptance Model, The Motivational Model, The Theory of Planned Behaviour, A Model Combining The Technology Acceptance Model and The Theory of Planned

Behaviour, The Model of PC Utilization, The Innovation Diffusion Theory, and The Social Cognitive Theory (Venkatesh et al., 2003). They form the Unified Theory of Acceptance and Use of Technology (UTAUT). Most information systems research has used this theory in the evaluation of technology diffusion and the testing of the determinant constructs, but not much effort has been applied to such theories in terms of e-government adoption in developing countries (Dasguta and Gupta, 2010) like Nigeria. The next section reviews the attempts to study e-government adoption using these theories, as it relates to academic research.

Although different innovation acceptance models are being developed, the Technology Acceptance Model (TAM) is among the most studied and several studies still explore this paradigm (Venkatesh and Davis, 2000; Venkatesh et al., 2003; Carter and Weerakkody, 2008; Dimitrova and Chen, 2006). TAM, which is based on the theory of reasoned action, has two major construct: (a) perceived usefulness, and (b) perceived ease of use. They are considered to be very important constructs in users' adoption of a new innovation (Davis and Venkatesh, 2000; Carter and Weerakkody, 2008; Warkentin et al., 2002). Davis and Venkatesh (2000) state that the higher the perceived usefulness and the perceived ease of use of a new technology, the more likely it is to be adopted, assuming that every other factor is constant. To provide clarity to the reader The Technology Acceptance Model is shown in Figure 2.1 below.
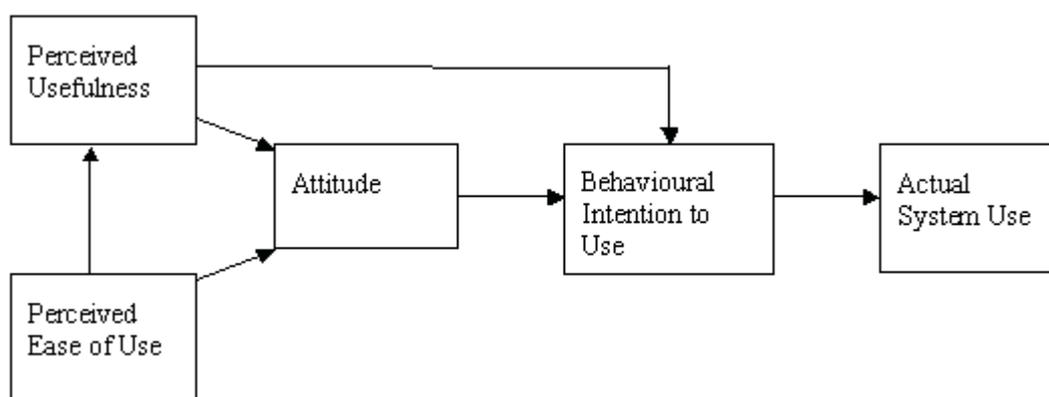
Figure 2.1: The Technology Acceptance Model

Source: Davis 1989.

However, Davis (1989) predicts that perceived ease of use influences perceived usefulness and that it is only when a system is easy to use that its usefulness will be enhanced. Nevertheless, some studies have refuted this argument and show that the greater percentage of the variance in user intention is shown to be perceived usefulness of a technology (Benbasat and Barki, 2007). Venkatesh et al. (2003) state that the perceived ease of use will erode over time among users and that it is only important to diffusion during the period of first contact. Since the user will have access to the medium of the e-government product and services delivery system before determining if a system is easy to use, the perceived ease of use is associated with usage behaviour and does not impact on opinion or intention of the user being studied in this research. The perceived ease of use of e-government technology involves the first user contact with e-government technology. It should be noted that the research involves the awareness aspect of diffusion, which does not encompass usage

behaviour, but focuses on intention or formation of opinion to adopt e-government. Hence, the perceived ease of use of e-government was not considered to be a model construct of this research; rather, perceived usefulness is adopted from the TAM model.

Perceived usefulness as a TAM construct was applied to the research to form a conceptual framework to study the citizens' intention to adopt e-government products and services. More importantly, the usefulness of e-government products and services can be spread as information without practical experience of the system. Studies suggest that more research on the sole construct of perceived usefulness to improve intention to adopt a new technology like e-government is needed in IS diffusion (Benbasat and Barki, 2007). The perceived usefulness is considered from TAM, although it could be called different names in other models like performance expectancy in the Unified Theory of Acceptance and Use of Technology (UTAUT), or relative advantage in other models used to study broadband diffusion in households.

2.6 Attempts to develop e-government adoption theories

Research on citizens' adoption of e-government products and services is sparse within academic studies. A review of the literature revealed very few: the work of Warkentin et al. (2002); Gilbert and Belestrini (2004) and Kumar et al. (2007). These studies were based on the need to establish understanding of the behavioural attitude of citizens when adopting and using e-government.

According to Warkentin et al. (2002), the adoption of e-government should be encouraged by building trust in government activities. He developed a framework based on some predictive variables: intuition based trust, perceived risk, perceived behavioural control, perceived usefulness and perceived ease of use. This framework was proposed based on a study of online tax services in a country to improve the adoption of e-government services. The study combines variables from adoption theories in the IS arena such as TPB and TAM and includes two cultural dimensions as other moderating variables. It is one of the few academic studies that have evaluated some cultural dimensions in the study of e-government adoption by citizens. Most research on culture has been in other areas of other information systems. This model was criticised for its independent single variable of intention to engage, which does not capture the full adoption process (Kumar et al., 2007). However, it concentrates on early adopters whom are most often literate citizens of society, a characteristic described by Rogers (2003) for such categories.

Then, the model by Gilbert and Balestrini (2004) applied perceived barriers and perceived benefits as independent variables that determine the willingness to use e-government; age was used as the moderating variable. The framework combines the attitude based approach and service based approach in its evaluation. This model was also criticised for focusing on enticing first users and did not have measures of frequency (Kumar et al., 2007). This model will only involve users at first contact and does not include or cover categories of users described in this research.

Furthermore, the study by Kumar et al. (2007) proposed that the dependent variables of user characteristic and website design will influence e-government adoption directly, while the

third construct which is service quality will influence satisfaction which will have an effect on citizens' adoption of e-government products and services. The conceptual model is dependent on the ability of the e-government producer to provide quality and useful information. This does not take into account the user's personality or the environmental influence of the user of e-government products and services. Also, just like the others, it deals with citizens with the means to access the e-government technology. Such characteristics were identified by Rogers to be those of early adopters.

In all the cases, these frameworks were developed to serve a section of society when considering e-government diffusion. The frameworks were all developed with the assumptions that the citizen must be aware of the existence of e-government and must have come into contact with the technology itself. They did not take into consideration the level of awareness and level of ignorance that could exist within every society, especially with regard to developing nations (Ifinedo, 2006; Ayo et al., 2008; Olatokun, 2009). The frameworks will only accommodate those who have been exposed to the Internet and, more specifically, are aware of e-government products and services. Having examined a few of the existing academic conceptual frameworks that have been developed to study citizens' adoption of e-government within the IS field and found them not to be suitable for this study, the current research will attempt to offer an e-government conceptual framework that will be comprehensibly used to study the impact of culture and gender on e-government products and services diffusion. This framework will involve all categories of adopters, using a combination of aspects of Diffusion theory and TAM.

2.7 Research conceptual framework

When selecting an appropriate model for research, two main criteria are proposed. Firstly, a model that provides valid predictions while using the fewest predictors is preferable. Secondly, a model should provide reasonable predictive ability and should also contribute to providing an understanding of the phenomenon under investigation (Taylor and Todd, 1995). In both cases, the study of e-government requires both predictive ability and a contribution to understanding while using the fewest possible predictors. These criteria were adopted when developing the conceptual model. At a conceptual level, the constructs from diffusion theory and TAM models were included, which may in the future provide insights into an understanding of a stage of diffusion. However, the adopted diffusion and TAM constructs were renamed to suit the study's terminology. The culture and gender variables are expected to determine and explain predictor variables adopted from the theory of diffusion and TAM, in turn, is expected to explain, determine and predict citizens' acceptance of e-government products and services (Rogers, 2003; Davis, 1989; Venkatesh and Davis, 2000).

Reflecting on the above discussions, it can be determined that the perceived usefulness of e-government (PUE) and the e-government awareness channels (EAC) will influence the user's perception with regard to the adoption of e-government. Dimitrova and Chen (2006) conclude that the fact that the decision to adopt a new technology service like e-government is based on a subjective perception on the part of the citizens regarding such variables as belief, social influences and personality traits is important to the two variables. These variables could be built up as a result of the subjective characteristics of culture and gender. These characteristics are developed as a result of social environment and citizens'

interactions. The research considers that, in order to understand the factors that influence the perception of citizens, the citizens' culture must be examined to determine how an individual opinion is formed and the effect culture and gender might have on the build up of such opinions. Since citizens' interaction involves communication, the innovations are usually communicated to users through various means. The Internet has being described as the principal medium of e-government delivery (McKnight et al., 2002). The early adopters possess the characteristics to access such a medium of e-government product and services delivery system more than other categories of adopters (Rogers, 2003; Dutta-Bergman, 2002). Within Africa, the category of early adopters is considered to be small in the regions especially Nigeria, due to the fact that over 60% of its population live below the poverty level and more than 40% of the population are illiterate (NPC, 2006; CIA world fact book, 2010). The report also shows that over 70% of the population live in rural areas where access to facilities such as the Internet is not possible. Rogers (2003) identified citizens with such characteristics to belong to the categories of late adopters and laggards. Hence, the number of adopters with the capacity to access and use e-government will be minimal due to the above facts. Adeyemo (2011), citing Dada (2007), said that the adopters with access to Internet facilities are generally located in urban centres where the minority of the population lives. If the diffusion rate of e-government is considered to be very low (Heeks, 2002; Heeks and Bailur, 2006; Evans and Yen, 2005; Rorissa and Demissie, 2009), therefore the medium of communication within other categories of adopters with less potential to access new technology such as e-government becomes the most important tool to influence the perception of the new technology. The research explores the effect culture and gender will exert on such media of communication through which an individual exchanges information about new innovations. It will be difficult for the researcher to observe each subject on a one to one basis over a period of time, to determine how perceptions are formed about new innovations like e-government. Although this could be considered to be a limitation to the research, a combination of different categories of adopters will provide the balance necessary to make conclusions on this research. However, it could be said that the ultimate outcome of PUE and EAC activities is e-government diffusion. Reflecting on the above discussions, a research framework for the examination of the factors under consideration, as it relates to the research questions of this study, is formed (Figure 2.1).
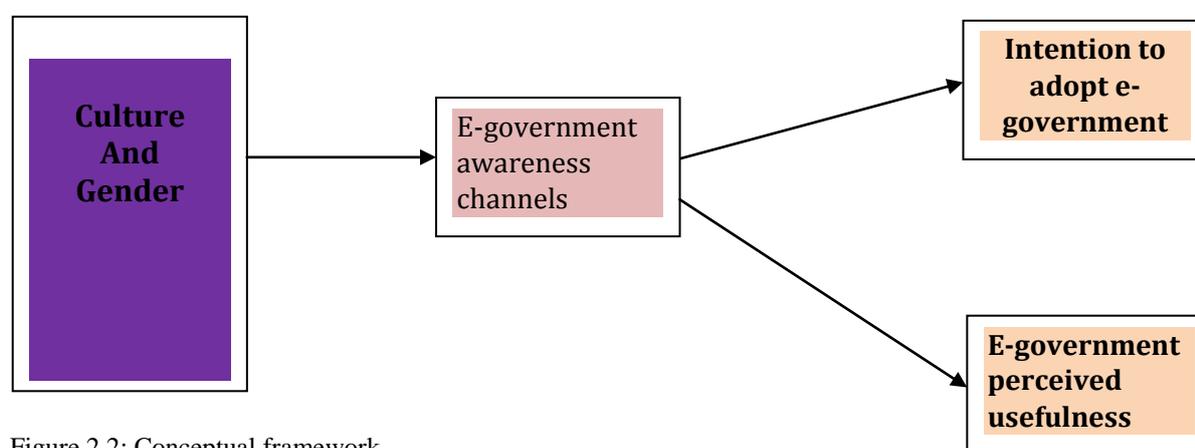
Figure 2.2: Conceptual framework

The constructs included in this study were adapted from the diffusion of innovations, channels of communication (Rogers, 2003), behavioural intention and perceived usefulness (TAM) (Davis, 1989).The proposed model assumes that the 'behavioural intention' towards e-government diffusion is influenced by culture and gender through e-government awareness channels and by extension influences e-government perceived usefulness. Although a detailed discussion of each construct is not possible within the scope of this chapter, a brief discussion of the constructs included in the conceptual framework was discussed below and the relationship between them was also discussed (section 2.7.1). Straub et al. (2004) suggest that if constructs are adopted from an existing framework, then there is less need to validate them; however, if changes are to be made in the framework, then the adopted measures should be subjected to the research validation process (Straub et al., 2004). Following the above reasoning, the constructs were subjected to the research validation process.

Most importantly the framework will be used to study the research questions which address how culture and gender impacts e-government diffusion by studying culture and gender influences on channels of communication. Using the above conceptual framework, the research examined the constructs used within the framework to provide the theoretical preposition used to validate the framework. Also, provided below is an explanation of the way that Figure 2.2 functions.

It was noted that culture and gender have an impact on the preformed attitude of the people from a region that has no online facilities. These extend the way the citizen's view and perceive e-government products and services. However to understand the problem the research looked at how the citizens of three regions in Nigeria receive information about e-government products and services and how this information has influenced the way they reason and feel, to the way they form opinions and make judgments about e-government products and services.

Culture and Gender were considered as the main determinants of a preformed attitude and applied in the formation of conceptual framework as independent variables. These in turn determine a means of information exchange, which in turn determine perceived usefulness and intention to adopt e-government products and services. This research conceptualised cultural influences on the diffusion of e-government products and services using only the four dimensions of Hofstede and Hofstede (2005): Power distance, Collectivism, Uncertainty Avoidance and Term Orientation. Although some other models could be applied, the four dimensions listed above were considered imperative for understanding the culture of the selected country. Further explanations were provided in section 2.9 page 33.

Consequently gender was considered as another independent variable used in this research that influences the diffusion of e-government products and services. Having provided the definition of gender this research will examine gender not from the perspectives of difference between women and men but from the perspective of individuals and environmental factors that provide understanding for participation. This research reviews different perspectives of gender and considered the attributes of the gender perspectives that relate to the environmental and individual influences on the diffusion of e-government products and services. In that regard, the Morgan et al. (2004) presented a model of the Association for Progressive Communications' (APC) Gender Evaluation Methodology (GEM) model to provide a framework for the study of gender and ICT, which addresses all the above

perspectives and suggests ways in which this methodology can be operationalized; hence, adopted in this study. We are aware that some other attributes could be added to further advance prediction of the intention and perceived usefulness of e-government products and services; but they would not allowed an understanding at this stage of the research that this framework allowed . Further explanations are offered in section 2.8 page 28.

2.7.1 Diffusion of e-government as it relates to the conceptual framework

Diffusion of innovation is the process by which an innovation is communicated through certain channels over time among the members of a social system (Rogers 2003). The innovation mentioned in the definition signifies that the idea is new to the members of the social systems within which the information is spreading. E-government is still regarded as a new innovation across the globe, not to mention within the countries of the developing world. This new innovation carries with it some level of uncertainty (Roger, 2003).

According to Rogers (2003), the diffusion is made up of four main elements identified as: innovation, communication channels, time and social system. It is stated that, in order for innovation to take place, there must be a channel of communication to spread information and it must be within a time frame in a particular environment. If the rate of diffusion improves adoption, as Roger (2003) claims, then for e-government to diffuse as a new innovation it must be through channels of communication and within a range of time within a particular environment. The view of newness determines the reaction of an individual towards it. In the study of diffusion, it may not be important to determine how long the e-government services or products have existed, but the process it will take to develop a favourable or unfavourable attitude towards it, either to adopt or not to adopt (Rogers, 2003). The time lag during which this decision is made is known as the *innovation decision process*. According to Rogers (2003), the time and process must have involved knowledge, persuasion or a decision to adopt. The innovation decision process was defined to mean the process of seeking information and the information processing activity during which an individual is motivated to reduce uncertainty about the advantages and disadvantages of the innovation. So the time and the process it takes a citizen to form the opinion to adopt or not to adopt e-government products and services could be called the *e-government decision process* for the purposes of this research.

Although the adoption of e-government as new innovation takes a process of decision making, some attributes are identified as being important to e-government diffusion according to a diffusion of innovation study (Rogers, 2003). These include relative advantage, which is a measure of the perceived advantage to an individual of adopting e-government products and services. Compatibility is the measure of an individual's perception of the value of e-government products and services being consistent with existing value. Then complexity is the individual's perception of the technology being difficult to understand and use. Furthermore, the trialability is the degree to which a citizen can try to use e-government on a part time basis without cost or barriers. Finally, observability is the measure of the visibility of the result achievable from the adoption of the e-government products and services. According to Rogers (2003), past research has indicated that an innovation that is perceived by an individual as being relatively advantageous, compatible, trialable, observable and with a low level of complexity will be adopted more frequently. This area is noted as

being the most researched of the Rogers' theory (Venkatesh & Davis, 2000; Venkatesh et al., 2003; Carter and Weerakkody, 2008; Dimitrova and Chen, 2006). Perceived usefulness, as discussed above, is the product of the huge research in this area and has been adopted as a variable for consideration in the research. Thus, this research will not be concerned with these elements due to the fact that they only concern individuals who are already aware of the e-government products and services or may include only literate individuals.

The second element, communication channels, simply means the processes by which a message is sent from one individual to another. Diffusion is a particular type of communication in which message exchange concerns new ideas (Rogers, 2003), but in this case refers to e-government. E-government communication channels will be examined as the means by which individuals exchange messages about e-government products and services between one another. According to Rogers (2003), the nature of the information exchange relationship between each individual determines the conditions under which an individual exchanges or does not exchange information and also the effect of such a transfer. Thus, the nature of the exchange of information about e-government products and services will be between individuals that have knowledge or have experience of using e-government and individuals that do not have knowledge or have any experience with e-government products and services. These types of communication are normally processed through mass media channels, interpersonal channels and, lately, interactive communication channels as identified by Rogers (2003). These communication channels are described in the following section.

Mass media communications are the system of disseminating information through a medium like television, radio, newspapers. These forms of communication are normally general and do not consider individual personalities. They are more favourable to literate individuals and elites of a society (Rogers, 2003; Bagozzi et al., 1992; Dutta-Bergman, 2002). Next are interpersonal channels of communication. They involve face to face knowledge exchange between individuals of a community. According to Rogers (2003), it is the most effective and persuasive form of technology knowledge transfer. The knowledge transfer is achieved through peer groups, leaders, family. This is more favourable to lower classes of a society. Finally, interactive communication is the type of information transfer based on the Internet. Although the Internet, according to Rogers (2003), has become more important for the diffusion of most innovation in recent times, the percentage of individuals involved in its usage, especially in Nigeria, is still minimal (UNDP-APDIP, 2003; Rorissa and Demissie, 2009). This form of information transfer applies more to the upper classes of society, since they must usually be educated and rich to be able to afford the Internet services.

In continuation, channels of communication could be said to be the means of bringing awareness of e-government products and services to the citizens of the adopting country. Thus, the content of the awareness message will be a determinant of the perception of an individual who may not have used or heard about e-government products and services before. According to Rogers (2003) and Kumar and Best (2006), research shows that most individuals evaluate innovation not on the basis of scientific findings, but on the experience of those who have used it; this attribute is mainly associated with first time adopters. For the purpose of this research, the means of spreading e-government products and services information will be known and called **e-government awareness channels**. Therefore,

according to the above explanation, e-government awareness channels will impact on citizen's intention to adopt e-government products and services; the research thus proposes that:

Proposition 1: *E-government awareness channels will influence intention to adopt e-government.*

Time is the third element of the diffusion of innovation and is also the most complicated (Rogers, 2003). This study will not attempt to investigate how culture and gender affect all the attributes of the elements of diffusion'time'. This research will only discuss the innovation decision process, which is the process through which an individual passes from first knowledge of an innovation, to the formation of an attitude towards the innovation, to a decision to adopt or reject, to implementation and the use of the new idea, and to confirmation of this decision (Rogers, 2003). This research also states that diffusion time operates in three forms; the first is the innovation decision process, as mentioned earlier. The second form of time attribute is the innovativeness and adopter categories. This is the degree to which different members of the indigenous society adopt e-government products and services. It normally represents the society's social stratification (Rogers, 2003). This rate normally varies. Rogers (2003) categorises the groups, as discussed in the introductory chapter. The third time attribute is rate of diffusion, which is the length of time required for a certain percentage of members of a society to adopt e-government products and services (Rogers, 2003). Rogers (2003) criticises the exclusion of time in most behavioural research and states that it is the strength of diffusion of innovation. The current research does acknowledge the fact that the measurement of diffusion time by means of adopter recall can be messy. However, the evaluation of the time attribute is a topic of research on its own due to its scope and is not considered in this research due to the time period within which the research is expected to be completed.

The last element of diffusion, which is listed as social system, is defined as a set of interrelated units that are engaged in joint problem solving to accomplish a common goal. These units could be individuals, informal groups, or religious organisations. (Rogers, 2003). The social system was also interpreted as constituting a boundary where diffusion occurs. In this case, it forms the boundary of where e-government products and services are used. In this research, the social system will be treated as the indigenous society in which the diffusion of e-government products and services takes place. The social system will be the three indigenous societies that form the sub-case studies of this research. The social structures of the system will determine the effect of gender and culture on the system. Rogers (2003) defines social structures as the patterned arrangement of units within a system. To determine the impact of culture and gender on e-government diffusion within the indentified social structures known as Yoruba, Ibo and Hausa indigenous societies, such factors will be studied based on the above conceptual framework.

2.7.2 Perceived usefulness as it relates to the conceptual framework

Many adoption theories emphasise perceived usefulness as the most important tool for acceptance and adoption (Taylor and Todd, 1995; Davis, 1989; Venkatesh and Davis, 2000; Venkatesh et al., 2003; Oh et al., 2003). According to Kumar and Best (2006), in their study

of an e-government project provided to Tamil Nadu, India, they identified a positive correlation for two services: obtaining a birth certificate for children and applications for old age pensions. They discovered that both government services are important to the rural people in that locality and, thus, the services are of economic and social value to the citizens; hence, their patronage.

However, the usefulness of e-government products and services might have a relationship with the way e-government products and services are viewed by the citizens. According to Gong et al. (2006), studies have shown that different cultures react differently to new products and technological innovations, no matter the theory of innovation (Yeniyurt and Townsend, 2003; Kumar and Krishnan, 2002). What determines perceived usefulness to a user is the social constituent of the user which forms his or her culture. Roger (2003) states that technology that is not advantageous from the viewpoint of the users is not easily accepted into usage, not matter how great the objective might be. Thus, the knowledge of e-government products and services which is part of the diffusion strategy shapes the citizens' perceptions of e-government products and services. The adoptability and usability can only enhance all other advantages e-government products and services. If the information being spread through e-government awareness is viewed by citizens as being useful to them, then citizens will perceive e-government products and services to be useful; hence, it will improve adoption. The research therefore proposes that:

Proposition 2: *E-government awareness channels will influence perceived usefulness*

Having described the constructs of the conceptual framework, the research will examine both the theoretical analysis of gender and culture and scrutinise the factors involved in the application of the conceptual framework.

2.8 Theoretical foundations of gender perspectives analysis as it relates to the research

Gender has been defined in Chapter one (section 1.1.5) and its relationship to e-government diffusion has been outlined. Due to the nature of the research, a considerable examination of gender studies has been conducted in order to determine if there is any influence imposed by gender elements in terms of channels of communication and perceived usefulness of e-government products and services. To study gender, the research examines gender perspectives used to study gender in IS, and then adopts suitable perspectives to study its relationship within the diffusion of e-government.

2.8.1 Gender research in IS

The study of gender in IS research has been scarce when examining the characteristics of gender in the use of e-government (Trauth, 2006 cited Adam, 2002). This is no exception when investigating these issues in developing countries like Nigeria. However, some research suggests that examining gender not from the differences between men and women but from the perspectives of individuals and environmental factors provide an understanding for the women under participation (Trauth, 2006; Wilson, 2004, Quesenberry and Yeo, 2006; Morgan et al, 2004a; Khazanchi, 1995). The underpinning point is that gender regard is noted to be determined by the culture of a particular society; therefore, what is considered feminine

in one society might be considered masculine by another society (Trauth, 2006; Wilson, 2004).

In as much as some gender research recognised the study of gender in a wider society (Trauth and Quesenberry 2007; Trauth 2006) most of the data collected for gender studies has been from the organisational rather than gender society perspective when considering gender as socially defined (Trauth, 2002; Slyke et al, 2002; Cockburn, 1988; Venkatesh and Morris, 2000; Adam et al, 2001; Webb and Young, 2005, Ahuja and Thatcher, 2005; Trauth et al, 2008). For instance Ahuja (2002) examined gender in schools and in this case gender is taken as uniform and static as is dictated by the culture of the organisation (school). In the instance of this research gender is an individual perspective that is influenced by the external environment and society.

Further the majority of research involving gender and diffusion or adoption in IS has examined gender as a moderator to adoption or diffusion. This means that gender is viewed as the impact of sexual differences on diffusion or the adoption of IS technology (Venkatesh et al, 2003; Morris et al, 2005; Baroudi and Igbaria, 1994). This research therefore considers different aspects of gender within the wider society as it involves the diffusion of e-government products and service. In other words, offering relationships of the aspects of gender to e-government products and services diffusion by considering gender behaviour according to societal regard. This will contribute to the general knowledge of understanding more about the impact of gender in IS research. It will also provide both government policy makers and researchers a valuable understanding regarding the differences and similarities in the reactions of individuals of both genders in a multi-ethnic society when faced with e-government products and services.

Gender analysis in e-government has received little or no attention amongst e-government researchers in Nigeria with the exception of a few studies (Olatokun, 2009; Awoleye et al., 2008; Dasguta and Gupta, 2010). Even within the identified research, gender was used as a demographic factor at a macro level. However, considerable work has been done in the development of a theoretical framework for the study of gender in IS and other related areas (Henwood, 1993; Cockburn, 1985; Rowbotham, 1995; Harding and O'Barr, 1987; Morgan et al., 2004). According to Morgan et al. (2004) and Harding and O'Barr (1987), most studies involving gender normally address a particular unit of people with a particular interest. However, the fact still remains that gender influence on e-government cuts across all perspectives of gender and the need to incorporate a framework that will comprehensibly study gender is still paramount to the development and diffusion of e-government. For the purpose of clarity a brief insight is offered below on different gender perspective.

2.8.2 Gender perspective

For instance, Henwood (1993) found that there is an interrelation between technology and gender in society by identifying that there is a role for women in technology and technology should be treated as culture. In the work of Henwood (1993), Women in Technology, the research reviews women's participation in ICT, thereby approaching the gender study in terms of participation. According to Morgan et al. (2004), the work later increased its scope of coverage by treating technology as a culture and implying that women should be producers

of technology to increase participation, not just users. The perspective was criticised by Rowbotham (1995) as being too restrictive, since it focused on women's participation alone and excluded society factors. This makes the scope of the study narrow for the current research because the study involves gender in a wider society.

Cockburn (1985) found that there are challenges, as gender and technology are socially defined. Rowbotham (1995) reveals that technology is an experience of daily life. When considering gender on its own, the position adopted in this study is that of Gillard et al. (2008), which *"recognizes that women and men are positioned differently in society and that not all women or all men share the same experiences. It recognizes that the development process has affected women and men differently, with women being increasingly marginalize."* (Gillard et al., 2008: 264, 265; Elson, 1995). When considering development in developing countries, Gillard et al. (2008) suggest a critical reflection is applied to how development is woven into national and international governance, business practices and concerns, and public and private employment configurations.

This study also takes the position that examining the gender perspective is important for understanding e-government diffusion in developing countries like Nigeria. Gender and technology are considered to be important factors for research; therefore, it has been suggested that there should be more versatility and details within research methodology. ICT research can be examined from diverse gender perspectives, depending on the focus of the researcher. Harding and O'Barr (1987) identify three main feminist epistemological positions, namely: feminist empiricism, feminist standpoint and feminist post-modernism.

Feminist empiricism adheres to conventional research norms and standards, although some strands recognise the importance of the influence of social values and interests in scientific knowledge. However, in adhering to extant methodological rules and standards, it emphasises objectivity and foregrounds the researcher and not the woman as the knowledge bearer (Webb, 2000). Standpoint theory views are known as socially situated and reject the goal of objectivity. It argues that some standpoints are better than others in revealing knowledge about certain issues (Harding, 1998). However, the standpoint theory can be too relativist and so privileges the viewpoints of some groups over others (Lemert, 1993). Finally, feminist post-modernism denies the possibility of a single feminist stance and emphasises the individuality of women, their multiple identities and therefore the uniqueness of the individual stories they tell about the knowledge they possess (Harding and O'Barr, 1987). Furthermore these three main strands of a feminist approach to research are further complicated by the growing complexities of emergent strands relating to the writing of black and disabled women, lesbian research and postcolonial feminist thought (Olsen, 2000).

Morgan et al. (2004) argue that taking just one perspective in studying gender in IS obscures the multi-layered and versatile nature of gendered experience. A multifaceted feminist approach to a gender analysis of IS is required to enable one to foreground women's experiences, address the diversity that exists within women as a group and recognise the contextual nature of experience. Besides dealing with the multi-layered nature of gendered experience, any effective approach, according to Morgan's (2004) argument, must engage with the variety of women's roles in society, their practical and strategic needs, and the factors that direct the creation, utilisation and distribution of IS intervention. They also suggest that the framework should tackle the extent to which women engage in knowledge

creation regarding technology and aid in determining appropriate solutions for changing the gender and technology landscape to deliver a more mainstream approach to women's issues (Morgan et al., 2004).

Furthermore, according to Morgan et al, (2004), citing APC-WNSP (2002a, p1-20), the GEM model is grounded on the fact that any proper analysis of gender perspective in IS must involve a set of dimensions. This approach is believed to cover all perspectives in terms of gender studies and represents the fact that gender inequality could be a factor of many attributes. Although critics express concern regarding the large scope of area of coverage and that the researcher might find it very difficult to establish limits, it still gives the researcher opportunity to study in detail the selected units once the limits have been identified.

Research shows that, for any proper gender analysis in terms of IS to be conducted; such enquiries must address the practical needs of women (Morgan et al., 2004, citing Moser, as cited in Reeves and Baden 2000, p. 14). Strategic

 needs were described as needs "identified by women to assist their survival in their socially accepted roles, within existing power structures" and strategic needs often called political interests are described as "needs identified by women that require strategies for challenging male dominance and privilege". They state that "in any gender analysis that attempts to examine information on gender differences and social relations to identify (and redress) any gender inequities, that such analysis must address either or both strategic and practical gender needs."

In that regard, Morgan et al. (2004) present the Association for Progressive Communications' (APC) Gender Evaluation Methodology (GEM) model to provide a framework for the study of gender and ICT, which addresses all the above and suggests ways in which this methodology can be operationalised, as indicated in Table 1 below. This study therefore adopts the APC's conceptual framework for the study of the relationship between gender and e-government diffusion. However, further refinement of this framework has been undertaken, as this study is focused upon citizens and not policymakers; therefore, only certain gender practical needs (gender division of labour, equal gender access, gender resources control, gender participation in e-government technology and gender roles) and gender strategic needs (gender inequities) are considered. The work of The Association for Progressive Communications (APC), a feminist group, tries to provide and cover these two issues in gender studies. They developed Gender Evaluation Methodology (GEM) models to guide researchers and improve on the detailed analysis of gender studies.

Table 2.1: The gender indicators for e-government diffusion study

Aspects	Gender indicators
Gender Practical Needs:	
Gender division of labour	Employment statistics and detailed job applications and results, stakeholders' views
Access to technology	Education and training records, stakeholders' views

Control of resources and empowerment	Membership of decision-making bodies, job descriptions or membership of policy making bodies, job descriptions
Gender & technology	Stakeholders' views, evidence of women-led initiatives.
Gender roles	Productive: earnings, hours' worked, career aspirations of stakeholders. Reproductive: childcare changes, views on family roles of stakeholders. Community: evidence of change in community tasks/involvement
Gender Strategic Needs:	
Gender inequities	Evidence of gender policy formulation/change (e.g. at state level) Evidence of change in role in household/community

Source: Morgan et al., 2004.

The research studies gender aspects by investigating the feeling, experiences, social regards and beliefs of the subjects as they relate to e-government awareness channels for e-government products and services. However, where possible, references to statistical records will also be made in the area of employment, historic records and written laws of the society. Having examined the analysis indicators, the study will adopt the six gender aspects identified by the research to relate to citizens' behaviour towards the adoption of e-government product and services, as stated earlier in this section. Although some other gender aspects may be considered and included in future, the need to complete this research on time was also considered. The selected aspects of gender are used to form theoretical propositions for the research of gender impact on citizens' behaviour towards the diffusion of e-government products and services within the society. The selected indicators were modified slightly to suit the area of this study and the method adopted by the research. The propositional constructs are therefore stated below.

Proposition 3: Society's gender distribution of labour or work formation will influence e-government awareness channels.

Proposition 4: Gender access to e-government technology will influence e-government awareness channels.

Proposition 5: Resources control and empowerment will influence e-government awareness channels.

Proposition 6: Gender in e-government technology will influence e-government awareness channels.

Proposition 7: Gender roles will influence e-government awareness channels.

Proposition 8: Gender inequity will influence e-government awareness channels.

Finally, the issue of gender indicators points out that the gender perspective covers detailed areas of gender activities in relation to the diffusion of e-government products and services. The question developed to investigate the indicators will be explained in Chapter 3. Research shows that insensitivity to gender is normally an inherent factor in a culture of a society that

attaches importance to individual sex (Mitter, 2004). Having explained gender as a cultural variable, we will examine the theoretical foundations for the study of culture.

2.9 Theoretical foundations of cultural analysis as it relates to the research

E-Government research has been criticised for minimal scrutiny in the area of culture (Heeks, 2002, 2003). Culture is viewed to be probably the most difficult factor to isolate, define and measure and yet has a powerful impact upon the diffusion of information systems (Heeks, 2002; Hasan and Dista, 1999). The difficulty with culture lies in the fact it is viewed in various ways. For instance, culture can be examined at the national, professional or corporate levels and this can cause confusion in the minds of researchers and readers alike (Dasgputa and Gupta, 2010; Noorderhaven et al., 2010).

Culture's theoretical foundation has been dominated by the works of Hofstede (1980, 1983, 1991), Schwartz (1994), and Hall and Hall (1990). It is also acknowledged that, although there is an immense body of research examining models for cultural analysis, few are widely used (Myers and Tan, 2002). Since culture is a subject that has been researched for many years, it has several varying definitions (Sornes et al., 2004). As Hofstede's concepts are being used, the definition applied by this research is that culture is "an interactive aggregate of common characteristics", "a collective phenomenon" which "is learned, not inherited" (Hofstede, 1981:24). As e-government uses online products and services, the role of IS is pertinent to its provision. When considering IS technology and culture, there are three emerging categories: cultural values towards IS technology, culture in IS technology and IS technology culture (Hasan and Dista, 1999). This paper addresses the area of *Cultural Values towards IS Technology* (Hasan and Dista, 1999), a strategy pursued by Kovacic, 2005. However, this research is different as it considers how cultural thoughts, actions and feelings shape interaction with Information Technology (IT). In view of this fact, the scope of cultural research will be in the area of *Cultural Values towards Technology, which only looks at the people who carry with them a pattern of thinking, acting and feeling which is learned through their culture and display it when they come across an IS technology.*

In continuation, IS research is dominated by Hofstede's (2003) model for cultural analysis based on national boundaries. Hofstede (1991) and Hofstede and Hofstede (2005) analysed national culture along five dimensions. Power Distance (PD), Individualism versus Collectivism (IND), Masculinity versus Femininity (MAS), Uncertainty Avoidance (UA) and Long versus Short-term Orientation (LTO). Hofstede's theory was used to investigate the e-government readiness of various countries around the globe (Kovacic, 2005). The theory also led to the identification of national cultures, which is a strategy similar to the one being pursued by this research (Sornes et al., 2004). Although Hofstede's cultural dimensions were not applied, the cultural dimensions of a transitional country, Kazakhstan, were investigated using secondary resources and led to the identification of challenges such as the diversity of the political environment (Janenova, 2010). In developed countries, many e-government papers emphasise adoption, usage and diffusion issues using empirical studies involving survey instruments (Shareef et al., 2009; Carter and Weerakkody, 2008). Whilst such studies are thorough and informative, they miss the diversification of cultures in such countries. Research on Information Systems, including e-government, has been challenged to move away from the nationalistic approach towards the study of social factors like culture, which has come about as a result of research methods based on survey which adopt a field based

research method which will help to provide a detailed analysis of culture (Mayers et al., 2002). The argument supports the research method adopted in this study, which is basically a field study of the research phenomenon.

Hofstede and Hofstede's (2005) dimensions are useful for this research due to their scope of coverage. However, apart from the fact that the Hofstede study is now quite dated, critics have questioned their methodology and the static and deterministic nature of the theory. For example, McSweeney (2002) questions the idea of 'national cultures'. In his critique of Hofstede's theory, he argues that Hofstede (2005)sometimes assumes that all members of a nation uniformly exhibit the same national cultural characteristics. "*National culture from an analysis of sub-national populations necessarily relies on the unproven and unprovable supposition that within each nation there is a uniform national culture and on the widely contested assertion that micro-local data from a section of IBM employees are representative of that supposed national uniformity*" (McSweeney, 2002: 108).

Such views have caused controversy in IS and other academic subjects (Myers and Tan, 2002; McSweeney, 2002). Research findings have identified that various national cultures react differently to new innovation, but also that there can be multiple cultures within one nation. This is a trait that is evident within developing countries (Myers and Tan, 2002, citing Harris & Davison 1999); Huo & Randall, 1991; Pappas, 2001; D'Iribarne, 1997), particularly those which were created by the grouping together of disparate groups for colonial purposes (Hofstede & Hofstede, 2005). As such, Hofstede & Hofstede (2005) caution the unfettered use of 'nationality' as a criterion for measuring culture. Instead, they advocate the employment of the category 'society'. Hofstede found substantial diversity within citizens in a country and similarities between people from different countries (Hofstede, 1980, 1983). Despite criticism of Hofstede, it is still the most widely used research in cultural studies and is cited widely within the IS domain (Hasan and Dista, 1999). It also involves the West African region which includes Nigeria.

In any case, considering culture's theories in the context of this research, there is a tendency to classify all the indigenous ethnic groups in Nigeria as belonging to each of these dimensions; however, when examined closely, the contrary may be true. Having noted the above considerations and time within which to submit the report, the research adopted the Hofstede dimensions for the study of culture. Although some other models could be applied, since the research is an original piece of work, consideration was based on the above stated reasons. For this reason, this research conceptualises cultural influences in diffusion using only the four dimensions of Hofstede and Hofstede (2005): Power distance, Collectivism, Uncertainty Avoidance and Term Orientation.

Power distance (**PD**) is the extent to which a society allows equal power distribution (Hofstede and Hofstede, 2005) and PD was scored to be high in the region. In a country with a high power distance score, subordinates rely on superiors who can include superiors at work, at home or in the community. Therefore, in such a country, the traditional rulers or the local authorities cannot be questioned or contradicted and the subordinates will not question any inequality. The political party or person in power holds the power and is considered to be correct and good. The ruling class are seen as righteous and upright by their subordinates and whatever decision they take is considered right so their subordinates are expected to accept the decision. In such a society the ruling class also hold and control the flow of information

and determines what should be shared among the subordinates. Because it is a high PD society, IS technology like e-government technology is seen as a treat to the authoritarian structure of the society; therefore, it is rebuffed by the authority in power and, even when is accepted, it is still under the control of the authority ruling the society (Warkentin et al., 2002; Hasan and Dista, 1999; Tan et al., 1995). Hasan and Dista found examples of this phenomenon within the Jordan National Information centre which monitors and controls access to the Internet. On the other hand, according to Hofstede and Hofstede (2005) and Hasan & Dista (1999), Australia with a low PD maintains the balance of power within their society and organisations and this has improved the adoption and development of IS in the region. In this type of society, human relations are normally direct and the subordinates are expected to contribute to decision making and don't always leave such rights to the ruling class. However, the structure of the society within the region of the current research is considered to be a high PD society so the ruling class controls the information flow; hence, the flow of information will depend on the disposition of the ruling class or the local authority within such a society. Therefore, since the research deals with the diffusion of e-government products and services from the citizen's angle, a proposition is formed.

Proposition 9*: High PD will influence e-government awareness channels.*

Individualism versus Collectivism: According to Hofstede and Hofstede (2005), this explains the extent to which individuals are attached to the community to which they belong. In an individualistic environment the individuals are more attached to themselves and their rights are more important than that of the community to which they belong, as opposed to a collectivist environment where individuals are more attached to the society and expect the powerful to protect them in exchange for loyalty. Nigeria is categorised as a collectivist society, where filial piety (respect for elders, financial support of parents), chastity in women and patriotism ranks highly (Hofstede and Hofstede, 2005). Individualism has a low score. According to a study carried out by Hasan and Dista (1999), the individualistic nature of Australia has made it possible for the fast development of technology due to the attraction of individuals who are experts in their field. This is in contrast to what is expected from Nigeria with its collective culture, where citizens are expected to believe in the common goal of the community and therefore are expected to be more receptive to team based development. Such a collective society is expected to believe more in a collective based approach to issues rather than individually isolating such issues. Hence, they embrace collective decisions and community ways of doing things. Therefore, since the research deals with the diffusion of e-government products and services among the citizens of Nigeria, a proposition is formed.

Proposition 10: *Collectivism will influence e-government awareness channels.*

Uncertainty Avoidance (UA): Hofstede and Hofstede (2005) define this as the extent to which a culture values predictability. They find that Uncertainty Avoidance indices were mediocre within the region, suggesting that Nigerians will take risks and innovate, but also value and accept some structure in the society. Furthermore UA shows the level of comfort of a society over uncommon or uncertainty issues or activities. A high UA culture tends to have strong traditions and tends to be more bureaucratic in structure and rules (Hofstede, 1991). A cultural structure with high AU will make it very difficult to adopt unpredictable programmes, which is synonymous with IS technology (Warkentin et al., 2002). Although

Hasan and Dista (1999) also discover that West Africa has a low UA culture and are ready to adopt IT systems within their society, there are still many failures of IS technology projects in the region. However, other research in Africa seems to suggest that African countries have high UA and tend to emphasise rules and the structure of the society (Noorderhaven et al., 2010). In any case, the UA will determine how comfortable citizens might be towards e-government products and services, which will determine their attitude towards them. Societies with a high UA will tend to stay away from e-government products and services due to their complexity, just as every other IS technology, and societies with a low UA will be more open to taking risks and trying e-government products and services. Since Nigeria is characterised as a country with a low UA, the research therefore deals with citizens' behaviour towards e-government product and services. Will the level of UA of a society influence the e-government awareness channels for the diffusion of e-government products and services? A proposition is therefore formed:

Proposition 11 UA will influence e-government awareness channels.

Term orientation: Hofstede (1991) describes this as long versus short-term orientation of people in a particular culture. Long term is a measure of people who invest for the future and are patient in waiting for results and short term orientation is a cultural trait of people who expect quick results. Hofstede and Hofstede (2005) found that Nigeria scored very low long term orientation scores. According to Hofstede and Hofstede (2005), in such societies there is persistence, relationships are ordered by status and there is an observation of this order, there is a sense of shame, thriftiness and respect for tradition exists; there is also a reciprocation of greetings, favours and gifts. In e-government, long term planning might be difficult due to the speed of change in technology, but culture with long term orientation will tend to plan well and succeed more than short-term culture. Hasan and Dista (1999) discovered in their study that countries in West Africa and the Middle East tend to have short term culture and struggle to understand and plan for the impact of IS technology. Due to the short term orientation nature of the society, as noted in the region by Hofstede, it is expected that Nigerians will always expect quick results from e-government products and services and this will always influence their attitude towards e-government, depending on how quickly results are seen. It is also noted that they will be more interested in the direct immediate gains of the e-government products and services to their personal life which will shape their attitude towards the adoption of e-government products and services. Considering the above mentioned elements, a proposition is formed to determine their influences on e-government awareness channels when citizens of Nigeria are faced with e-government products and services.

Proposition 12. Term orientation will influence e-government awareness channels.

Masculine and feminine: according to Hofstede and Hofstede (2005), in terms of masculinity, Nigerian society cherishes both masculine and feminine values. Since this was the case, the research excludes it from the dimensions to be studied, considering that gender is an issue of study in this research.

Finally, the area of this research is about the diffusion of e-government among the citizens of Nigeria and issues of citizens' awareness and behaviour towards the acceptance of e-government products and services is considered. This research will investigate if any of the

cultural elements influence the way citizens communicate or the perception of the citizens in terms of the usefulness of e-government products and services. Thus, this aspect of the research will only concentrate on the impact of cultural values on e-government technology and will only study culture within that scope.

2.10 Conclusion

In conclusion, the development and the formations of theories of adoption were based on individuals that are already aware of IS technology and are able to understand the language behind it. It is only when an individual is aware of a technology that they will be able to determine the advantages of a technology. E-government studies show that the technology is designed for use by all citizens of the adopting country and could be used by any individual, no matter what differences there are in the social classifications. This makes the concept of e-government diffusion and adoption more unique. In the development of any framework towards the diffusion and adoption of e-government, the researcher should be mindful of this fact. According to Willis & Tranter (2006), adoptability and usability enhances the advantage of any ICT products, but diffusion strategy determines success.

Finally, reflecting on the overall discussions, it can be determined that most of the research conducted in e-government fields involves social variables that are mostly in organisation units. It is not uncommon to find e-government researchers using this strategy without considering the unique nature of e-government from other information systems. It was established in the early part of this literature review that this research will deal with gender and culture in the wider society, but not gender and culture in an organisation. Myers et al. (2002), Pappas (2001), Heeks & Bailur (2006) and Yildiz (2007) all note that e-government literature is still in its infancy, with little grounded empirical work, and that research that explains political environments and the process of e-government using primary data collected by extensive fieldwork is needed; hence, one of the reasons for this research.

In view of the explanation offered, this research advances into the discussion and presentation of a research method that was be used in the study of the impact of selected social factors on e-government diffusion. It will examine the available research approaches and research methods and select the one which is most suitable for such analysis and give reasons for its selection. The next chapter also presented the research procedures and process applied in the validation of the conceptual framework.

Chapter 3

3. Research approach

3.1 Introduction

Before considering the approach of this research, this thesis will offer an understanding of the scope of this study and provide reasons for selecting and using the chosen research approach, thereby making the chapter more comprehensible to the reader. This chapter will also give descriptions of research approaches and discusses them under various sub headings in order to provide clarification.

To study the impact of gender and culture on the diffusion of e-government products and services in Nigeria, an appropriate research method must be adopted. This will entail considering the sub elements of culture and gender within the societies under study. It will also determine the influence of the culture and gender on citizen's e-government awareness channels and the adoption of e-government products and services. In view of the selected areas and samples of the study, the research will determine if these factors vary among the different indigenous groups under study. It is important to note that a framework for the study of the diffusion of an information system has been developed, but more research on the impact of social factors on IS is deemed to provide more understanding of social factors effects (Venkatesh et al, 2003). In the previous chapter a conceptual model was formed. The model intends to study the impact of culture and gender on the diffusion of e-government products and services in Nigeria. To understand the research topic, this research will validate and provide an understanding of the conceptual model. Therefore, in other to obtain the required data, a qualitative research approach and case study research method was employed. The data collection techniques utilised to collect the data were researcher's observation notes, interviews and reference to archival documents. Reasons for the aforementioned selection of the type of research approach and data collection method are explained and justified within this chapter.

A definition of a research approach can basically be described as the methodology adopted to carry out research, which is noted to have different descriptions. The description of the structure of the research approach will provide and offer a detailed explanation of the meaning. This research will follow the same structure as Myers & Avison (2002), which provides a structure for describing a research approach. The structure is as follows: first, there will be a general overview of the research; second there will be a description and discussion of the research approach adopted in this study. Third, the study will discuss the research method adopted in this research. Fourth, it will look at the techniques of evidence collection and then finally, it will discuss models for analysing and interpreting the evidence collected in this research. To improve the understanding of the reader with regard to the above research structure, a research flow chat with summary explanations has been prepared, as shown in Figure 3.1 below.

Define research problems
Outline aims and objectives

Research design to support research

Research design not supported

Case study research method applied
Both pilot and main case study

Execute the case study and apply data collection techniques

Apply explanation building to analysis of results
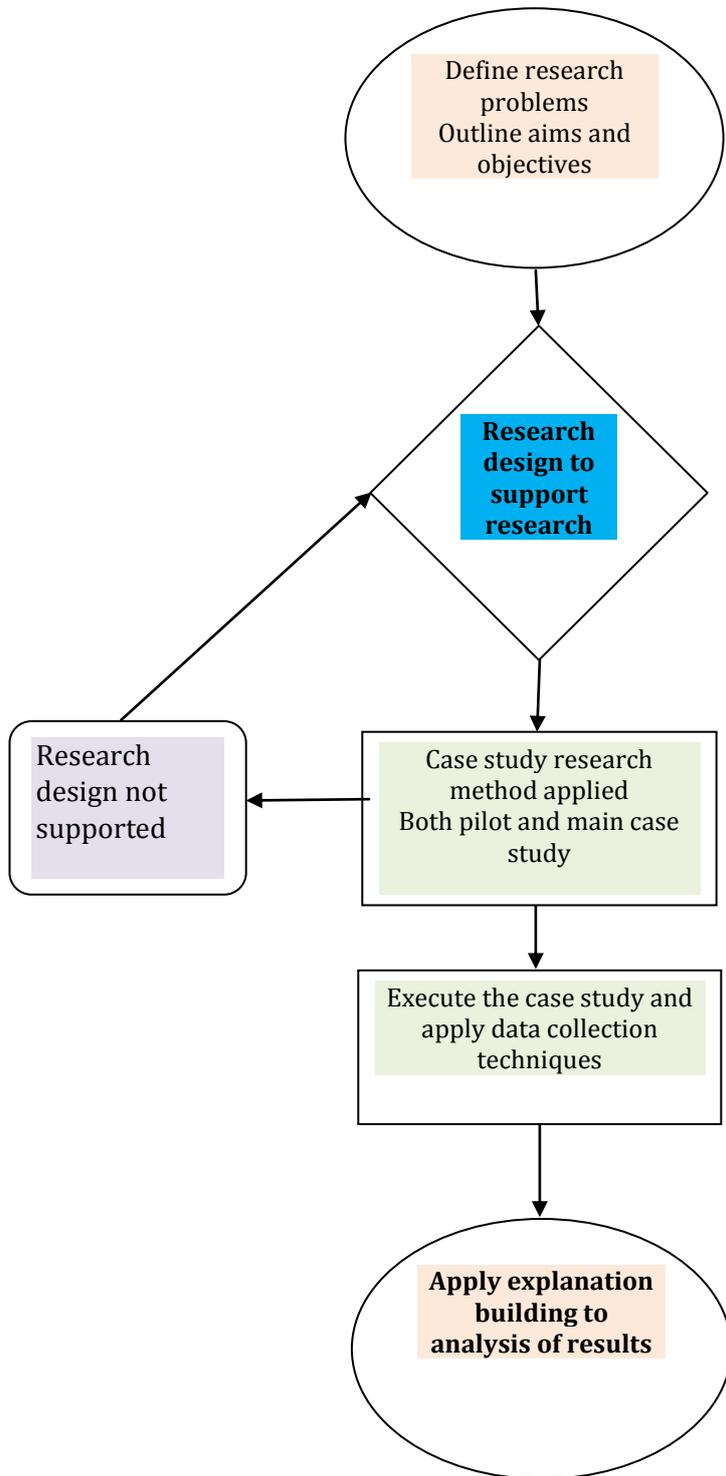
Figure 3.1: Research approach flowchart

The aim and objective of the research will be defined in the overview section of stage 1, then a research design that will support the researcher to achieve the aim and objective will be formed in stage two, in this case a qualitative research approach. Furthermore, a suitable qualitative research approach will be selected at this stage and all the protocols developed to provide adequate data for the research; at this stage, a pilot and main case study method will be applied. Depending on the discovery of the pilot case study, the researcher might decide to change the research design or proceed with the process by applying appropriate techniques to analyse the findings of the research. Further detailed explanations, beginning with the research approach, are offered.

3.1.2. Research approach overview

The choice of research approach has been a major source of concern, especially as it involves Information Systems (Trauth, 2001; Benbasat et al, 1987; Jensen and Rodgers, 2001). This choice is normally made depending on what the researcher wants to know and find out. According to studies, what determines one's choice of research approach is what one wants to lean and how one should go about learning it (Silverman, 2005; Trauth, 2001).

Information Systems has been dominated by two types of research approaches: qualitative and quantitative research (Trauth, 2001; Mayers and Avison, 2002; Mayers, 1997). Qualitative research is mostly described as research involving the use of words and the data are normally obtained using sources such as interviews, documents and participant observation which can be used to understand and explain social phenomena (Miles and Huberman, 1994; Mayers, 1997; Benbasat et al., 1987). Qualitative data was originally developed in the discipline of social sciences (Somekh and Lewin 2005; Jensen and Rodgers, 2001; Trauth, 2001). Examples where qualitative data is obtained from include ethnography, case study, and action research.

The alternative to qualitative research is quantitative research, which involves research methods based on figures and was originally developed in the field of natural sciences, but is widely accepted in the social sciences; it includes survey methods, laboratory experiments, formal methods and numerical methods such as mathematical modelling (Trauth, 2001; Benbasat et al., 1987). Other factors have been put forward as distinctions between qualitative and quantitative methods, for example, subjective versus objective, prediction and control versus explanation and understanding. In IS most research either uses the qualitative or quantitative approach, but researchers have suggested combining one or more methods in one study, which could serve as triangulation (Creswell 2009; Brannen, 2008; Mayers, 1997; Yin, 2009). According to Benbasat et al. (1987, page 382) *"the selection of a research strategy depends on the current knowledge of a topic and nature of the topic among other factors especially when such phenomenon is considered new and mostly IS cases are new and qualitative approach is suitable."* Since the research considers e-government systems to be new to the environment, a qualitative approach will be adopted based on the reasons mentioned below.

3.1.3 Understanding the research approach

From the previous chapters, it is noted that this research is empirical, examining the impact of culture and gender on the diffusion of e-government products and services. This impact can effectively be studied by employing research approaches that can grasp the idea of individual context, feelings, experience and intuition. Therefore, a research approach which is dedicated to the study of social and cultural phenomena is appropriate for this study. Researchers making a link between embracing a socio-technical perspective on information systems and adopting an interpretive stance in IS research shows that interest has shifted to an organisational rather than technical approach (Trauth, 2001; Benbasat et al., 1987). If much about IS involves change resulting from use of technology, then interpreting methods enable study of the "sense making" that accompanies such change (Trauth, 2001). Hence, information is a social process and qualitative methods are better suited to examining social processes, in all their complexity, than quantitative methods (Silverman, 2005; ibid). Qualitative research methods accommodate the system of research whereby the actual behaviour of individuals is accommodated and well represented in the analysis of the individual attitude (Mayers, 1997; Mayers and Avison, 2002; Trauth, 2001). It is known that, the motivation to conduct qualitative research as opposed to quantitative research comes from the observation that the actual thing that differentiates humans from the aural world is our ability to talk (ibid). Mayers (1997) states that qualitative research methods are designed to help researchers understand people and the social and cultural contexts within which they live, thereby helping researchers to understand what people do instead of looking at what people believe they are doing. Such opportunities cannot be offered by quantitative research, which is mainly based on questionnaires and laboratory experiments.

In view of the above, the researcher considers that qualitative research is suitable for this study because the research involves the examination of social factors and how those factors affect the behaviour of people towards the acceptance of e-government products and services. Understanding how people manage and make sense of their lives is important to this study and that can be very difficult to capture in quantitative research. According to Mayer (1999), citing Kaplan and Maxwell (1994), the goal of understanding any phenomenon from the viewpoint of the participants and their particular social and institutional context is largely lost when textual data is quantified. Quantitative research clearly deals with the measurement and manipulation of known variables, which are not clearly known to this research.

Other issues involving the use and adoption of the qualitative approach to this research are embedded in the fact that the researcher needs to understand the environmental situations of the subjects under research and this informs the need to be closer to the subjects. Therefore, the qualitative approach facilitates intimate relationships between the researcher and the subjects (Miles and Huberman, 1994), while in quantitative research the researcher does not need to measure the variables in their natural context.

Further research notes the difficulty involved in the measurement of individual human developmental processes in terms of environmental effects; therefore, these processes in an individual involve perception, reasoning and judgement (Butcher et al, 1997). It is noted that these changes need to be studied in order to be able to understand individual intentions and behaviour towards e-government (ibid). The researcher considers the best way to capture this

process is by allowing the subjects to describe how they view, think and analyse e-government products and services to make decisions. These processes are supported by a qualitative research approach. The support for the understanding of this process at first hand makes the adoption of the qualitative approach suitable for this study.

Importantly, the study of culture and gender were known to be subjective depending on the individual and society; therefore, it could be messy when trying to restrict the boundary of expressions. No matter how good the evaluating principle may be, it might not capture the entire sub element at work within the study area. In most cases, it is always encouraging to allow the subjects to describe their feelings and views in their own words to capture the full personality of the subject and perspective. Important report findings can frequently be accomplished thorough this method (Myers, 1997). In this case, qualitative research is known to be suitable for exploratory and descriptive analyses, which are considered to be best to study culture and gender.

Finally, some of the benefits associated with the use of the qualitative method in favour of the quantitative approach provide an investigative solution to the problem the research is trying to define. Qualitative research provides the advantage of having deeper and detailed knowledge of the phenomena than quantitative research methods (Myers, 1997; Trauth, 2001; Patton, 1990). Qualitative research helps the researcher to seek the participants' views and new dimensions to the phenomena rather than impose views and a known dimension on the subject (ibid.). This view has been supported by feminist groups, which criticise the quantitative research method for being guilty of this instance in the study of gender, in which this research is involved. To conclude the benefits, the research allows the researcher to operate in openness and gives the researcher room to capture what is happening rather than what is believed to be happing, since different societies function in different ways and the diffusion of e-government products and services among societies may vary as a result of the variable social issues.

3.1.3a Qualitative research problems and precautions

There have always been shortcomings in every research method; in as much as there are many advantages to the usage of qualitative research, it also has its own shortfalls. However, the research will adopt measures to overcome, or at least reduce, the effect of the problems in its findings, as noted by previous researchers (Myers, 1997; Trauth, 2001; Patton, 1990; Yin, 1984, 1994). Some of the noted problems first include the fact that, due to the nature of the research which involves deep and detailed analysis, few subjects will be studied. Second, a validity problem could be encountered when trying to generalise the findings. Third, the ability to evaluate and extract data depends mostly on the researcher's skills, which could at times reduce the discoveries necessary in the research findings. Finally, even when the findings are made, they might face the problem of bias (that means to what degree the researcher's own thoughts affect the research findings).

However, the problems regarding qualitative research are well known to the researcher and some precautions and measures were taken to reduce, if not remove, the effect of such problems in order to improve the findings of the research.

The problem of personal bias due to the researcher's relationships with the subjects and the method of data acquisition were checked by multiple methods of data collection techniques. This was achieved by keeping three separate records and running a result confirmation test; the citizens' response records, the researcher's observation notes and a review of archival documents were employed during data collection and analysis. The researcher extended the technique to reduce such bias by contacting almost half of the initial citizens interviewed for results confirmation and review. The citizens' response records were used as the predominant data in the analysis.

The issue of replication, which has been identified as the main problem of qualitative research, was overcome by conducting the research in a semi-structured approach which was guided by the inferences from theoretical propositional concepts and the conceptual model during the data gathering methods. The theoretical propositions and conceptual model were developed in this research in Chapter two forms the guiding principle for data collection. Due to the proper documentation of the case study protocols, the replication of such processes and procedures in another entity is practicable; therefore, this contributes to the improved reliability of the research.

In view of the scarcity of research carried out in the study of the effects of culture and gender in the diffusion of e-government products and services within Nigeria, the research provides an empirical analysis of the variables using different indigenous subjects within different societies in Nigeria. A set of well-defined processes and procedures were adopted due to the nature of the research environment, thereby improving the research findings which will mainly contribute to theory instead of the generalisation of findings, as noted by other researchers (Yin, 2009; Roger, 2003). In most cases, the research contributes to theory and known principles and the sensitivity of the research methods.

Furthermore, because the social factors under investigation vary over time, which is another manifest problem, the researcher allocated a time frame during which the collection, evaluation and revalidation of filed data will take place, as discussed in Chapters 4 and 5. This fact was initially considered to be a problem and limitation, but the experiences of the researcher during the pilot study improved the subsequent process and refined the protocols.

In conclusion, considering the merits and demerits of the qualitative research method, qualitative research is considered to be the most suitable for the empirical investigation of such social constructs. This is because it provides the grounds and supports the processes of capturing the essence of human behaviour and actions on which the research in based. Moreover, this effect is known to be vague. According to Trauth (2001), qualitative methods are particularly suitable when we do not understand the dimensions enough to express them as quantifiable variables, whereas quantitative research fails us when we attempt to measure the unknown, the uncertain or the serendipitous, but the adaptive features of qualitative research enable it to rise to the challenge. Since the definition and description of the qualitative research approach has being given and the justification stated, the next section discusses the research methods used in this study.

3.1.4 Qualitative research methods overview

Research methods involve the way a researcher collects data. According to Mayers (1997), it is the strategy of inquiry which includes research design and data collection and these influences the way data is collected. It is known that many research methods exist and each require different skills, assumption and research practices (Mayers & Avison, 2002; Yin, 2009). The chapter will consider some of the main research methods involved in the qualitative research approach and will offer brief insights into the nature of different research methods. They include action research, case study, ethnography and grounded theory (Mayers, 1999; Trauth, 2001; Patton, 1990; Yin, 1984, 1994).

Although action research is largely ignored by Information Systems researchers (Benbasat et al, 1987; Jensen and Rodgers, 2001), it has suddenly started attracting a degree of attention due to some of the notable research findings that have been obtained (Mayers, 1997; Trauth, 2001). The reason that action research was not highly regarded as suitable is attributable to the fact that it is not regarded as research that contributes to knowledge (Mayers, 1997).

Definitions of action research vary; however, the most widely accepted version is that "action research aims to contribute both to the practical concerns of people in an immediate problematic situation and to the goal of social science by joint collaboration within a mutually acceptable ethical framework" (Rapport, 1970:99). From the definition, it can be deduced that action research is more inclined towards critiquing social phenomena and social conflict resolutions. This research is more explanatory than exploratory research, which is why it was not considered appropriate for this research.

Another qualitative research method known as ethnography was also considered by this research. Ethnography is the process by which the researchers immerse themselves in the life of the people that they study; they seek to place phenomena studies in their social and cultural context based on observational work (Silverman, 2005; Trauth, 2001). The study comes from the discipline of social and cultural anthropology, where an ethnographer is required to spend a significant amount of time in the environment under study (Mayers, 1997; Jupp, 2006). It employs interviews, conversational and discourse analysis, documentary analysis and film and photographers' repertoire (Jupp, 2006). It is now becoming widely used in IS research. The definition explains its exploits and skills. Most critics express views about its time consuming nature and small area of coverage. It is not appropriate to suggest that ethnography was applied to this research as the researcher did not spend a large time in the regions and immerse him in the culture in order to understand deeply the human feelings. Considering that gender and culture are dependent on individual perspectives; therefore an added reason for discounting ethnography.

An alternative also considered by this research was the grounded theory approach. Due to its recent popularity among IS researchers it was also referred to. It was learnt that the method is extremely useful in developing context-based, process-oriented descriptions and explanations of phenomenon (Corbin & Strauss, 1990, Trauth, 2001; Jupp, 2006). It seeks to develop theories that are grounded in data, which are systematically gathered and analysed (Jupp, 2006). Mayers (1997), citing Martin &Turner (1986), states "that grounded theory is an inductive, theory discovery methodology that allows the researcher to develop a theoretical

account of the general features of a topic while simultaneously grounding the account in empirical observations of data." It is known that the major difference between grounded theory and other methods is its specific approaches to theory development. However, that was not the intention of this research; hence disallowed.

Furthermore, a case study can be either a unit of analysis or a research method. According to Yin (1994, 2009) "It is an empirical inquiry that investigates a contemporary phenomenon within its real life context especially when the boundaries between phenomenon and context are not clearly evident." It is one of the most commonly used methods in IS research (Orlikowski & Baroudi, 1991; Alavi & Carlson, 1992; Banbasat et al., 1987). The argument in support of case studies being well suited to IS research is that the object of the discipline is the study of Information Systems in an organisation where interest has shifted to organisational relationships rather than technical issues (Benbasat et al, 1987; Trauth, 2001), but in a situation in which the relationship is being sought after in broader society settings, the question which must be asked is: 'is it still the most suitable?'

Having given an insight into some types of research methods applicable within IS research, this study adopts the case study research method and offers explanations for the reasons for selecting the adopted research method in the next section.

3.1.4a Understanding research methods

In line with Yin's (2003, 2009) definition of a case study which has been stated above, the case study research method has the capability of uncovering casual paths and mechanisms and, through richness of detail, can identify casual influences and interaction effects which might not be treated or identified as variables in a statistical study (Garson, 2007). Furthermore a case study was defined as an empirical enquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between the phenomenon and context are not clearly evident (Yin 1994, 2009). Since the main aim of this research is the study of Information System technology (e-government) and societal behaviour (effect of culture and gender on the diffusion of e-government products and services), it is considered to be investigating a contemporary phenomenon within a real life context. It is also known that culture and gender variables are very difficult issues to define and measure (Hasan & Ditsa, 1999; Morgan et al., 2004) and such social factor variables like culture and gender boundaries and contexts are not always clear; therefore, the researcher considered the case study method to be appropriate.

An added reason for the suitability of a case study is that the main theme of this research depends on the need to understand how the chosen social factors affect the diffusion of e-government products and services and why those factors are important. A case study research method is based on the need to understand the 'how' and 'why' question in a research phenomenon and states that the 'how' and 'why' questions are what separates the case study research from other research methods (Yin, 1994, 2009; Banbasat et al., 1987; Jensen and Rodgers, 2001). This research seeks to study how culture and gender impact on the diffusion of e-government products and services in Nigeria; therefore, case study research is suitable to explain this phenomenon.

Furthermore, a case study has the ability to measure internal constructs that are not known and provides a substantial advantage when compared to other research methods (Gomm 2006). This research is subjective and requires an understanding of the reasons for actions and reactions of human subjects towards the acceptance of e-government products and services. This means it will be dealing with the invisible conceptions of human subjects such as emotional resilience, personal drive and compassion. To be able to evaluate this variable, the researcher will have to immerse themselves in the participant's society and activities, and establish a relationship with them in order to build trust and understanding. This will encourage the participants' cooperation; hence, providing the researcher with the opportunity to capture the complexity associated with such research. Using such reasoning, a case study is considered to be most suitable method for this type of research.

In continuation, although some other research methodologies define strength on the in-depth study of phenomena like ethnography, they do not have the capability or grounded 'why' and 'how' approach which the case study approaches has. It is established that in addition to the 'why' and 'how', the case study approach also emphasises comprehensive in-depth analysis. However, the main aim of this research is to build an understanding and contribute to theory development by answering 'how' and 'why' questions within this research. Most importantly, the case study method allows the incorporation of different material in the data collection process.

Summarily, case study research excels at bringing about an understanding of complex issues or objects and can extend experience or add strength to what is already known through previous research. Case studies emphasise detailed contextual analysis of a limited number of events or conditions and their relationships. The research determines in advance what evidence to gather and what analysis techniques to use with the data to answer the research questions. Data gathered is normally largely qualitative, but it may also be quantitative. In case study research, the research begins with a review of the literature to determine what prior studies have determined about the issue and uses the literature to define the following questions for the study of the phenomena. This advantage places the case study method in a more suitable light for this research than ethnography, which does not permit the researcher to have predefined set protocols.

One of the major differences is a case study's applicability to real-life contemporary human situations and its public accessibility through written reports. Having considered all the advantages, the case study research method is deemed to be most suitable for this research. However, critics have devalued the case study as a result of notable weaknesses; therefore, the research will not ignore these noted weaknesses. Rather, the research will discuss and offer strategies to reduce, if not remove, the effect of such problems from this research. The discussion is conducted in the next section.

3.1.4b Evaluating case study weaknesses

Case studies are widely used in the IS research field due to their benefits and they have equally attracted criticism (Yin, 2009). This research will discuss some of the arguments against this method to provide the essence of adopting the method. Some pro-case study research notes that the drawbacks of the case study method were not being attacked; rather,

the immaturity of sociology as a discipline was being displayed (Tellis, 1997, citing Hemel et al., 1993). However, this assertion will not stop the discussion of the weaknesses of the case study; rather, it will provide basic knowledge of such discussions.

The strongest argument against this method is that, considering the small area of coverage, a validity problem to generalise findings is apparent (Benbasat et al., 1987; Jensen and Rodgers, 2001; Yin, 2009; Trauth, 2001). Although the approach faces the problem of generalisation, generalisation is not according to the sample of population, but the case similar to the one studied (Rogers, 2004). In statistical analysis, one is generalising to a population based on a sample which is representative of that population; however, in case studies, in comparison, one is generalising to a theory based on a case selected to represent dimensions of that theory (Yin, 2009). This research finding contributes to theory by providing the knowledge to understand the implication of culture and gender on the diffusion of e-government products and services and provides data for the development of the model to study this phenomenon in Nigeria. Therefore, it does not generalise to a population.

The advantages of adopting the case study research method for the study of the implication of culture and gender on the diffusion of e-government products and services basically concern its rigour towards details; even in small samples, it leads to more certain and precise understanding of the societies under investigation. Since the societies under investigation are entities bounded together in one nation, the researcher opted for a method that will provide the capability of studying cultures in smaller units. The case study method will allow the study to show more precisely how a society differs in terms of gender and cultural practice.

Finally, the most important consideration is the population where the research is to be carried out. The citizens contacted in this case study research are mostly illiterate. In most cases, they can neither read nor write and are often sentimentally attached to their beliefs. This behaviour was noticed during the researcher's previous work in the case area. A case study will provide a forum to translate the question and responses and facilitate the recording of the discussions. It also allows the use of the researcher's personal notes, which will mostly be recorded through observations. Finally, a review of archival documents was employed during data analysis. All these forms of data collection methods employed by the research provide validity and reliability for the study. It was noted that a case study could be applied using two different strategies and each has its process and procedures. In order to give more insight into the case study research strategy and the type of case study strategy that was adopted in this study, this chapter evaluates the two case study research strategies in the next section.

3.1.5 Evaluation of case study strategy

The version of the case study adopted in this research will be described to guide the reader's judgement. The term case study means different things depending on the context used. It can be described as a unit of analysis and can also be used to describe a research method (Yin, 2009; Myers and Avison, 2002). This research will apply the two meanings of case study where appropriate. Case study research includes both single and multiple case studies (Yin, 2009) depending on the suitability to the research. In any case, when they are treated as a research method, they share a similar description and it is noted that all strategies of case studies explain the case of interest to a greater depth and recognise that the case is the

phenomenon occurring in a bounded context (Miles and Huberman, 1994; Mayers and Avison, 2002).

A single case study occurs within one context with an emphasis on the phenomenon occurring in a bounded context (Yin, 2009; Miles and Huberman, 1994; Patton, 1990). It is mostly targeted at understanding a phenomenon in great depth in a particular context (ibid). The single case study method has been criticised for its scope of coverage; hence, generalisation will be difficult. Validity and reliability are also mentioned as flaws.

The second type, the multiple case study, is absolved of such a problem due to its characteristics (Yin, 2009; Rowley, 2002). The research notes that this form of case study will validate the phenomenon being investigated through different contexts and, as such, unites the result. This can be simply defined as the use of multiply entities to study a phenomenon, which is the reasoning for applying this to this research study

In conclusion, case studies can be single or multiple-case designs, whereby a multiple design must follow a replication rather than sampling logic; however, if no other cases are available for replication, the research is limited to single-case designs (Tellis, 1997; Yin, 1994). However, generalisation of results from either single or multiple designs applies to theory and not to populations. Multiple cases strengthen the result by replicating the pattern-matching, thus increasing confidence in the robustness of the theory (Tellis, 1997; Yin, 1994). The current research involves three different ethnic groups and it also compares the findings to draw a cross case analysis of the findings in order to provide an answer to the research questions of this study; therefore, a multiple case design is suitable for this research. In view of the fact that the case study entity is made up of multicultural societies and the variables of the study are known to be dynamic, replication of the research among the ethnic societies within the entity is very important to the findings of the research, so a multiple case design is suitable. This research considers a multiple case study strategy to be most suitable for this investigation and has consequently adopted it. Additionally, whatever the design, they all have a different pattern of data collection techniques and this reason brought about the categorisation of types of case study using the stated criteria. This chapter goes on to consider the type of case study used in this study, which is discussed in the section below.

3.1.5a Type of case studies

In the section above, it was discussed that a case study is a time honoured, traditional approach to the study of topics in social sciences and management; it has the capability to uncover causal paths and mechanisms and, through richness of detail, identify casual influences and interaction effects which might not be treated as operationalized variables in a statistical study (Garson, 2007). In case study research, different types of procedure can be applied which determine the timing of data collection using the method (Benbasat et al., 1987; Yin, 2004, 2009; Trauth, 2001).

Longitudinal case studies: can be either quantitative or qualitative or both. They are the study of one research entity at multiple time points and thus entail collection of data at different points during research. They are suitable for research that is monitoring a citizen's behaviour

from the time of introduction of the IS technology to the time of proper usage. Such a researcher will collect data at different points during the research to determine its findings.

Pre/post case studies: type of case study for the study of one research entity at two time points separated by a critical event. A critical event is one which, on the basis of theory under study, would be expected to impact on case observations significantly. They are normally used in cases where research will want to determine the behaviours of citizens before the introduction of IS technology and the behaviour of the citizens after the introduction of the technology.

Patchwork case studies: a type of case study integrating several case studies that research the same entity at any time (Jensen and Rodhers, 2001). Such research could be by combining findings from snap shot, longitudinal, and/or pre/post designs (ibid). According to Garson (2007), a patchwork case study is suitable when using a set of multiple case studies of the same entity for in-depth views of the dynamics of the research subject. This multi-design approach is intended to provide a more holistic view of the dynamics of the research subject. In most cases, they could be seen as longitudinal due to the advantage of drawing from different findings of the same entity.

Comparative case studies: are a set of multiple case studies of multiple research entities for the purpose of verifying a theory. Their objective is usually cross unit comparison in an attempt to straighten generalisation in case study research. Although they do not make room for the accommodation of other case study findings, they provide enough support due to the quality of the research findings (Yin, 2009).

After completing the process of understanding the case study structure, the researcher selected the most suitable for the study based on the capabilities stated above. The researcher adopted a snap shot approach and employed comparative studies of the cases to make up for the generalisation of the findings and straighten the quality of the research towards theory contribution. The research is a comparative study of snap shot cases of the evaluation of influences of culture and gender on the diffusion of e-government products and services within three indigenous societies of Nigeria. It is a snapshot due to being a one point in time study (Yin, 2003). The multiple entities in this research are the three indigenous societies where this study will be carried out. It is thus a snapshot because the data collection will only be conducted during one time period.

3.2 Conducting the case study

In order to undertake the case study, a pilot case study was first conducted. According to Polit et al (2001) a pilot study could be seen as a feasibility study conducted in readiness for the main study. The pilot was undertaken by selecting citizens from the main case context. The aim was to examine the feasibility of the propositional constructs obtained from the theoretical analysis in Chapter 2 section 2.8.2 & 2.9, and to understand in depth the applicability of the research approach. The pilot was necessary to the research as, to the best of the researcher's knowledge, no known research of that nature has been done in the environment using the sample population. It has been noted that no such research involving e-government adoption and cross cultural considerations of the indigenous society involving

qualitative research approach has been conducted in Nigeria, so in order to determine and make the question relevant and understandable to the participants, a pilot was conducted (Yin, 2003). Secondly, considering the language problem envisaged by the researcher, a clearer understanding and prior knowledge of the environment under study will be very important to improve the formulation of questions and the selection of participants. Furthermore, a pilot is important to test techniques to be adopted for the collection of data. Finally, for safety reasons, the issues of this research are very sensitive and the mode of entry into such areas will have to be established with the local authorities and local partners identified in the three areas. Thus, an explanation of how the pilot study was carried out is offered.

3.2.1 Pilot case study

The pilot consisted of 30 participants from the indigenous groups, two academic staff from the researcher's institution and one participant from the government institution that regulates and monitors e-government development in the country. The subjects for the pilot study were selected based on self identification with the researcher's established social network in the area.

The two academic staff were selected from the researcher's school due to the expertise required for the development of the questionnaire; proximity to the researcher and convenience were also considered. Their inclusion was also based on their vast academic experience in the area and their skills to evaluate research procedures and processes. Their experience was used to establish how relevant the primary research questions might be to achieving the aim of the research. They provided the expert skills and opinions needed to form and evaluate the research questions.

The government personnel included in the pilot study provided access to documents that were kept by institutions and helped provide access to some difficult areas if necessary. The individual was selected from the main institution that oversees the implementation of e-government in the country. His experience in the circle provided information that was valuable to improve the questions for the research, especially with regard to data collection. The individual was equally useful as a local liaison person during subjects' identification and the research tried to tap into his experience and knowledge about the use of e-government online services within his office.

The 30 indigenous subjects were selected from the three indigenous societies identified in this research, as stated in Chapter 1 section 1.2. Issues that were considered included their proximity, convenience and awareness of e-government products and services. Since the research examines gender as a factor for consideration, care was taken to ensure there was equal gender representation within the subjects.

There are six sources of evidence used when conducting a case study. According to Yin (2009) they are: documentation, archival records, interviews, direct observation, participant-observation and physical artefacts. During the pilot study, data collection was mostly through interviews and direct observation. The researcher developed a set of questions to serve as a guide during the interviews with the pilot subjects. The guide questions were reviewed by the

academic experts in the group. The details of the type of evidence used, definitions and analysis of evidence will be discussed and described in Chapter four of this report.

3.2.1b Research precautions

As noted earlier, a pilot study was conducted. During the period of the pilot study, the identified individuals were contacted. It is important to state that the services of local research liaisons were acquired; they provided guidance within the locality. The researcher was aware that the research might be viewed as an investigative instrument and he might experience some resistance in terms of access to archival documents by staff working in the organisations that keep these records, especially from the management of those organisations. The issue was taken care of by the use of the government officer involved in the supervision and implementation of e-government in the country, as earlier identified. He provided support throughout the research.

3.2.2 The case study

The current case study research has three embedded sub cases within one case. According to Yin (2009), a multiple case study comprises more than one 'case' within one context or independent group. The main 'case' is Nigeria and the research involves the study of three indigenous societies comprising 'three cases' within the country as one case. The multiple case studies employ a snapshot approach of evidence collection. The snapshot case study has been previously described and defined in section 3.1.5a. The adoption of the snapshot was as a result of time; since this is a student thesis, the financial implications involved in conducting a longitudinal method would have been overwhelming. Although longitudinal is considered to be more appropriate for social research like this, the approach was not selected for the reasons proffered above. The case study was researched using three sub case studies based on indigenous ethnic groups: Hausas, Yoruba and Ibo. Amongst each sub case study, the research categorised the citizens into three groups: firstly, those who have been exposed to the usage of e-government; secondly, those who have not used it before, but possess similar information (like an awareness of the Internet) and thirdly, those who lack knowledge of e-government information or related knowledge. A total number of 180 subjects were proposed but 153 subjects were finally interviewed. Some factors were considered, for example, determining the average time a particular interview will take, multiplying that by the number of the participants within one sub case study, then dividing that figure by the allocated time for each sub case study investigation. For the research cycle, the researcher allocated a total time interval of 60 days for data collection after completion of the pilot study for each of the sub case studies, making the total for the collection of all data 180 days. Interviews were targeted at an average of one subject per day, but an extra 15 days was added due to missed appointments and in the event of unforeseen circumstances, as described later in Chapters 4 and 5. Since one of the issues of this research involves gender, there is equal gender representation among the subjects. This strategy allows an equal gender balance perspective towards the findings. The case study design is shown below in Figure 3. 2.
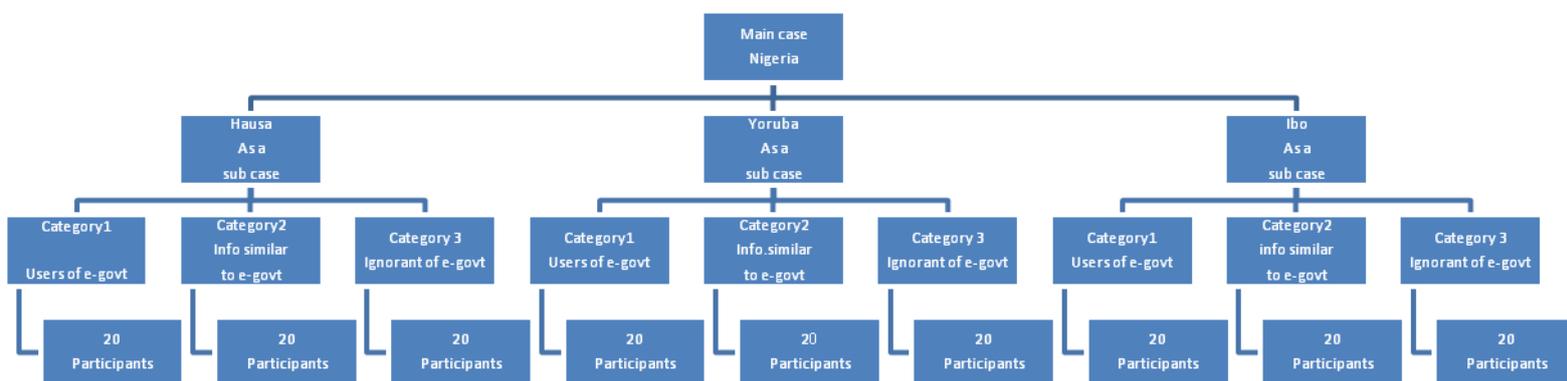
Figure 3.2: Case study diagram

The researcher collected evidence based on a snap shot strategy of case study research, as explained previously. The strategy for evidence collection and analysis is discussed in the next section below.

3.2.3 Data collection techniques

According to Yin (2009), when conducting a case study, evidence can come from any source. The data sources associated with a case study were listed previously and were six in number. The word evidence could sometimes be referred to as empirical materials (Myers and Avison, 2002). In quantitative research it is often called data. Qualitative research data comes in the form of words and sentences so most researchers use a term that will portray the mean of the result. The sources of data were listed as follows: documentation, archival records, interviews, direct observation, participant-observation, and physical artefacts. The listed sources are known to be most commonly used in case study research (Yin, 2009). Below is a brief description of the evidence sources to provide justification of the choice adopted.

3.2.3a Documents

Documentary information involves document reviews, and could assume different forms: material detail of laws, memoranda, announcements, written report of events, personal diaries and notes (Yin 2009). Although they are not considered accurate in terms of verbatim interpretations which the research is involve in evidence from these kinds of sources has the

capacity to generate ideas for questions that can be investigated (ibid). The researcher considers it to be unsuitable for the research.

3.2.3b Archival records

The records come in the form of public files, census and statistical data, organisational records displaying employee or budget or personal records, maps charts and service records (Yin, 2009). These types of data are normally collected for a particular purpose (Ibid); thus, caution was exercised during the examination of such records because data collected for a particular purpose could be serving a particular interest. Most of the evidence appeared in a quantitative format, but research has advised that it does not necessarily mean accuracy (Ibid) so the same caution was applied in its usage and examination. Although the research deals with behaviour with an emphasis on how people feel, this technique was not considered to be appropriate for this type of research enquiry; nevertheless, the researcher adopted this technique for the purpose of comparison and the provision of background information to straighten the research findings.

3.2.3c Interviews

Interviews entail asking questions, listing to and recording the answers and several other processes (Gubrium and Holstein, 2002; Silverman, 2005). Studies considered interviews to be the most important source of case study information (Yin, 2009). Although they are synonymous with a survey, they are also an important source of information for a case study (Ibid). The interview is normally a structured conversation, is noted to follow different procedures and is categorised in types. There are three recognised types: the in-depth interview, the focused interview and the one that entails more structured questions (Yin, 2009). A brief definition of the types of interview is offered below to bring clarity to the choice of type.

In-depth interview:

In this form of interview, the researcher will put questions to subjects which they will answer and the researcher will also ask the subjects their opinions about the issue. Thus, the answers to the researcher's questions, as well as the opinion of the respondent are important. They are normally conducted via more than one meeting (Gubrium and Holstein, 2002). Any type of interviewing technique can be adopted including the semi-structured interview and open-ended interview, but the in-depth interview is synonymous with informal conversation. In the collection of evidence, it is known for its in-depth qualities and its flexibility when asking a predetermined set of questions (Gubrium and Holstein, 2002). This strategy was considered to be appropriate because, in order to understand the makeup of the society and its functionality, the free viewpoint of the subject is crucial. However, although this approach is suitable for the case study, time and financial involvement in repeated visits to one respondent over and over again makes the process very expensive and time consuming for a student research project. The flexibility of wording and the sequence of questions might result in substantially different responses, so the researcher considerers this method unsuitable for this research.

The final interview type entails more structured questions (Yin, 2003, 2009). According to Yin (2009), this type of interviews is normally embedded in the case study and their results are often in quantitative data. The researcher could not relate it to the current research, therefore it is not considered.

The focused interview:

This follows a conventional process and is normally conducted over a short period of time. The researcher normally devises a set of guideline questions derived from the aim. This type of procedure is normally used when the researcher wants to corroborate evidence from previous findings. Focused interviews are synonymous with open ended conversations. This type of interview has many advantages. It allows the researcher to collect evidence systematically and facilitate comparability with multiple subjects. Furthermore, the researcher can put the same question to different respondents and this helps reliability. The researcher considers this approach to be appropriate for the case study because the pilot study must have provided the proposition which will be investigated by the wider case study. Secondly, it will save time and cost. Considering the researcher's previous experience, the subjects might find it more comfortable.

The final interview type entails more structured questions (Yin, 2003, 2009). According to Yin (2009), this type of interviews is normally embedded in the case study and their results are often in quantitative data. The researcher could not relate it to the current research, therefore it is not considered.

3.2.3d Direct observation

Observation can range from formal to causal data collection (Yin, 2009). This is the act of collecting data through note taking about behaviours of subjects or events occurring   around the case. It could be in the form of taking record of occurrences of a particular event or behaviour (ibid). According to Yin (2009), the formal observational data collection will take place mainly in places like meetings, factory work places, classrooms. It normally takes the form of noting down the occurrence of a particular type of act in a particular place. Casual observation data collection normally takes place when other methods of data collections are taking place, mainly during field visits. It is mostly used to observe the environmental events that can influence the outcome of the evidence.

This research is social science research which deals with humans and society. In most cases, according to the findings in Chapter 2, the environment normally influences the activities of humans and the way they behave. Thus, it is suitable to consider a type of evidence collection that will help the researcher observe the subjects and look at their individual environment during fieldwork. This will help the researcher to understand and validate the subject's answers. Having considered all these elements, the researcher selected direct observation under casual situations to be suitable for this research.

3.2.3e Participant-observation

This is the type of observation one conducts by being a player in a particular role or becoming involved as a participant in a case study. In this case, it is noted that the researcher

can assume any role and make note of the findings as evidence to be used as case study evidence (Silverman, 2005). According to Yin (2009), the approach has the problem of potential bias and will require sufficient time to become used to each role. Considering that this is a student dissertation, time constraints mean such an evidence collection method will not be suitable. This is normally a good method for ethnographers.

3.2.3f Physical artefacts

This involves the examination of physical or cultural artefacts and such objects could be observed as part of a case study (Yin, 2009). Because this research deals with behaviour and perception, the chances of physical observation of physical objects to collect data is slim, so the researcher considers this method to be less significant.

Having identified the evidence collection method, a brief discussion on the extra approaches is offered to provide the reader with a clearer understanding about the execution plan of the data collection method. The research employs the services of the research liaison personnel who were trained prior to the fieldwork. They were trained about research procedures and systems of subject identification, note taking where necessary and how to administer research questions. The research liaison personnel are basically university graduates from the local universities in each of the indigenous areas. The basis of selection was fluency in the local spoken language and the ability to read, translate and write both in English and the local indigenous language. They assisted the researcher to reach out to the less educated participants who might prefer their local language to English. The researcher considers that talking to citizens in their local language often increases their confidence and makes them more comfortable. Since there are three indigenous societies, six people were employed; at least two research liaison personnel to every sub case. This number was increased during the Hausa indigenous field work to threeliaison personnel.

The evidence collection session started by introducing the research aim, the purpose and the identity of the researcher, together with the accompanied research liaison personnel, to the respondents, although this will be explained further in Chapters 4 and 5. The research employed a voice recorder with the permission of the respondents and used photographic evidence where possible.

As soon as any evidence was collected, the recording was transcribed. Any findings were classified into categories close to the ones developed from the literature review. This is done to prevent the findings being disorganised, thereby reducing the confusion when analysing the evidence. The evidence analysis in this research is an important part of the study, so an explanation is offered below.

3.2.4 Data collection

In a case study, the method of data collection determines the level of reliability and the support to deal with the problem of construct validity (Bickman 2000; Creswell 2009;Yin, 2009). The principles of data collection are listed, as the use of multiple sources of evidence creates a case study database and maintains a chain of evidence (Yin 2009).

Firstly, multiple sources of data for a phenomenon analysis support the justification for data triangulation (Silverman, 2006). Although there could be many types of triangulation (data triangulation, investigator triangulation, theory triangulation and methodological triangulation), as stated by Yin (2009), the current research considers only cross case analysis which serves as verification and validation of the research findings. With that, the potential problem of construct validity is addressed because of multiple sources of evidence which essentially provide multiple measures of the same phenomenon (ibid). . The study will adopt three types of evidence collection which will be analysed together: structured Interviews, review of archival documents and researcher's observation notes are all employed in the evidence collection.

However, this type of case study data collection has its disadvantages as well as its advantages. It is known that, due to multiple sources of evidence involved, it is more expensive to execute. Second, it is more tedious because it will require the researcher to master different types of data collection methods. However, due to different methods of evidence collection used in the pilot study, the researcher was able to acquire the necessary skills and some other methods used by experts were also studied to improve his knowledge of evidence collection and analysis, as advised by Yin (2009).

Second, the researcher developed a case study database. According to Yin (2009), this is a method of organising the data collected by case study which could be in the form of notes, documents, tabular material and narrative translations. This is normally different from the case study report. Such a database can be built by interpreting stories and texts eliciting the significant statements that could be detected in them in a strategic form (Colaizzi, 1978). By keeping a database, other investigators will be able to use the primary data for further analysis. It will also increase reliability and provide important references for citation during report (Yin, 2009).

Finally, the research maintained data to balance its findings by developing a chain link of evidence. According to Yin (2009), developing a chain link of evidence will allow the reader to follow the derivation of any evidence from the research questions to the case study's conclusion. If a sequence of evidence, as recommended by Yin (2009), is followed, the report will firstly be able to cite relevant portions of the case study database, and the current research represented citations from the database of the case study to show subjects' responses that supported the findings. Secondly, the database should reveal the actual evidence and under what circumstances the evidence was collected; this record was also maintained during data collection so it formed part of the case study database. Thirdly, there should be enough proof to show that all evidence collection procedures were followed and, finally, there should be a link between content and initial study questions. In continuation, this research maintained samples of all the instruments used in this research and related each finding to the objective of the research which provided the answers to the research questions and the aim of the research. The diagram in Figure 3.3 shows the process and procedures observed for data analysis during this research, as adopted from Yin (2009).

Case study report

↕

Case study database

↕

Citations of specific evidentiary sources in the case study database

↕

Linking questions to topic

↕

Case study questions
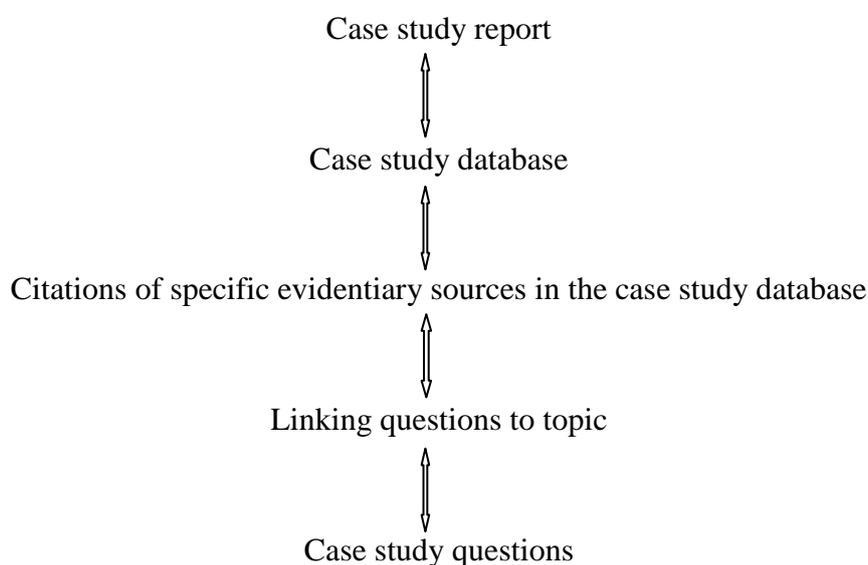
Figure 3.3: Maintaining a chain link of evidence

Source: Yin (2009).

This will provide enough clarity for the reader to work back from research report to the research questions and therefore reflect on concerns for construct validity and reliability. The method of analysis of this evidence will be examined below.

3.2.5 Evidence analysis

In case study evidence analysis, research has not been clear on how this evidence should be structured and analysed (Trauth, 2001; Yin, 2009). Benbasat et al. (1987) believe that case study techniques for analysing evidence are still remote and this has made it very difficult to practise. Yin (2009) states that to overcome these circumstances every case study should follow a general analytical strategy of defining priorities for what to analyse and why. The strategy was listed as follows, relying on theoretical propositions, developing case descriptions, using both quantitative and qualitative data and examining rival explanations. Furthermore computer aided software (Microsoft excel, PowerPoint and NViVo) was used in some instances. However it was noted that the need for a strategy cannot be replaced by computer aided designs (ibid). At the same time having a research findings analysis strategy will improve the use of computers to manipulate data more effectively and efficiently and will also help treat the evidence fairly, produce compelling analytical conclusions and rule out alternative interpretations.

The research employed theoretical propositions and a case description strategy to build evidence and employ explanation building when examining the evidence. This means that the research propositions functioned as a theoretical orientation guide to study the case. The research only focused attention on the data with regard to the propositions and ignored other evidence, but the data was grouped according to categories of citizen's awareness of e-

government products and services as shown in figure 3.2. This was done to improve data conceptualisation and reduction.

With regard to evidence analysis techniques, Yin (2009) states that five options are desirable, depending on the type of case study research. They are listed as pattern matching, times series analysis, logics models, cross-case synthesis and explanation building. A brief description is provided.

The first is listed as pattern matching, and Yin (2009), citing Trochim (1989), opines that such logic compares an empirical based pattern to a predicted one. In the same study it is noted that it is the most important key in this form of technique, in that it predicts the pattern of the specific variable as defined prior to data collection. This is often used for explanatory case studies where patterns are related to independent variables. The result must show variables as predicted.

The second, time-series analysis is used to monitor events subject to time variations. Since this research is not a time range study, this technique was not considered.

The third, known as logic models, deliberately stipulates a complex chain of events. It has sequential stages whereby a dependent variable at an earlier stage becomes the independent variable for the next stage. Since this research is not based on a series of events, but is a snap shot case study as explained earlier, this technique was not considered.

The fourth, explanation building was adopted by this research. It is used in case study evidence analysis by building an explanation (Yin, 2009). However, this technique could be difficult, as noted by research (ibid); nevertheless, it supports propositional generation which was conducted during the theoretical review in Chapter two of this study. According to Yin (2009), this technique may not have been well documented in terms of its operation, but a series of iterations which are likely to form operation procedures were given, as stated below:

- Making an initial theoretical statement or an initial proposition about policy or social behaviour (the current research has developed sets of initial propositions about the influences of the culture and gender elements on e-government diffusion within the indigenous societies of the country).

- Comparing the findings of an initial case against such a statement or proposition (the research conducted a pilot study and the findings of the pilot study were used to redefine the initial propositions).

- Revising the propositions (the findings of the pilot study were applied to redefine the propositions).

- Comparing other details of the case against the revision (the researcher conducted the case study and reviewed the case details based on the findings).

- Comparing the revision to the facts of the case (the findings of the case study were compared among the three indigenous societies).

- Repeating the process (a conceptual framework was formed and future research recommended).

However, the problem commonly associated with these types of techniques is the possibility of drifting away from the original topics. However, the current research stipulated measures to guard against that which include: constantly referencing the original purpose of inquiry, indicating what sort of data will be collected from the beginning, and building a chain link of evidence which the researcher has adopted as a strategy of data collection (Yin, 2009).

Finally, Cross-case synthesis is normally used to analyse a multiple case study to determine the outcome of the individual cases which are normally studied separately. One of the aims of this research is to determine if the same elements are unique across the indigenous societies. Thus, the current research employed this technique during cross analysis of the cases.

The research combined two types of evidence analysis techniques to help achieve the aim and objectives of this research. The narrative texts were also reduced using themes to enable the researcher link up the data to prepositions as described below.

3.2.5aThematic analysis

In case study research investigators collect stories like grounded theorists do and inductively create conceptual groupings from the data (Jupp 2006). Since the collected texts from interviews are in narrative form, making sense of the data requires a narrative analysis of the collected speech. In view of the provided reasoning, the data collected by this research employed a thematic approach for emphasising the story. According to Jupp (2006) in thematic analysis interest lies in the content of the speech so researchers focus only on the meaning; hence, making use of common sense so that any competent user of the language would also find the same meaning in the story. In other words, to be able to achieve a meaning to the data, the large paragraphs of data will be grouped in the best shortest phrases without losing the sense in the sentence. Although such coding could be made prior to the data collection and analysis (Strauss and Corbin 1998); that was not the strategy pursued by this researcher, instead the researcher followed the understanding that important phrases can still be developed or changed during data analysis or can even be formed from the sentences obtained during data collection (Jupp 2006). This later suggestion was adopted in this research but it was noted to be problematic because of the inconsistency in conceptualisation of the data. This is due to the researcher's inexperience and often the researcher being exposed to the danger of self interpreting the given data (Schwandt, 2001).

The theoretical propositions provided guidance to the questions used during data collection and this made it easy for the researcher to be able to form the themes within the subject's responses. Alongside, the analytical techniques of explanation building such as linking the data to research question was also used for data analysis. A sample example is provided to offer understanding to a reader in Table 3.1.

Table 3.1 Example of Themes used in the data analysis

First level themes	Second level themes	Third level themes	Categories
E-government awareness channels	People	Word of mouth Subjective influences	Social interaction
	Technology type	Reading of print media Listing and observation of radio and TV	Media channels
			Web interactive channels
		Surfing the web	

Furthermore, the uses of themes were considered for the following reasons. First, the research involved cross case analysis and such situations involve theorising across numbers of sub cases and the uses of themes are best suited for that (Jupp 2006). This will help to find common element across the subject's responses to the event being investigated. Therefore, the line of questioning is guided by the researcher's theoretical perspective to improve the process of data conceptualisations and reduction. This is often very effective when such responses are treated as resources for the phenomenon investigation and not as part of the phenomenon understanding. However according to Jupp (2006) this form of data analysis is not always very efficient when emphasis is shifted on the 'way' a story is told.

In this case study care was taken to make sure that all the subjects provided the same replies as the answers are proffered using theoretical prepositions as the guide to questions and answers. Furthermore the researcher provided such codes to help relate the findings to the prepositional statement being used to validate the conceptual framework in chapter 2 figure 2.2. This process of data conceptualising, reducing, elaborating and relating it to prepositional statements is referred to as coding (Strauss and Corbin, 1998). Such process can be used for theory development or preposition testing for validation of conceptual framework. Therefore this research is concerned with the later statement. The forms of themes along with how they are related to the propositions are detailed in Appendix 10 for the reader's reference.

3.3 Summary

A qualitative data approach was adopted and considered to be most suitable for evaluating the impact of the elements of gender and culture on the diffusion of e-government products and services. The reason for this decision was outlined in section 3.1.3 of this chapter. The qualitative data provided the best option to capture and describe the feelings and perceptions of the citizens towards e-government products and services.

This research should be viewed as an initial attempt to investigate such elements within indigenous societies at the micro level in Nigeria. These elements are dynamic and vary from one locality to another. Therefore, the study will adopt a research method that will help to

capture this dynamism of the human attitude that is formed as a result of culture and gender elements.

The next chapter begins by describing the process undertaking in the pilot study and providing a detailed analysis of the process. The analysis was used to refine both data collection techniques and analysis. The result of the findings will be used to refine the conceptual framework provided by the literature review. Finally, it will provide modification to research protocols and improve the discussions.

CHAPTER 4

4. Describing and discussing the pilot study

4.1 Introduction

This chapter provides the empirical results from the pilot study that was used to refine the propositions formulated in this research and to test the research techniques adopted. The findings will be used to refine the questionnaire and the research approach for the case study. Considering the environment, the pilot also provided a test run for the time schedule proposed in the research. Full reasons for undertaking the pilot are explained below.

4.2 Understanding the important reasons for undertaking a pilot study.

According to Yin (2003, 2009), a pilot study will assist a researcher in the organisation of systems of data collection and the refining of the line of questioning. This will eventually provide a means to improve the content of the data and method of collection.

In any case, a pilot study might be represented in two ways: the pre-trial test of procedure on a small scale or just the pre-trial test of a procedure (Polit et al., 2001). Yin (2003, 2009) emphasises the need for a pilot and also warns that a researcher should not allow the result of the pilot to influence the study itself. Although this allowed the researcher to develop a relevant line of questioning, care was taken not to derail from the research protocols. As mentioned in Chapter three, section 3.2 one of the advantages of a pilot is that it provides advance warning of areas where the main research could fail and the feasibility of the scope of the research. Studies have noted that in order for the researcher to determine the appropriate procedures and techniques for data collection, it is necessary to conduct a pilot test first (De Vaus, 1993). For this research, a pilot study was used to test the validity of the questions posed to the participants. Furthermore, it was also used to verify if the scope of the research is achievable within the time frame, determine the number of possible subjects and the procedure of approach that will be used within such an environment. Due to the aforementioned reasons, a pilot study was inevitable.

As described in previous chapters 3, section 3.2.3d local liaison personnel were employed and informal training was conducted for them before every field trip. For the research study there were 6 personnel employed. There were 2 per region and in each of the societies. During the informal training, it was discovered that the theoretical explanation of e-government was not understood, so a more practical terminology needed to be used. These observations necessitated the development and provision of some materials to help improve the research approach:

- It was discovered that the liaison personnel had little or no knowledge of the kind of research being conducted.
- Most of them had yet to hear the term e-government and the ones that knew about it did not understand what it meant.

Due to this discovery, the researcher developed two questionnaires packs to accommodate and improve the knowledge of the liaison personnel: the activity program leaflet and subject

identification questionnaire. These are attached as Appendix 1 and 2 respectively. The researcher also developed a subject response recording booklet to help improve the recording of subjects' responses against each guide questionnaire question. This is also attached as Appendix 3. The activity program leaflet consisted of a letter of introduction, a brief description of the research, its scope and a field instruction manual. This provided the liaison personnel with the necessary research background information. Their expected duties and functions were also detailed in the leaflet. It also contained the manner and procedures involved during fieldwork and how the research was to be conducted. A draft letter verifying and validating this research and signed by the research supervisor was also attached.

Second, as stated above, during informal training with the research liaison personnel (RLP) it was discovered that they were not familiar with some e-government terminology and this contributed to the adoption of more familiar terms to make it more understandable. Some terms were changed to those that citizens used in their daily lives and were selected from the replies obtained from RLPs. For example, e-government services such as 'online birth registration' were phrased as "the use of computers to register new born babies and print their birth certificates."

By conducting the informal training for the research liaison personnel, the researcher was able to develop and modify the subject identification questionnaire to help the RLPs in subject identification by checking (tick mark) the subjects' responses on the subject identification questionnaire.

Finally, during the informal training for the research liaison personnel, the researcher made a major discovery which helped the data collection in this research:
- Because the interview is based on oral speech, writing down subjects' responses in local languages was often not easy and was not coordinated.

This development prompted the researcher to develop a subject response recording booklet which was based and numbered according to the guide questionnaire question numbers. This helped the research liaison personnel (RLP) to match subject responses to a particular guide question during the interview. This streamlined co-ordination for the researcher during field work.

4.3 Research questions and propositions

The initial propositions for the research were grounded on the theoretical background information obtained in Chapter 2. The background literature review provided the theoretical inputs that assisted in the formation of the initial research questions and propositions. The interview questions and the theoretical framework for the pilot study were also formed based on the theoretical knowledge from Chapter two. Therefore, the propositions that were used were linked closely to the theories discussed in Chapter two. The interview guide questions were formed from the literature review based on combinations of Hofstede and Hofstede's (2005) theoretical foundation for cultural aspects and APC's Conceptual Framework, as stated by Morgan et al. (2004) for the gender aspect. The research employs parts of Rogers' (2003) theory of diffusion and Davis',1989TAM model to form the theoretical framework for this study.

A questionnaire was designed with the advice of the researcher's supervisor and another academic expert in the area. A questionnaire based upon the theoretical propositions were

formed and tested by the academic expert team that hailed from England and Nigeria. It was pertinent to include an academic expert from Nigeria who could identify important issues relating to the local context that the academic experts in England could not. This questionnaire was further tested using the RLPs which necessitated the changes made to the data collection method, as previously explained.

The questionnaire was grouped accordingly. The initial part of the questionnaire asked for demographic details and is attached as Appendix 4. The main questionnaire consisted of 36 questions. Questions 1-3 of the questionnaire cover gender division, 4-13 cover gender access to technology, 14-16 cover gender control of resources, 17-18 cover gender and technology, 19-22 cover the effect of gender roles, 23 covers gender inequities in the society, 24-27 cover the power distance effect, 28-32 cover the effects of individualism and collectivism, 33-34 cover uncertainty avoidance and 35-36 address the time orientation effect. The main questionnaire is attached as Appendix 5. It was pertinent to streamline the process of data collection to allow for feasible data analysis. Yin (2009) emphasises the need to streamline the process of data collection, especially when the researcher intends to use a particular data analysis techniques like explanation building.

4.4 Undertaking the pilot case study

As mentioned in Chapter 3 section, a pilot study of this research was undertaken using a snapshot case study design approach; the reasons for this have been offered in section 3.1.5a.

The case study of this research is Nigeria, which is further researched using three embedded case units. This research aims to provide a deeper understanding of the relationship between culture and gender in relation to understanding the effect on the diffusion of e-government products and services from the users' perspective when faced with e-government in Nigeria. Three indigenous ethnic groups (Yoruba, Ibo and Hausa) were selected and form the embedded case units. The reason for the selection of the mentioned indigenous societies has been offered in Chapter 1 (section 1.2). The term, an embedded case study, is defined as a case study containing more than one sub-unit of study (Yin, 2003, 2009). This type of case study will provide an in-depth analysis of the culture and gender relationship with e-government diffusion within a multicultural developing country, Nigeria.

Within each embedded case unit, the subjects were categorised into three groups. This was done to help understand the information flow and exchange within different levels of citizens within the same indigenous society. According to Rogers (2003), in most cases information exchange happens between the same classifications of people. The categorisation of the subjects involved in the research will also help the researcher to maintain an equal representation of subjects with different levels of e-government awareness within the indigenous societies. Further explanations were offered in Chapters 3 (section 3.2.2). Therefore, the classification of subjects was conducted in consideration of e-government usage and awareness. Based on the categorisation, the subjects for the pilot research were selected.

4.4.1 Sample population

This exploratory phase involved self-identification; 12, 8 and 10 subjects were chosen respectively from each indigenous ethnic society: Ibo, Hausa and Yoruba. A total number of

30 subjects were selected. Of the 30 indigenous subjects, 15 were women and the population of genders was carefully selected to balance the views and expressions, as explained in Chapter 3 section 3.2.2. Two academic staff from the researcher's institution and one from the government institution that regulates and monitors e-government development in the country were equally part of the pilot study and reasons for their inclusion have been offered in Chapter 3 section 3.2.1. Finally, experience gained during an informal training section with the RLPs was used to modify data collection, although they were not used during pilot research data analysis. Details of the participants in terms of gender are provided in table 4.1.

Table 4.1: Pilot case study Gender distribution

Gender	*Ibo*	*Yoruba*	*Hausa*	
Female	5	5	5	15
Male	7	5	3	15
Total	12	10	8	30

4.4.2 Data collection

Since this research involved examining gender variables, it was noted that, it was not appropriate or suitable for the researcher to undertake the field research on his own. The areas and ethnic groups used for this research are traditional and some might consider it inappropriate, and in some instances even taboo, for an unknown male to speak to a female subject. To overcome such issues, the researcher recruited some RLPs for the purposes of guidance and, in some cases, assistance in recording the answers of subjects during the conduction of interviews. The RLPs travel and meals expenses were taken care of by the researcher. The RLPs were selected through the researcher identified local networks and also by adhering to some basic criteria, which are offered below. The basic criteria for the selection of RLPs were:

- The ability of the individual to understand the indigenous (local) language. Due to the fact that a large number of subjects are illiterate, the researcher relied on the ability of the RLPs to translate and transcribe the interviews.
- The RLPs must possess the minimum of an undergraduate status and must be fluent in the English language.
- Writing ability was also considered.
- Finally, the RLPs had to have clear and precise knowledge of terrain of the indigenous areas.

The researcher spent up to a fortnight in each of the indigenous areas. Before every session of fieldwork, informal training was normally provided by researcher. Subject response recording booklets were given to the RLPs to help in the recording of subjects' responses during interviews where necessary. They were employed to improve data collection and gathering.

Finally, a Dictaphone and photo camera was used during fieldwork. In some cases, pictorial images were taken to capture all interesting scenarios to improve the understanding of the researcher about the physical environments around most subjects.

4.4.3 Analysis of the sample data.

In the pilot study, 15 women and 15 men were interviewed making a total of 30 subjects. The table 4.2 below displays the demography of the subjects involved in the pilot case study.

Table 4.2: The demographic data of the pilot case study subjects

Gender M/F	Category	Age	Income/pm	Tribe	Education	Occupation
F	3	34/44	10,000	Ibo	GCSE	Petty trading
F	3	17-24	50,000/ 59,000	Ibo	Post Graduate Research	Student
M	2	25-34	Varies	Ibo	GCSE	Non disclosure
F	1	25-34	Over 70,000	Ibo	Degree	Marketer
M	1	24-34	50,000-59,000	Ibo	Degree	Banking
M	1	35-44	Over 70,000	Ibo	Degree	Medical practitioner
M	3	25-34	Less 10,000	Ibo	Diploma	Student
M	3	25-34	Varies	1bo	HND	Unemployed
M	3	55-64	20,000-29,000	Ibo	None	Brick layer
M	2	25-34	10,000-19000	Ibo	Degree	Civil servant
F	2	17-24	10,000	Ibo	Under-Graduate	Student
F	1	17-24	Undisclosed	Ibo	Degree	Student/ marketer
M	3	75-84	20,000-29,000	Yoruba	Others	Business
M	3	65-74	Varies	Yoruba	Others	Bicycle repairer
F	3	25-34	Did not state	Yoruba	Degree	Did not want to state
M	2	17-24	Over 70,000	Yoruba	Under-Graduate	Student
F	1	35-44	Varies	Yoruba	HND	Trading
M	1	17-24	Over 70,000	Yoruba	Degree	Trading
F	1	35-44	40,000-49,000	Yoruba	Diploma	Post primary school Teacher
M	2	25-34	Over 70,000	Yoruba	GCSE	Business man
F	2	17-24	20,000-29,000	Yoruba	Degree	Lawyer
M	1	45-49	Over 70,000	Hausa	Degree	Did not want to sate
M	1	35-44	40,000-49,000	Hausa	Diploma	Civil servant
F	3	17-24	varies	Hausa	Others	Petty trader
F	2	35-44	Over 70,000	Hausa	O'level	Business woman
F	2	25-34	Varies	Hausa	Under-graduate	Student
M	3	25-34	Varies	Hausa	Others	Motorcycle transporter

The subjects' responses are summarised below based on the indigenous ethnic society used as embedded case units in the research.

4.4.3.1 Embedded case study 1: Ethnic society 1: Yoruba

The Yoruba subjects live in Western Nigeria. Of the 10 people interviewed in the area (comprising five women and five men), seven were Yoruba by birth, while the other three were settlers in the area (through local migration). Four women and three of the men had access to computers and/or the Internet, either from home, at work or at an Internet café. Two of the men had not used computers or the Internet. Findings revealed that about 70 percent of the subjects had interacted with government provided online products and services, but did not recognise the process as e-government products or services. For instance, some had engaged with aborted civic registration exercises, online registration for nationally organised examinations, online applications for an international passport or the discontinued digital voters' registration exercise, all of which are the most common forms of e-government products and services with which the citizens were familiar. Also, it was learnt that online voting was planned to be used in the previous national government general elections held in Nigeria in 2007, but was cancelled due to a lack of adequate laws and infrastructure. The above discoveries suggest a high level of citizens' interactions with e-government related activities among the identified subjects within the Yoruba indigenous society in Nigeria.

Diffusion findings: Yoruba

The key element of e-government diffusion being studied in this research is the channels of communication for e-government products and services, which has been explained in Chapters two sections 2.4 and 2.7.1. The methods of data collection and techniques employed in the data analysis have also been discussed in Chapter 3, sections 3.2.4 and 3.2.5.

E-government products and services communication channels

In terms of the channels of communication, many subjects preferred social interaction and believed that the method would increase their interest in the usage of a new innovation like e-government products and services. Few subjects also mentioned other forms of communication as a means of learning e-government, like media channels and the Internet, but they still noted that social interaction is more influential and the most available way to learn new innovations like e-government. Most subjects cited the influence of friends and family as a major factor of the adoption of such innovations.

One of the subjects, a 23 year old commercial motor cyclist with a low educational background, was asked by the researcher how he acquired the mobile phone he uses. He told the researcher that he bought it because his friend has one. When the researcher further enquired what his friend's ownership of mobile phone had to do with his, he replied that, if it wasn't for the fact that his friend bought a mobile phone he would not have struggled to buy one. He told the researcher that it was his friend who convinced him to buy it.

In the above case, the subject was influenced to buy a mobile phone because of the relationship he has with someone that has a phone. The interaction with a phone owner actually induced him to acquire the technology. Such interaction influenced the view of the subject, who eventually saw the need to buy a phone.

Gender division of labour

Gender division of labour contributed immensely to the level of available information, mostly for female subjects. It was noted that gender division of labour among the Yoruba subjects exist. Most of the male subjects believed that computer usage is related to employing a keyboard and women are better suited to this as the use of a keyboard is associated with work roles that women perform e.g. secretarial work. Largely, most female subjects believed that they did not have much use for government information, but were keen on the outputs and economic values of such projects to improve their domestic work.

The researcher asked each subject: which gender would they employ to manage a cyber cafe if they had one? It was noted that, although all subjects believe in qualifications as their main consideration for jobs, most subjects would prefer to employ a male manager if they had a cyber cafe.

One of the subjects, a 45-49 year old female teacher with a diploma, told the researcher that managing a cyber cafe is more technical and men are always better in such jobs than women. When asked why, she said that men are stronger and have better knowledge of repair work than women, so she would need someone who could handle minor damage without incurring the additional cost of consulting an external consultant.

From this response, the subject views technically inclined jobs as being suitable for men only. Such views are noted mostly among subjects from the Yoruba indigenous area.

Furthermore, more subjects expressed the views that what they do also influences what they know and their interests are more suited to such issues involving their duties. However, it was discovered that the male subjects devote more time to listening, reading or obtaining required information than women through both social interaction and media. This behaviour could place the female gender in a weaker position regarding e-government awareness and engagement or leave them dominated by the perception of men.

Gender access to technology

From the subjects' responses, it was noted that no law prohibits any gender access to any form of technology. However, although there is no prevention of access to any communication channel or information, interview responses suggest that the women themselves, particularly married females, planned their lifestyles in such a manner that there would be no need for access to e-government channels of communication. Most female subjects linked everything about the government to politics and power, so showed a lack of interest towards it. This is something that the researcher intends to verify and validate using a larger sample population in future research. It is also noted from the subjects, especially the female gender, that the society frowns on constant female interaction with strangers or males outside their immediate family. Such a social trait could take its toll on women's ability to interact freely within the society.

Thus, in terms of access to technology, women do have access, but other factors, including an active social circle, reliance on husbands to seek required information and make decisions involving government and perceptions of the importance of e-government interventions for their immediate needs, shape their perceptions of e-government.

Gender resources control

Four women worked, and it is surmised that most women subjects from the Yoruba indigenous society control their economic resources (this requires further research). This places them in a relatively strong position in terms of their ability to make decisions regarding channels of communication for e-government products and services. The lack of economic independency of one of the subjects did not in any way interfere in her decision to make use of any of the mediums of communication. All the men control their resources, but may seek their wife's opinion in some cases if they are married.

Gender in technology

Participation in technology development like e-government seems to favour women more, based on the fact that most subjects regard computer operation to be a keyboard based practice which they view as the preserve of females. None of the subjects show resentment towards the makeup of genders in e-government technology. However, most of the female subjects, due to the social stigma attached to constant female interaction with unknown persons within their society, limit their level of involvement in social interaction to within their communities. However, in most cases involving social interaction, the women mostly prefer to speak to a familiar person for such interaction, but this preference was not noted among the male subjects.

One of the female subjects, a 43 year old business woman, told the researcher that she used to lead a program within their community, but was forced to quit due to the fact that she is always travelling and away from the home. She said she almost lost her marriage because she is always seen in the company of club members from other communities. As it stands, she told the researcher that she does not even participate anymore. (It was later discovered that she was the President of the Rotary Club district branch).

The subject lost interest in the program due to the threat to her marriage as result of constant interaction with people who were unfamiliar to her relations and family.

Gender role

The gender role is the most visible from the subjects' responses. While the men do not interfere in womens' access to any medium of communication, the women, especially married woman, will plan their program in order to avoid interference. This is similar to the finding from the gender division of labour.

A 55 year old male subject with a degree working as a public servant was asked if he could access all the identified channels of communication at all times. He told the researcher that it depended on his interests or time, but he does not miss out on any topic being discussed about the community.

Most male subjects express similar views. However, most female subjects cited domestic work as the main hindrance to taking part in such activities, although some said in summary that *if the activities are comfortable for them at their own time they will participate.*

The gender role is related to all the identified gender factors and is difficult to isolate, but for the purposes of the research, it was discovered to influence every aspect of the male and female relationship within the society.

Gender inequity

There are no known laws that disrupt balance in terms of access according to the subjects, but noticeable society norms or views that discriminate against the female gender exist within the traditional society, for example, the case mentioned in the gender in technology paragraph above.

Power distance

Responses to the culture questions in the questionnaire revealed that a significant gap exists between the followers and the leaders, which tends to show a high power distance. As such, traditional kings called the Oba and the religious leaders' views and opinions (e.g. church priests) are highly revered and considered powerful.

On one occasion a 25-34 year old female subject who was an undergraduate said "If my pastor advised that we embark on e-government project, nobody will question it because he is not corrupt and will not do it for selfish reasons; rather for the interest of the church members."

When the researcher enquired to find out if such authorities could ban the usage of any channel of communication within their jurisdiction, one of the subjects, a 36 year old businessman, said "such opinion or view are mostly observed within the community interactions but in terms of what happens inside their private homes personal decision plays a major role in the obedience to the rulers".

It was noted that these leaders seldom consult the citizens, but if they give their consent to any program within the community most community members will obey and respect it. For example, reference was made to such leaders promoting immunisation and HIV/AIDS campaigns and there was some success with the participant level in such programs.

Thus, depending on the views or the inclination of the local kings or, in some cases, religious leaders within the Yoruba community, such opinions can influence subjects' opinions about innovations like e-government products and services.

Collectivism

Hofstede and Hofstede (2005, 2010) note the collectivist nature of the citizens from this area of their study. Most of the subjects from the Yoruba indigenous society express interest towards community based projects and show ultimate obedience to the society norms. The subjects, due to regard for their traditions and fear of punitive measure by the custodians of the traditional laws, form strong tiers in community decisions and rules.

One of the subjects, a 35-44 year old with an A level education, was asked if she prefers community based activities to those that are individual. She told the researcher that she would participate more often in a wider activity of the community than individually doing the same thing. She said that she learns faster and finds strength in combined effort.

Another subject, a 55-64 year old commercial bus driver with minimal education said, in reaction to the same question, that embarking on community projects gives him a sense of belonging and motivation to be among the first to know.

Few subjects express the need to be more individualistic when it comes to decisions about the usage of new innovations like e-government, but said that if the community make it a community activity they will have no option.

Uncertainty avoidance

All the subjects show resentment to unclear variables. The researcher asked the subjects if they will use any form of e-government services like using a computer provided by the government for the registration of the birth of their children if it is available for use and is faster. Some of the subjects agreed to use it, but the majority said they need to understand what the outcome will be.

One subject, a 50 -54 year old hotel manager who holds a degree holder, said that unless she is aware of what the government will use the records for later in life or sure of who has used it and who is telling her about it that she might not be interested in using it.

Similar opinions were common among subjects from the first categories in this area. The majority of subjects from the category, in response to the same question, said they will use such an innovation because they know it is to their benefit, but would like to understand how it functions.

Most subjects from this area show apprehensiveness over how e-government works and its ultimate aim. Although some attributed this attitude to the untrustworthiness of the government in its past actions and policies, others believe that the identity of the person teaching or conducting e-government training within their locality will determine their approach to it.

Short term orientation

The subjects believe that the usefulness of e-government should cater for their immediate needs.

One of the subjects, a 35-44 year old midwife, was asked if she would like to learn about e-government products and services. She said that she cannot leave her hungry children and start to learn something that she is not sure is going to work.

When the researcher asked if she would be interested if it was a collective community project, she said she would not like to get involved unless it was mandatory for everyone and besides in this community they make everything a law that everybody must be part of it.

Such expressions are more frequent among the female subjects, but even some of the male subjects believe that, due to the insincerity of the government, they cannot put much time into such an innovation because it would fail, considering previous examples.

One of the subjects, a 65-74 old coco famer with minimal education, reacted to the above question by asking the researcher to tell him what happened to the previous civic registration they conducted. He told the researcher that it took him almost the whole day to get attended to, but at the end of the day where is the result? He said that he would not participate in such a time consuming programme anymore unless under certain conditions.

The researcher enquired about the conditions under which he would like to participate in such a programme. He said that he would attend if it was a community activity or any member of his family pressured him to do it.

Such replies and similar opinions were expressed by most of the subjects from the Yoruba indigenous society.

When considering the diffusion of e-government products and services, the Yoruba paid attention to word of mouth more than functionality, usability or usefulness when faced with an innovation like e-government. Additionally, time was a matter for consideration to the subjects from the ethnic group. Citizens show anxiety regarding the time it will take to achieve or expect results when they use government products and services because they trust government activities.

4.4.3.2 Embedded case study 2: *Ethnic Society 2:* Ibo

The Ibo ethnic group is located in eastern Nigeria. For this phase, the researcher worked with two RLPs. The researchers interviewed 12 subjects, five of the subjects were women and seven were men. Of the five women, three were engaged gainfully in the labour market and two were students. All except one had a home computer with Internet access.

Diffusion findings: Ibo

As stated before, the key element of e-government diffusion being studied in this research is the channels of communication and an explanation of the channels has already been offered chapter 2, sections 2.4 and 2.7.1. The methods of data collection and techniques employed in the data analysis have already been discussed in Chapter 3, sections 3.2.4 and section 3.2.5.

E-government products and services communication channels

The majority of the Ibo subjects preferred social interaction as their preferred method of e-government communication channel. Most mentioned convenience and comfort as the reasons for such preference. Some subjects also mentioned other forms of communication as a means of learning e-government like media systems and the Internet, but they emphasised that social interaction is more influential and the best way to learn new innovations like e-government.

A subject, a 22 year old university student, told the researcher that she prefers the Internet as the best form of medium to acquire government information. The researcher noticed she was

browsing a Facebook page when they entered and enquired how she knew about Facebook. She said that she joined Facebook because her friends told her about it.

Another subject, a 45-49 year old private farm manager with a High National Diploma, said that such innovations like e-government are something he will need someone he knows to put him through. His first computer experience was with someone he knew and had access to anytime, that's why the person was patient enough to put him through at his own pace/

However, just like the Yoruba indigenous society, some subjects favoured technology usage, but the majority consider social interactions to be crucial to the diffusion of such innovations as e-government products and services.

Gender division of labour

The subjects' responses show that there is consciousness in the society about gender difference, but in practice not many subjects showed regard for it. It was discovered that the views are divergent along literacy levels; while the people with a low level of literacy believe that gender factors are a cultural issue, the literate class believes they are no longer important in this modern day society.

During one of the interview sections with one of the 35-44 year old subjects who is considered to be very literate and a medical practitioner by profession, the researcher asked if gender is a factor of consideration when employing people in his organisation. He said that merit takes priority in his evaluations for job offers.

The researcher enquired if he would like to employ a female as his personal or hospital driver? He said that he does not trust women when it comes to such jobs.

Most of the subjects emphasised the division of labour and believe that some jobs are better done by women and some by men.

Gender access to technology

When determining which of the genders is likely to have more access to e-government technology, or know more about e-government information, it was found that female subjects were in a stronger position than male subjects. In this region, most subjects believe that computer usage is just using a keyboard and women are better suited to this, as the use of a keyboard is associated with work roles that women perform e.g. secretarial work. However, women displayed more interest in more female oriented topics such as fashion than anything else.

A 35-44 year old woman, a university graduate who works as a company receptionist, was asked does she consider knowledge pertaining to government programmes or current affairs important when reading newspapers or watching TV. She replied that she can't remember the last time she read newspapers or watched any such programmes on television aside from reading fashion magazines and watching soap operas.

Most of the female subject responded along the same lines. As such, the use of media systems as a means of the diffusion of e-government, at least among women, would face challenges.

As in the instance of Yoruba, it was found that there was no gender restriction on the accessibility and participation within and of e-government products and services. The women's own choices shaped their use of such mediums. Most female subjects show resentment towards constant interaction with the opposite gender outside of their family members. Men were not noted to experience this drawback in terms of employing any form of channels of communication.

Resource control

According to the married subjects, they need the consent of their partners to engage in some activities or acquire e-government technology gadgets. Most single subjects control their own resources and can acquire any form of technology knowledge or gadgets. It was noted from most subjects that their interest will determine how they might choose to spend their resources. So, like the Yoruba subjects, the Ibo subjects control their resources, but due to marital expectations caution is applied during the spending of those resources.

Gender in technology

Most of the subjects from the Ibo indigenous society showed less interest in the gender combination in e-government delivery.

The researcher asked a 55-64 year old subject who is a civil servant if he would be interested which gender type taught him about e-government products and services. He said he would not mind since he would measure the individual based on quality not on gender.

Such views were expressed by almost all the subjects from the area. The few gender sensitive participants were of the opinion that they would be more comfortable with their own gender in such a practice than the opposite gender.

Most of the subjects were asked about their preferences regarding which personality they would be most comfortable with. All the subjects emphasised that they would prefer someone with whom they are familiar and can have access to at most times.

A 45 years old female subject, a secondary school teacher with a diploma, told the researcher how the government brought some people to teach them how to use the computer in their village and that, after the preliminaries, the people left and did not came back to support them. Because of that, a lot of her friends abandoned the project.

Very few express this view, but all subjects appreciate the involvement of a familiar person in the training for innovations such as e-government.

Gender role

The gender role is noticeable within household jobs, but is not as prevalent within the extended society. Within the household, the male gender occupy a less busy position and this gives them more time to listen to and access more information within the society than female subjects. Most of the subjects assumed a natural obligated role in their household. For example, the female subjects believe that it is their responsibility to take care of the house and children; the male subjects assume the responsibility of providing the needs and food for the household.

One of the subjects, a 65-74 year old carpenter with a minimal level of education, was asked what his reaction would be if his wife decided to buy things like a television without informing him. He said that "of what value is his manhood if he cannot feed his family?" Such statements are common among most male subjects. They believe that taking up such responsibility confers an image of a man.

The gender role seems to influence most of the activities of the female gender and this limits their ability to perform some extra functions. This shows that they will have limited time to interact within the society.

Gender inequity

In the Ibo indigenous society, there are no known visible society norms or observances that discriminate against any gender, unless there are some traditional rituals and rites which are beyond the scope of this research.

The researcher asked one of the subjects, a 25-34 year old petty trader with a diploma degree, if there is any law or custom that prohibits women from the use of such innovations like e-government; for instance, the use of a computer to apply for birth certificates in their local areas. She said she did not know of any law.

Such responses were noted from all subjects. They all said they did not recount or observe any society law that discriminates against any gender access to any technology like e-government within their society.

Having concluded the gender aspect, the research investigated the cultural aspect from the same sample; power distance was the first topic to be considered.

Power distance

The subjects in this region displayed respect for their local king, usually called the 'Igwe', but did not show loyalty to such institutions. This discovery is slightly different from that of the Yoruba indigenous society.

For example, a 50-54 year old businessman with a degree was asked if he would respect the orders of the 'Igwe' to attend a training session for e-government. The subject said "Igwe does not have such powers to give such orders that he will present it to the General Town Union first." He said that the Igwe is just a ceremonial head of tradition (the town union was discovered to be an umbrella organisation of every town within Ibo society).

Another 25-34 year old subject, a student, was asked the same question. He said that the Igwe does not feed him and should not direct him on what to do with his time and money.

According to most subjects, the traditional authority is called the 'Igwe' even when he consults the people, the people still look up to the heads of different smaller clans and heads of family for direction. Unlike the Yoruba, most government activities are not executed through the Igwes, they are executed through the support of town unions which are well know to the people; for example, voters' registration. They also hold the town union's decisions in high esteem.

A 17-24 year old subject who is an undergraduate said "If it is the decision of the town union everybody must obey or else you face the consequences."

The statement within the context it was made shows that the society shows more respect for laws and is afraid of the consequences rather than respect for the traditional rulers. It was also noted that the decision of town unions are always the product of collective consultation within the community.

Collectivism

The character of collectivism was apparent in this ethnic group. Most subjects usually pledge their loyalty to collective decisions of community umbrella organisations like town unions, age grades associations, nuclear families and extended families decisions. They draw their might from their collective decisions.

A 45-49 year old male subject was asked if he would want to learn about e-government if directed by the Igwe or religious leaders. He said that none of these leaders put food on his table; however, if his people come together to agree to such directives then he will take part.

Collectivism was a visible trait; most subjects express an interest towards community based projects and show ultimate obedience to the society's norms. The subjects show due regard for collective decisions and fear of punitive measures forms strong tiers and trust for the community decisions. Some express the need to be more individualistic when it comes to decisions involving the adoption of new innovations like e-government, but still uphold their belief in collective decisions.

Uncertainty avoidance

All the subjects express resentment towards unclear variables. The subjects from this area show apprehensiveness regarding e-government works and the ultimate aim. Although some subjects were interested in how the e-government systems function, more were interested in the result and the security of the process, which portrays a high level of uncertainty avoidance.

One of the subjects, a 25-34 year old graduate, said he would want to know what the future consequences of using the system would be. Such a comment shows resentment towards an unclear innovation process.

Some subjects attributed such apprehension to the untrustworthiness of the government in their past actions and policies; however, such a claim was not investigated because it is outside the scope of the research. Further research is recommended to verify this claim.

Like the Yoruba subjects, most of Ibo subjects believe that the identity of the person teaching or conducting e-government training within their locality is very important, but the collective decisions of the citizens means more to them. Collective decisions towards e-government products and services will improve the perception of the citizens.

Short term orientation

Short term orientation was observed in this society due to the subjects' beliefs that the usefulness of e-government should cater for their immediate needs. Most of the subjects held

the view that such innovation will not work and, due to government insincerity, they cannot spend their time learning how to use such innovation because it will not work. They gave the example of the **civic registration exercise** and said that it failed due to corruption within the organisation in charge of it. Most of the subjects tried to find out the immediate benefit of e-government to them and the members of their family.

One of the subjects, a 25-34 year old university graduate, told the researcher that he would not be interested in any government programme unless they offered him employment.

Finally, the length of time it would take to get a result was discovered to be of very great importance to the subjects from this area. Thus, time orientation might have a significant effect on the diffusion of e-government products and services.

4.4.3.3 Embedded case study 3: Ethnic Society 3: Hausa

The Hausa ethnic group is situated in the northern part of Nigeria. In this area, the research faced several obstacles, the major one being rescheduling of most appointments with the subjects due to civil disturbances as a result of clashes between a religious sect group and the police. Riots broke out as a result of conflict between Islamic fundamentalists known as Boko Haram ("Education is sin") and the police force, which led to the death of over 150 people (www.thisdayonline.com, 2009). Due to this violence, the researcher spent over three weeks waiting for the situation to return to normality. This caused the researcher's timing to run over. Eventually, the researcher conducted the research and the time spent in the region was drastically reduced. Eight subjects were interviewed: three men and five women. Two of the women were economically active and one was a student. Neither working woman had access to computers or the Internet, but the student did. Conversely, two men had access to hardware and the Internet and one did not.

The first observation reflecting the gender divisions within the society arose at the bus park. From the public car park to the hotel, it became apparent that this ethnic group is very gender conscious. Women are not allowed to sit with men when using public means of transport. For instance, the researcher offered his seat to another older female passenger who was standing; she politely declined the offer and retreated to the back of the bus where the other female passengers were seated. During the interviews, two of the female subjects did not allow the researcher to come into their houses. For this reason there was greater reliance upon the only female RLP to conduct the interviews. This was considered to be a huge limitation for this research, but led the researcher to consider involving additional RLPs for the next phases of this research. The next section discusses the research findings.

Diffusion findings: Hausa

The e-government communication channels, as described at the beginning of every embedded pilot case study discussion, are the key element of the diffusion of e-government being studied in this research. An explanation has been offered previously in chapters 2, sections 2.4 and 2.7.1. The same methods of data collection and techniques were employed, as discussed in Chapter three.

E-government products and services communication channels

In terms of the channels of communication, the majority of the subjects preferred social interaction and emphasised that it is the form of communication channel that is most suitable for them and is more available for them to learn how to use e-government products and services.

Just like in the Yoruba and Ibo indigenous societies, the Hausa subjects identified other forms of communication channels as different means by which they can learn e-government; for example, radio, television and the Internet, but they still emphasised that social interaction is more influential and the best way for them to learn new innovations like e-government. All the subjects emphasised that the influence of friends, families and neighbours will impact more than any other channels of communication.

Gender division of labour

It was noted that, among Hausa subjects, the gender division of labour shapes the level of e-government information that females can obtain and determines the types of work that they can perform. Also evident was the fact that, in comparison to men, females were less informed on many general knowledge topics, let alone e-government.

One of the subjects, a 35-44 year old civil servant, told the researcher that "it is not proper for married women to seek information from sources outside their immediate families." This opinion was equally expressed by another subject when the researcher asked if she would like to learn about e-government from an instructor sent by the government.

A 25-34 year old petty trader said "Whatever she wants to know, she will ask her husband if she does not know it." This trait was obviously noted from the subjects' responses. All the men emphasised the gender division of labour and believe it is naturally assigned.

Gender access to technology

Most of the subjects emphasised the gender differences within the society. It was noted that, due to religious observance, the female gender are not allowed to sit openly with their male counterparts in public. The subjects said that such religious observances are treated as laws within their community.

One of the subjects, a 17-24 year old undergraduate, was asked if she could go to any nearby location to learn about e-government. She said that she would be interested in such activities, but it should not be men's affair, once it is also women's affair she will participate.

Another subject, a 45-49 year old public servant, during his response to the above question, told the researcher that he had to buy a computer at home because the daughters could not use the public cyber cafe because most times it is dominated by men.

It was noted that, in order to obtain access to the Internet, subjects require the use of computers, which are mostly located in Internet cafes. A large majority of the Internet (cyber) cafes are used and dominated by men. This makes it very difficult for women to walk into the cafe and make use of the computers. This does pose a barrier to access, as access is restricted by the presence of men.

Resource control

All the subjects remarked that they control their resources, but the married ones also consult their partners concerning expenditure which is considered to be big spending to the direct family. The level of control varies among male and female subjects. The researcher asked each of the male subjects if they could make a spontaneous decision to acquire anything considered to be beneficial to the household. All the married male subjects confirmed their ability to do that.

However, when the same question was put to the married females, they all said that they would not be able to do that without the consent of their husbands.

The researcher then asked if subjects could spend their income towards the acquisition of any form of e-government training. *The men confirmed their ability to do that, but the women still emphasised that they must seek their husband's consent first.*

However, all the subjects were opposed to payment of any kind to use such government services or products unless it is a requirement of the law.

Gender in technology

It was noted from the response of the subjects that the genders of the people involved with the delivery of e-government products and services will determine the perception of the subjects towards interacting with such services.

The researcher asked a 45-49 year old subject, a public servant, if the type of gender matters in the delivering of training about e-government products and services. He said as for him gender means nothing, but most female gender will not attended such training if it is done by a man, but most men can attend such training even if it is dominated by women trainers.

Another subject, a 25-34 year old petty trader, was asked the above question. In her reply she said that she will want a fellow woman as a trainer and let the men teach themselves.

The bus park experience and the replies obtained in terms of access to technology show that there is a strong gender divide within the subjects from the Hausa indigenous society.

Gender role

Gender role is the most visible factor that manifested its effect on access to e-government information, according to the Hausa subjects' responses. All the subjects remarked that men and women have been assigned natural roles and such duties should be observed.

One of the subject, a 45-49 year old public servant, told the researcher that "the duties of child rearing and home management was naturally assigned to women and the duties of providing food and defending the family from external aggressors was also naturally assigned to men. So that is why women give birth and men don't."

Similar responses were noted from other subjects from the Hausa indigenous society. Most male respondents do not face challenges to access any medium of communication, but female respondents' shelve such privileges for family duties.

Gender inequity

It was observed from the responses of the subjects from the Hausa indigenous society that such gender inequity exists. All the subjects confirm the existence of such a trait within their society. It was noted from the subjects that women do have access to such technology, but other factors, including who is leading the training, an inactive social circle, reliance on husbands to seek required information, gender divide and religious observance will all reinforce gender inequity within the community.

Having concluded the gender elements, the cultural dimensions are discussed below.

Power distance

In terms of findings, it was discovered that all the subjects' emphasised the supremacy of their local king, called the 'Emir'.

One subject, a 35-44 year old civil servant, was asked if the Emir consults with them during decision making involving his community. He said that "the Emir does not need to consult anybody, he knows what is good for his people and the people will always listen to him and obey him."

Some of the subjects also mentioned the religious leaders within their community called the 'Imam' as another highly respectable religious authority. The subjects also express high regard and respect for such religious leaders.

The researcher wanted to determine the hierarchy of the leaders from the subjects and what would happen if they gave conflicting directives. A 25-34 year old subject was asked whom the citizens would obey first, the Emir or Imam. The subject told the researcher that "the Imam consults with the Emir on sensitive issues, but can never clash with the Emir and whatever they do or say comes from God, that God cannot say different things to two people."

The reply provided above shows citizens' compliance with traditional or religious figures, which was evident within the region and also apparent from other informal conversations held with other citizens.

Collectivism

The subjects' due regard for the local kings and religious leader's builds strong tiers towards such institutions and are ensures they are more positive towards the dispositions of their leaders. It was also learnt that government activities such as immunisation against polio have been implemented through the 'Emir' and 'Imams' and such initiatives recorded a high turnout and were viewed as successful by the subjects.

The researcher asked the 45-49 year old civil servant a question to establish the dispositions of the subjects towards making e-government initiatives community based projects. He said that no such project can be executed without the consent of the Emir and if he approves such an initiative most people will participate. Most of the subjects express enthusiasm for collective learning for e-government products and services.

Uncertainty avoidance

Uncertainty avoidance was noted among the subjects and they show resentment towards unclear variables. Some of the subjects from this area show apprehensiveness with regard to how e-government works and its ultimate aim.

However, all the subjects believe that the identity of the person teaching or conducting e-government training within their locality will determine their approach to it. Few subjects also mentioned the dispositions of their leaders as a strong determinant or influence on their perception towards innovations like e-government.

One subject, a 45-49 year old civil servant, told the researcher that in his religion what one sees or hears can lead one to sin so most times he has to consult with the Imam for clarity.

Thus, there is a noticeable level of avoidance of unclear variables among the subjects from this area. However, religion seems to pose its uncertainty avoidance on the subject due to religious beliefs, but this opinion is outside the scope of the research so further research will be recommended to investigate such relationships.

Short term orientation

It was learnt that the duration taken to learn how to use such technology was not an issue of importance among Hausa subjects, but the content and the type of gender involved in the distribution of such products and services was pertinent.

The researcher asked one of the subjects, a 25-34 year old, if the length of time it would take to learn how to use e-government would be a matter of concern to him. The subject told the researcher that so long as he is required to learn or put into practice such services, how long it takes should not be a problem.

Such views were expressed by the majority of the subjects. Although some showed resentment towards the time it will take to learn about e-government, they still said that they would abide by the directives of the Emir or Imam. Having concluded the report of the case study findings, the analysis is hereby provided as described in Chapter three.

4.4.4 Pilot case study findings and analysis.

The pilot provided the basic knowledge needed to successfully complete this research. Although the sample size was small, it provided practical experience of the research and was also a source of rich information for the researcher. A total of 30 interviews were conducted, based on the 36 questions of the questionnaire. This totalled 1,080 paragraphs of subjects' responses. The responses were analysed, summarised and sent back to 15 subjects identified during the interview for confirmation of the findings. Those subjects were considered on the basis of their level of literacy (ability to read and write in English) and, in some cases, access to the Internet was also considered. Five subjects were selected from the Yoruba and Ibo communities, while three were selected from the Hausa indigenous subjects. The other two were selected by the researcher through self identification, but are Hausa by origin. The findings were analysed along the 12 theoretical propositions formed in Chapter two using the explanation building technique, as described and defined in Chapter 3, section 3.25. Therefore, this amounts to another 540 paragraphs of subject confirmation responses.

Considering the word count of this research and the volume of data collected, all the text words supporting the explanation building cannot be represented and, since the next chapter involves detailed explanation of the data analysis technique employed, the researcher considers it a duplication to include a detailed process of data analysis in this chapter. However, a few examples will be provided to improve the understanding of the reader.

According to Yin (2009), during the design stage of the case study, the techniques for data analysis will determine the system of data collection. Collection of data was performed with a link to each theoretical proposition, as defined in Chapters 3, section 2.2.4. For example, to collect data about the influence of PD on e-government awareness channels, the researcher developed a set of interview questions to verify this. First, the subject identified the most respected Traditional Authority(s) within the locality. Then, the researcher established how the subject regarded such a power base by a combination of questions, as shown in Appendix 5. It is imperative to note that all the questions in this section are formed to help investigate the relationships between the traditional authorities and their subordinates within their indigenous society and also to investigate such relationship to channels of communication for e-government products and services. An excerpt is provided.

The researcher: what is the most respected traditional authority within your locality?

Subject: *The Emir but the Imam is also respected.*

The researcher: do you think everybody will respect them?

Subject: *Few people might not but they don't have options.*

The researcher: do you think the Emir or the Imam has the authority to stop people from using a TV or computer in their houses and other places?

The subject: *No even if they say that how will they monitor compliance*?

The researcher: is any of them capable of doing the same thing for a government organised rally or campaign? (In this case the researcher will seek an example depending on the subject's answer and the consequences of not obeying such directives).

The subject: *Yes they can ban attendance to such places most times if they did not consider it to be to the interest of the indigenes.*

The researcher: how do they know if it is good for everybody, do they consult the indigenes?

The subject: *They don't need to consult us they already know what is good for the people and besides whom will they consult. Is it me?(he asked, rhetorically).*

Such an interview will continue, depending on the responses of the subjects, or stop if the case of the relationship between e-government awareness channels and PD has been established. It should be noted that such relationships can either be in terms of positive or negative responses to the theoretical proposition in question. Because the question and responses are aligned to investigate the theoretical proposition developed in Chapter 2, sections 2.8.2 and 2.9 which states that Power Distance (PD) will have an influence on e-

government awareness channels, applying the explanation building technique will provide a stance on this issue. According to Yin (2009, p. 141) "*to explain a phenomenon is to stipulate a presumed set of casual link about it or 'how' or 'why' something happened*". Since the research is based on the 'how' question, as stated in Chapter two, the explanation building technique will be based on the same question of 'how' to establish a causal link between the PD and e-government awareness channels. An excerpt from applying explanation building techniques based on the 'how' questioned is offered below.

How does the subject regard the authority's directives? Severe and revered.

How do the identified authorities and subordinates communicate over important issues concerning the community? Mostly no communication and most decisions are taken unilaterally by the authorities.

How will the directive of the traditional authorities affect the three mediums of e-government awareness channels? Such directives can only have impact when the medium of channels of communication involves the physical movement of the subjects in this case social interaction.

The analysis shows that the authorities, whom are the Emir or the Imam, do not consult their subordinates and their directives are treated with severity or are revered. It goes further to show that such directives can only be obeyed when they involve direct contact with the indigenous citizens. Therefore, from the subjects' responses, a high power distance is noted within such an indigenous society and it can only influence social interaction with regard to e-government awareness channels.

However, the subjects' responses were analysed based on the three ethnic indigenous societies and the findings were compared and summarised, as presented in this chapter. In most cases, such techniques occur in narrative forms and, as such, might not be precise, but a good case study is one in which the explanations have reflected some theoretically significant proposition (Yin, 2009).

To conclude this section, the theoretical information provided in Chapters two and three formed the theoretical guide to this research, but could not offer enough knowledge for field experience of this research. Therefore, the next section will discuss the differences and similarities between the theoretical and practical work of this research. This analysis will be compared to the conceptual framework. A discussion of the field research findings, theoretical and practical work is thus offered below.

4.4.5 Field study findings

The theoretical explanation of e-government did not go down well with the subjects. The researcher had to adopt a simplified terminology to make it understandable to the subjects. For example: questions like 'Have the subject used e-government services?' was rephrased to 'Have the subjects used a computer or similar device to do a task that concerns the government?' These changes helped the researcher to realise that, in contrast to the theoretical explanations, most of the subjects who claim ignorance of e-government usage or awareness have actually come across the products and services in one way or another. This prompted re-identification of subjects, because the categorisation of some already identified

subjects changed and more new ones were identified and some dropped. This affected the time spent during the first field research with the Yoruba indigenous society.

Second, the researcher realised that, in an attempt to make the questions understandable, some categories found them to be patronising and often showed resentment towards the interview. This prompted the rephrasing of some questions to take care of all levels. This initially was considered a limitation, but expert opinion was sought to improve this.

Furthermore, the pilot provided an understanding of the different aspects of cultural impacts on e-government awareness channels, perception and intention to use e-government. The attitude and behaviour of the distributors of e-government could also influence the perception and intention of the citizens to adopt e-government. In one of the interview sections, one of the respondents gave examples of the attitude of a trainer which made her abandon a training section.

During one of the interviews the researcher asked a 35-44 year old petty trader if she would want to learn about the use of computers to perform some government related functions. She said, "Yes but let it not be like the other time, when they brought computer to our village to teach us how to use it. The so called teachers started discriminating and brought in nepotism to the process. To get the training became an issue of who you know. Meanwhile we were told that it will help stop corruption, what kind of corruption will it stop where the trainer is corrupt herself. Will the computer not help them perpetuate their evil act?"

Such remark shows that the behaviour and attitude of the personnel distributing e-government services could influence the subjects' perception and intention to adopt such technology. This was noted as a new discovery within the research scope and can be recommended for further research.

4.4.6 Pilot case study analysis

To refresh the mind of the reader, this pilot was conducted to provide insights into the influence of culture and gender on an aspect of e-government diffusion in three ethnic groups in Nigeria. It was discovered that, even within the same country, some pre-formed propositions could have an impact upon one indigenous society, but have little or no influence on the others. This had diverse manifestations in the three ethnic groups.

First, the channels of communication of e-government were identified in the indigenous areas by the subjects to be: mass media channels, Internet based channels and social interactions. Mass media, as described in this research, comprises all of the electronic and print media like television, radio, newspapers, posters. Internet based channels are the use of emails, Internet based social networks, web information. Finally, social interaction involves person to person, social clubs, society norms and engagements.

When examining e-government awareness channels, the researcher discovered that most of the subjects in all three indigenous societies prefer social interaction as a means of information exchange and find it to be the most effective. Although some identified other means, all the subjects emphasised the effectiveness of social interaction as a means of communication within the different societies. It was also discovered that social interaction is the only method of e-government channel of communication that is available to all categories

of users as, described in Chapters two and three. It was noted that all the subjects have employed social interaction to adopt one innovation or another and thanks to useful information provided by their community leaders or friends. Thus, from the above discovery, social interaction was noted to be a common channel of communication among the subjects of the three indigenous societies used as the three embedded case study areas. However, other communication channels were mentioned as e-government awareness channels, but judging by subjects' responses, such means were limited and are not always available for all categories of citizens under study. Therefore, social interaction is the only consistent means available for communication amongst the three categories of citizens.

Secondly, the gender division of labour was noted to be prevalent within all three ethnic groups, but the extent to which this impacts on women's decision-making varies. The researcher recommends further research using the quantitative approach to examine this fact in detail. In any case, it was noted from the subjects that gender division of labour influences women's choice of communication channels. Due to a strong attachment to women's natural roles, females tend to have limited time to access communication channels and, even when they do, society frowns at the frequency with which they get involved with such media and interact with people outside their families. This was noted to have influenced female perception towards using their preferred method of channel of communication. The male subjects seem to have unrestricted access to such media; however, the society gender distribution of jobs makes them view computer operations as a female job e.g. key board operations is viewed as being a typist or secretary's role which are associated with females. The gender division of labour and gender role traits will influence the level of social interaction among the subjects from the three indigenous societies. The researcher also noted that most female subjects seek to discover how the system will support them in their role as mothers, because they evaluate such innovations based on their present circumstances. Thus, the usefulness of the system may be measured by support for women's roles for the married subjects. A gender role will thus influence perceived usefulness for married female subjects.

Thirdly, the Hausa have a gender divide so that women will find it difficult to use public places to access e-government and obtain information of interest to them. The greater the divide between the status of men and women among the Hausa, the greater will it influence social interaction, which is their preferred means of diffusion of e-government products and services. These aspects, no doubt, will influence perceptions of women in that region and their intentions to adopt e-government, which will be slightly different from that of the Yoruba or Ibos. Whilst the greater independence demonstrated by the Ibo and Yoruba women suggest that they can seek information for themselves, the importance of technology to support the natural role of women, the lack of availability of e-government support staff at times convenient to every gender and social empowerment are some of the factors noted to shape women's level of social interaction when faced with the adoption of innovations like e-government products and services. The religious traditions of the Hausa dictate that women seek information from their husband and family members. Hindered access to technology imposed by gender trait of the societies will influence social interaction.

Fourthly, considering the gender resource control element, although Yoruba and Ibo female subjects tend to have more freedom in terms of control of resources, in most cases the decision to acquire such skills or purchase such communication gadgets require the approval of the husband for most of the married women. The Hausa women, due to their religion, exercise less freedom in resource control. However, no correlation was established between

control of resources and social interactions with regard to e-government communication channels.

The fifth element, gender in technology, was noted to influence subjects from the Hausa indigenous society. The identity and status of the trainers is considered to be very important by the subjects from this area. Apart from the influence of the gender divide within the region, the emphasis was also based on trust because of religious observance. Judging by the responses from the Yoruba and Ibo subjects, gender and technology have no relationships on a social interaction level. However, the majority of the subjects from the Yoruba and Ibo indigenous community emphasised their preference for someone they know as trainers to boost confidence. This type of response was noted to be common among the subjects of the three indigenous societies. Thus, gender in e-government delivery channels will influence the level of social interaction among Hausa subjects, but the familiarity with the e-government trainers will influence social interaction among the three indigenous societies' subjects.

The final gender element, the inequity imposed by religious observance, was noted among the Hausa subjects to influence social interactions.

Some subjects from the Hausa indigenous society expressed the opinion that "a man and a woman are not supposed to be on the same level of knowledge especially if they are husband and wife."

Although gender inequity was not noted among the subjects from Yoruba and Ibo indigenous societies, the social stigma attached to females' constant public appearance will discourage most female subjects from attending training or social gatherings where such innovation could be discussed and practiced. Hence, such socially imposed gender inequity will influence the level of social interaction among Yoruba and Ibo female subjects.

Hofstede and Hofstede (2005) found that power distance was high within the sub Saharan region of Africa and Nigeria is a country within that region. PD was exhibited differently among the subjects from the three indigenous societies. For example, among the Hausa and Yoruba subjects, the traditional and religious leaders seemed to be revered and their opinions held high, whilst within the Ibo subjects, family members were given great respect and collective decisions are held in high esteem. Among the Ibo subjects, power distance was not significant, to the extent that local and religious leaders were not given high regard like in other indigenous societies. The obvious power distance, as noted from the subjects from Yoruba and Hausa indigenous society, can influence social interaction, depending on the views of the traditional rulers or the religious leaders. However, this was not noted among the Ibo subjects, who believe more in their collective decisions as families or a community.

Hofstede and Hofstede (2005) also found a collectivist attitude within the country. The subjects from the three indigenous societies displayed this characteristic. Of the three ethnic societies, the Ibo subjects displayed more individualism in opinion involving any form of social interaction, but generally they were all collectivist in nature. The subjects show more interest in community based projects where members of their community are in charge and also display a wiliness to participate. Collective agreement regarding the opinion of the traditional or religious leaders, for subjects from Yoruba and Hausa, will influence social interaction as an e-government channel of communication among the subjects. In contrast,

the collective decision of communities in the Ibo region will influence social interaction among subjects.

The third cultural dimension, UA, is a common characteristic within the three ethnic subjects. All the subjects from the three indigenous society displayed apprehension towards e-government technology. From their responses, anxiety was noted about the use of the data to be captured and the purpose it will be used for. Concern over the workability of such systems, as evident from their past experience, was obvious. There were also fears that the anticipated negative character of the government staff in their present pen and paper operation could possibly be transferred to such a system. These factors were mentioned by the subjects and were noted to induce UA among them. However, all the subjects agreed with the fact that the introduction of a familiar user or trainer will improve their level of interaction with the system. Thus, the introduction of a familiar trainer for the subjects will reduce UA of e-government products and services.

The final cultural dimension, short term orientation, was initially noted to have the potential to militate against the perception of and intention to adopt e-government among Yoruba and Ibo subjects, but was not noted as a barrier among the Hausa subjects. However, probably due to social interaction, which is the most preferred channel of communication within the three indigenous societies, such cultural traits are considered to be of low importance among the subjects from the indigenous areas, when faced with a collective decision for the Ibo subjects or the directives of the traditional or religious leaders for Hausa and Yoruba. Thus, analysis shows that social interaction will reduce the influence of short time orientation on the subjects.

In conclusion to the pilot study findings analysis, the interaction between culture and gender in this study shows ways in which culture can underpin gender and vice versa in e-government diffusion. Hausa religious traditions indicate that the reverence given to religious leaders would be useful if these leaders were employed as the communication channels for engagement in any e-government awareness programmes, but gendered norms means that, at the more practical information giving and training levels, women would have to be trained to train other women.

To conclude, a proper understanding of e-government research would have been both problematic and difficult without this exploratory phase of the research. By completing this phase, valuable insight into the application of theory in practice for such complex topics and in a different context to where the theories were developed, was obtained.

The study's original theoretical propositions and framework were considered and, contrary to the initial suggestion, some changes and modifications were made to them. Future directions of this study now include extending the sample size of this research and spending more time to obtain a deeper and better perspective of this exploration.

4.5 Refining the conceptual framework and the propositions

As mentioned in Chapter two, awareness of e-government channels was discovered to be very difficult to measure due to the fact that the attitude towards some media of communication could not be monitored based on the available time for the completion of this research. Some subjects might claim to have access to a particular type of medium of

communication just to boost affluence, but because the place of interview is in another location it becomes impossible to confirm such claims.

For instance, a subject who is a commercial bus driver claimed that his best form of gathering information about government programmes is through the television, which was classified as media channels by this research. However, during the period of the interview, he claimed that he is not interested in any issue that concerns the government because he cannot be part of a government that is careless about its citizens. He said that they have not supplied electricity for almost six months and he can't even afford an electric generator set because of the price. When the researcher pressed to find out how he knew about a government programme on voters' registration, he said that everybody knew about it because they used to discuss issues like that in the motor park where he works. Similar claims were discovered, mostly among some of the subjects whose businesses are far away from their homes. In most cases, their best form of gathering information would not be the available medium or the medium they believed they preferred.

Secondly, among e-government channels, as identified by the subjects, only one aspect of communication was found to be consistent within the three categories and common among all the dimensions used to study culture and gender in this research. Social interaction was identified as a constant and common channel of communication within all the indigenous societies. Therefore, e-government awareness channels will be replaced with a social interaction channel of communication.

It was also discovered that the effects of culture and gender are largely nonexistent in media and Internet based medium of communication because the decisions are mostly personal, especially if the means of resources to provide such media are available. Also, it was discovered that different categories of subjects involved made it difficult because contact time for most preferred media of e-government awareness channels could not be monitored due to the fact that the research method adopted was a snap shot case study method.

The theoretical propositions P1 to P2 were discovered to be dependent on the theoretical propositions of P3 to P12. Thus, the empirical findings in support of the dependent propositions come from the analytical findings of the independent theoretical proposition. The pilot study provided the discovery that social interaction will influence uncertainty avoidance and short term orientation when an aspect of e-government awareness channel is being considered within the indigenous societies of the case study; hence, the refining of P11 and P12. All the above facts lead to the rearrangement of the propositional numbers and changes in the conceptual framework that will be used to study the main case study, which will involve more subjects.

Finally, gender role was discovered to have an influence on the perceived usefulness of e-government products and services; therefore, a theoretical proposition was formed to accommodate this view. As a result of the above discoveries, the propositions were rearranged and revised to enable the research to reach the final conclusion with the independent variables before determining their influence on intention towards and perceived usefulness of e-government.

4.5.1 The propositions as a result of the pilot study.

Furthermore, in order to study culture and gender, the propositions listed below were altered to reflect the findings of the pilot study. This was done to provide clarity to this research and to make it easy for the reader to understand the significant changes in the conceptual framework of this research, which will be used to study culture and gender in the main case study.

P1: Gender division of labour will influence social interaction as an e-government awareness channel

P2: Gender access will influence social interaction as an e-government awareness channel

P3: Resource control will not influence social interaction as an e-government awareness channel

P4: Gender in technology will influence social interaction as an e-government awareness channel

P5: Gender role will influence social interaction as an e-government awareness channel

P6: Gender role will influence the perceived usefulness of e-government products and services

P7: Gender inequity will influence social interaction as an e-government awareness channel

P8: High power distance will influence social interaction as an e-government awareness channel

P9: Collectivism will influence social interaction as an e-government awareness channel

P10: Social interaction, as an e-government awareness channel, will influence uncertainty avoidance

P11: Social interaction, as an e-government awareness channel, will influence short term orientation

Having defined the propositions used in the study for the independent variables, the propositional constructs for the dependent variables are stated below.

P12: Social interaction, as an e-government awareness channel, will influence intention to adopt e-government

P13: Social interaction, as an e-government awareness channel, will influence perceived usefulness

Having discussed the theoretical propositions of this study, as modified due to the pilot case study findings, the research will review the framework for the impact of gender and culture on e-government diffusion in a developing country, namely Nigeria, based on the same findings as shown below.

4.5.2 Discussing the conceptual framework

The cultural and gender elements were studied using identifiable variables. After the analysis of the findings, minor adjustments were made to the conceptual framework as seen in Figure 4.1 below.

As stated earlier, social interaction was found to have moderating effect on the uncertainty avoidance noted among the subjects. Thus, this fact was represented in the revised conceptual framework using a reversed arrow.

Furthermore, social interaction was also noted to have a moderating effect on the short term orientation noted among the subjects. This was also indicated with the reversed arrow indicated on the framework, as shown below.

Finally, gender role was noted to have an effect on the citizens' perception of the usefulness of e-government products and services, so this prompted the separation of gender variables from culture so this fact could be represented; hence, the extension of an arrow from gender to perceived usefulness of e-government products and services.
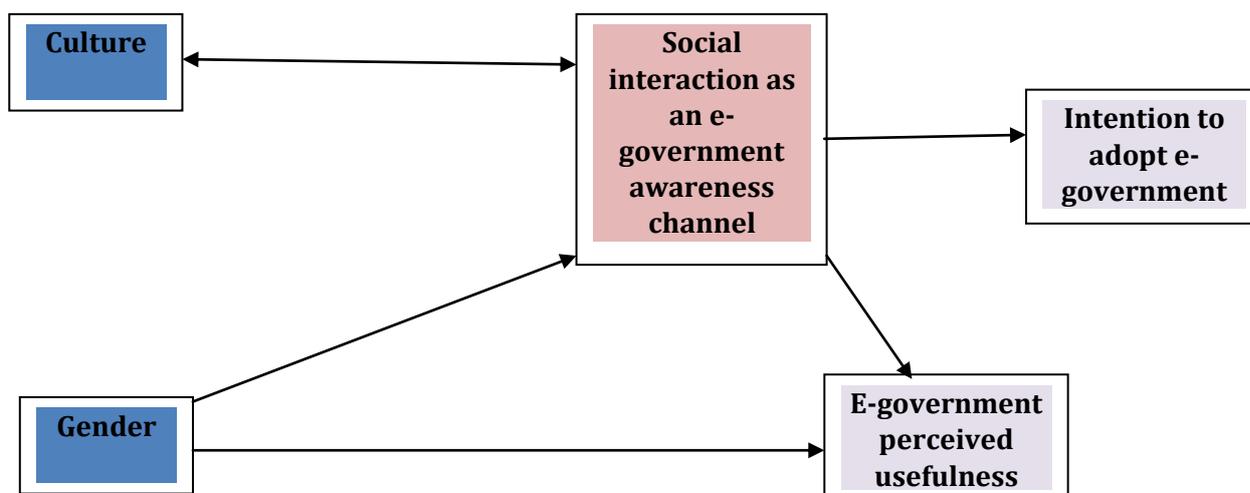
Figure 4.1: The conceptual framework after the pilot.

4.6 Summary

The results from the pilot were reflected within the conceptual framework and the decisions were explained. The pilot assisted in the refining of the propositions and conceptual framework of this research. The following chapter will draw on the pilot study and utilise its results to refine the questions, the research procedures of the actual case study and obtain a result that will validate the conceptual framework.

CHAPTER 5

5. Describing and discussing the final case study

5.1 Introduction

The previous chapter described the pilot case study and validation of process and procedure for the purpose of data collection in order to examine the impact of culture and gender on e-government diffusion. Chapter three provided a discussion and justification of the data collection and analysis methods. This chapter presents the findings obtained from the case study that was conducted to examine the impact of culture and gender on the diffusion of e-government products and services from the citizen centric perspective. The findings will be used to provide answers to the research questions. They will also be used to validate the propositions. Using the findings of this chapter, there will then be an empirical review of the conceptual framework described in Chapter four. This chapter will also provide a discussion on the research findings.

5.2 The area of the case study

To offer insights into the influence of culture and gender on e-government diffusion, this research examines their influences on one channel of e-government communication, namely social interaction, which is a means that has been previously identified in pilot case findings as the most available and most frequently used method of information exchange about government programmes. The content of the information being exchanged amongst citizens can influence the perceptions and behavioural intention of those citizens towards adopting e-government products and services within the three indigenous ethnic societies of this study. Such findings were also evident in Rogers' (2003) research of boiling water in Peru and the work of Taylor and Todd (1995) and Venkatesh and Brown (2001). From the pilot findings, it was learnt that social interaction is the most common and most available channel of e-government awareness. Secondly, culture and gender were noted to impact more on social interaction than other identified channels of communication by the research. Finally, it was also noted that social interaction can affect citizens' perceptions and influence their intention towards e-government products and services. Therefore, in order to obtain an in-depth analysis of the research findings, the sample size was extended to 180 subjects to provide enough data for proper validation of the findings. The subjects from the three indigenous societies, Yoruba, Ibo and Hausa, were used as embedded case studies within the case study of Nigeria.

5.3 The case study

In Chapter 3, section 3.1.5 it was shown that a case study will be applied to this research in two ways, namely as a unit of study and also as a research method. After completing the pilot case study, the researcher modified the propositions and refined the conceptual framework. The questionnaire and the system of administering the questions were also modified. The reasons for the changes were explained in Chapter 4, section 4.4.5. The researcher first identified the type of services relevant to the subjects and formatted the questions using such services; this was done to improve the understanding of the subjects about e-government

products and services. Moreover, it also familiarised the subjects with the purpose of the research, which was noted to provide some level of comfort among some subjects. The researcher also improved on the usage of the observational method as another means of gathering information. The theoretical propositions were refined and improved upon based on the findings of the pilot case study. Finally, the research included all the theoretical propositions formed in Chapter 2, sections 2.8.2 and 2.9 against the backdrop of a theoretical review that suggested that some element of culture used in this study does not have an impact on e-government diffusion (Warkentin et al., 2000). The revised questionnaire is illustrated in Appendix 6.

5.3.1 Undertaking the case study.

The study discussed the research method in Chapter three and has used the pilot to test the method. Therefore, the research method was maintained and the categorisations of the subjects were still based on the categories used during the pilot case study as shown in chapter 3, section 3.2.2. In Chapter four, modification was discussed and applied to this stage of the research.

5.3.1a Sample population

The total sample size of the case study was initially scheduled to be 180 subjects comprising 60 subjects from each of the three indigenous societies, but 153 were finally interviewed. As described in chapter 3, section 3.2.2. each of the indigenous ethnic societies was treated as an embedded case study. In embedded case studies, data is analysed separately, but compared together. Therefore, the replies of the subjects were analysed and reported separately and a cross case analysis was drawn as the final report.

5.3.1b Analysis of sample data

In the case study, 76 female and 77 males were interviewed, making a total 153 subjects. Table 4 below displays the gender combination of the subjects in the diverse indigenous societies.

Table 5:1 Gender distribution table

Gender	Ibo	Yoruba	Hausa	Total
Female	31	27	18	76
Male	29	30	18	77
Total	60	57	36	153

A demographic profile of the subjects used in this research is provided below in Table 5.

Table 5:2 Demographic profiles

Age Ranges	Yoruba		Ibo		Hausa		Total	%
	Female	Male	Female	Male	Female	Male		ratio
17-24	3	3	6	5	3	3	23	15.03%
25-34	4	4	5	6	4	2	25	16.34%
35-44	4	5	4	6	5	2	26	16.99%
45-49	5	4	6	3	2	4	24	15.67%
50-54	4	5	3	4	2	0	18	11.74%
55-64	2	4	4	2	2	3	17	11.11%
65-74	3	2	2	2	0	1	10	6.54%
75- 84	1	3	1	1	0	3	9	5.88%
Over 85	1	0	0	0	0	0	1	0.65%
Total	27	30	31	29	18	18	153	100% Approx.

As stated in previous chapters, care was taken to maintain an equal balance of gender due to the fact that gender is a factor being considered within this research. The educational levels of the subjects are also stated below in Table 6. This is to provide an insight into the literacy level of the research subjects. Further research is required to determine if education levels have an impact on the communication choice of the subjects. However, this is not within the scope of this study.

Table 5.3: Literacy level

Education level	Yoruba		Ibo		Hausa		Total	%
	Female	Male	Female	Male	Female	Male		ratio
GCSE	0	1	0	0	0	0	1	.65%
A Levels	1	0	1	1	0	1	4	2.61%
GNVQ/Diploma	4	7	7	6	3	1	28	18.30%
Degree	15	12	16	12	11	6	72	47.06%

Postgraduate. /Research	0	4	1	3	0	1	**9**	**5.88%**
Others	7	6	6	7	4	9	**39**	**25.49%**
Total	27	30	31	29	18	18	**153**	100% Approx.

It can be seen from the above demographics table that the age range of the subjects was almost evenly distributed and this was done to represent a range of adults within each indigenous society. Numbers of literate participants were slightly higher due to the categorisation of the subjects into three groups, shown in chapter 3, figure 3.2; therefore, there is not considerable variation amongst the subjects.

5.3.1c Data collection

As in the pilot study, the precaution of gender balance was maintained. The research liaisons were used to support the researchers' note taking and to provide additional support for the translation and transcribing of subjects' responses, where applicable. As usual, Dictaphones and photo cameras were also used during the field study.

The subjects' responses are summarised below, based on the indigenous ethnic society used as embedded case units in the research.

5.3.2 Embedded Case Study 1: Ethnic Society 1: Yoruba.

Yoruba indigenous ethnic subjects are mostly located in the western part of the country and a brief explanation of the area has been offered in chapter1 section 1.2. A total of 60 subjects were originally identified and contacted by the RLPs, but 57 were eventually interviewed by the researcher. The shortfall was as a result of the unavailability of three subjects; due to the constraints of time, replacements could not be accommodated. The 57 subjects comprised 27 females and 30 males. Their responses are explained further in detail in the paragraphs below.

5.3.2.1 Findings from the subjects of the Yoruba ethnic society

From the discussion of the research, the researcher investigated the relationship between four identified cultural dimensions and six gender elements on e-government communication channels. The elements were investigated by posing questions and some replies are shown below. Each of the elements was treated as a separate paragraph, as described below.

5.3.2.1a E-government channels of communications

E-government communication channels were previously indentified within the indigenous societies as: media, social interaction and the Internet. During the interviews, it was discovered that about 80% of the subjects preferred social interaction as a form of channel of communication when learning of an innovation such as e-government which comes out to 46 subjects. While 5 prefers internet the rest prefers media channels. Further analysis revealed that, amongst all the subjects, the preferred means of communication was social interaction

and this was indicated to be a very persuasive means for learning about e-government products and services. The figure 5.1 below shows the Yoruba subjects preference chart for e-government awareness.
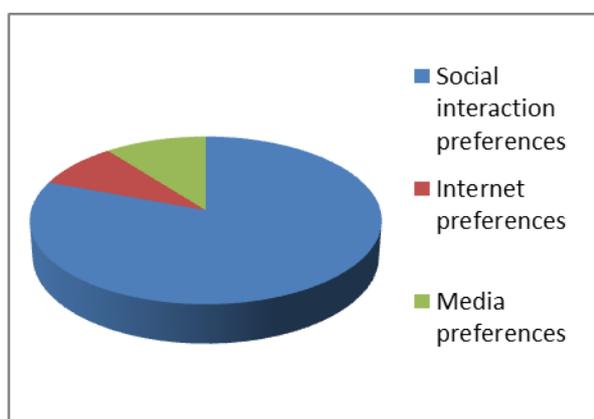
Figure 5.1: Yoruba subjects preference chart for e-government awareness channels

Most of the subjects that preferred other means of communication such as the Internet and media channels were asked if they would be more inclined to use e-government products and services if such services or products were introduced to them by families or friends. Most of them replied 'yes'.

A 45-49 year old subject, a degree holder and civil servant, told the researcher that he actually acquired a computer and the Internet because his children came home one day and told him how the parents of a family friend they visited bought a computer and installed the Internet and everybody in their house was happy. He said that at that time he did not know how to use a computer, but that information provided by one of his children triggered his interest and right now he can comfortably say he is computer literate.

Most subjects from this indigenous society mentioned that they have learnt about the government programmes in which they participated through someone they know or their colleagues. Such responses were noted to be common amongst the Yoruba subjects. This confirms the findings of the pilot study that discovered social interaction amongst citizens to be the most popular and persuasive communication channel that can be used for the diffusion of e-government products and services amongst the citizens.

5.3.2.1b Gender distribution of labour

41 of the 57 subjects affirmed the gender distribution of labour within the Yoruba indigenous society. This show 82% of the subjects recognised this trait. Judging by the responses of the subjects of the Yoruba indigenous society, there is a noticeable gender division of labour, but few subjects expressed contrary opinions about the issue of gender division of labour. A few expressed a different opinion, mostly females who believed that it existed in the past, but is less significant now. This shows that society is conscious of the gender division of labour.

Although some of the male subjects displayed a low regard for the gender division of labour, it was still acknowledged that gender influences what one knows.

Each of the subjects was asked if they would consider gender when employing someone to manage or operate a place like a cyber cafe if they owned one. Almost all the subjects preferred a male for such positions, even the subjects who mentioned qualifications and merit as a criteria for such consideration. Knowledge of and understanding of technical issues was also cited as another reason they might prefer a man. It was felt that they believe men had these skills, which was a reason for the subjects' choice of men over women to manage Internet (cyber) cafes.

Gender distribution of labour was noted from the Yoruba subjects' responses. In this indigenous ethnic society, the type of job that one has was also noted to significantly influence what one knows. Statistically, the number of subjects that fall within category 1, as explained in Chapter 3, section3.2.2 was dominated by men and supported the findings that the society's distribution of labour favoured men, which could place them in a better position when learning about e-government.

One of the subjects, a 65-70 year old with 'A' level qualifications, was asked by the researcher if any gender can undertake any sort of work within his community. He said that "anybody can still take up anything depending on the choice". Furthermore, the researcher asked if what he does as a profession influences what he knows about the government. He said "most times your job can make you ignorant of other things. Look at me! If I had gotten a white collar job when my mates were applying maybe I would have known what you are talking about".

It was also noted that subjects believed that computer usage is related to employing a keyboard and women are better suited to this, as keyboard usage is associated with work roles that women perform e.g. secretarial work. This ordinarily should have placed women in a relatively strong position to adopt e-government, but the results are skewed by some noted traits that will be discussed later.

5.3.2.1c Access to technology

None of the subjects expressed the view that any known barriers exist when accessing any form of identified channels of communication within their communities. It was noted that there is free access to all identified types of channels of communication within the subjects' different communities in the Yoruba indigenous society. However, some of the subjects did not indicate any preference regarding any means of being informed about e-government products and services. Moreover, some subjects made references to their role in the house, which indirectly referred to gender being a barrier to accessing their desired e-government channels of communication.

For example, a 45- 49 year old teacher, a degree holder, identified media channel 'TV' as the best means of being informed about any government programme; the researcher asked if she had access to her preferred communication channel regularly. She said "no" and that most of the time her role as a mother can distort her programme or ability to pay attention and learn about something. In the course of the interview, she told the researcher that she

planned to go to market tomorrow, but her little son just told her that tomorrow is sanitation day. She told the researcher that, if not for the boy, she would not have known. She said he heard it over the TV and told me about it and it has been on the news, but she did not hear it because she was cooking.

From the responses of all the subjects from the Yoruba indigenous society, there are no known policies or laws that prohibit access to any channels of communication. However, it was noted that the natural duties of women, personal interests and socially imposed restrictions limit women's involvement in social interaction activities.

5.3.2.1d Control of resources

The control of resources could not be directly linked to social interaction as an e-government awareness channel. Both genders of the Yoruba subjects have total control over how they spend their resources. However, cultural barriers imposed by attitude towards marriage poses a limitation on how these resources are spent. This is particularly true in the case of married couples, but unmarried subjects are more independent when considering their spending abilities.

One of the 50- 54 year old subjects with a diploma working as a hairdresser was asked if she could acquire hardware for any of the research identified e-government communication channels or participate in any form of e-government products and services training if she so desired. She told the researcher that she does not see why she should buy those things (communication gadget) when her husband is still alive. She said that in terms of attending things like training she will always consult her husband when it comes to issues that will make her stay away from home. The former comment was common amongst the married female genders within the region and the latter comment was frequently noted among married couples.

From the research, it can be deduced that most subjects tend to have control of their resources, but most decisions to acquire computer training or to purchase communication hardware. are mostly discussed by both partners. This was especially true in the case of married women or a person with responsibilities (someone like a parent) for dependent subjects. Some of the single independent subjects emphasised personal decisions to acquire such things. This suggests that there is no relationship between the control of resources and the use of social interaction as a communication channel for e-government products and services.

5.3.21e Gender and technology

Most of the subjects did not display any sign of resentment towards the domination of any gender in the production or supply of e-government products and services. Due to the visible gender division of labour within the society, participation in e-government positions seemed to favour women. This is based on the fact that computer keyboard operation is viewed by most subjects within the society as a typing job, a secretary's job which is associated more with women.

From the subjects' responses, it was discovered that they preferred a familiar trainer than an unfamiliar one. The researcher asked each subject if the gender of the personnel providing or supporting the use of e-government products and services mattered to him or her or would it in any way discourage his or her interest. Most of the subjects, both men and women, told the researcher that the gender does not matter, but the experience of a person does matter.

One of the subjects, a 65-74 year old pensioner, told the researcher that she does not care if it is a woman or a man, but would prefer a woman like her if given an option; in any case, so long as the trainer knows what he or she is doing, she would be willing to participate, but care should be taken to bring someone that will feel committed to the project. She gave an example and noted that "during one of the government immunisation campaigns the people that came to this community never cared about anything and it discouraged a lot of people from participating in the programme, because even for simple things like abscesses they spoke angrily to the people when the complained, so people were disgusted. If they had been from this community there would be no way they would have been talking to people like that."

Another subject, a 50-54 year old postgraduate degree holder who is a farm manager, was asked the same question and told the researcher that the gender type is not important to him but he would like someone he knows and feels free with so that he will be free to ask anything.

However, the issue of familiarity applies to the identity of the trainers and not the type of gender. Most of the subjects emphasised their preference for a well known trainer, not the type of gender, but did not put that forward as a condition before they will participate in any form of social interaction involving e-government products and services.

5.3.2.1f Gender role

From the subjects' responses, the gender role was noted to be a strong factor influencing social interaction due to the regard for the natural functions of genders.

One of the subjects, a 35-44 year old marketing manager with a degree, was asked if the role of being a mother interferes with any of her chosen patterns of learning about government activities. She made an example of our interview environment and said that she cannot be watching TV when her children are hungry or need assistance. She said that the researcher should take note of how her children have been interrupting the interview. yet when the researcher interviewed their father, none of them will interrupt to complain of one thing or another..

It was noted from the subjects' responses that the men do not suffer much interference as a result of their gender roles, but the women, especially married ones, do and will have to plan their program in advance in order to avoid interference. Most of the subjects prefer social interaction as their best means of learning about e-government, but the society is conscious of gender roles and duties and this limits the available time and movement of most women.

The researcher asked a 45-49 year old petty trader with a diploma if she can afford to take a little time every day to go somewhere within a specific period to learn about e-government.

She said she cannot, due to a lack of time and family commitments and expectations; she can't afford to do that even if it is a small social gathering around her house. The frequency with which she appears during such a gathering can even cause problems within her family, not to mention going further away from home, unless such technology would provide her with services to help her children, like the immunisation scheme, in which case she can fully participate.

Another 35-34 year old hospital staff member with a degree was asked the same question by the researcher. The female subject made a similar statement. She said that although she is not restricted to anything, at times domestic work can take up her time and it can disturb her from participating in such programmes. She told the researcher that, even when women show up to every social gathering, society frowns on such women and tags them as irresponsible.

Another subject, a 50 -54 year old factory worker with a diploma, said that, *although she is not restricted to anything, at times domestic work could limit her time and influence her interest about such a programme. "I remember what happened to me in my school days. I was pregnant and was missing most of my lectures."*

From most of the subjects' responses, the researcher noted a clear distinction in gender roles among Yoruba subjects. It was also noted that most of the female subjects view the usefulness of e-government according to how it will improve and help them take care of their naturally assumed roles.

One of the subjects, a 25-34 year old man that is a university graduate, was asked if he can take some time to be taught how to use e-government products and services by any government designated personnel. He told the researcher that unless the training will help him get a job he would not bother. Furthermore, he said that he would also want to know what would be the direct benefit of learning about e-government, because in this country (Nigeria) every man makes his own luck.

This remark shows that, apart from gender's impact on the ability of most women to employ social interaction as an e-government communication channel, the perception of the importance of e-government intervention in meeting the subjects' immediate needs will shape their perception towards participating in any form of social interaction for e-government products and services.

5.3.2.1g Gender inequity

From the above response of the subjects, there is no known identified law or policy that discriminates against any gender's access to technology. However, factors like an inactive social circle and the social stigma attached to female freedom of association within their society, as stated above, imposes social gender inequity. Such barriers will be called and be regarded as social gender inequity for the purpose of this research. The social gender inequity could pose a barrier to women employing their preferred system of learning (social interaction) and affect their interest in community based projects. Such social imbalance in the perception of female interaction, especially married women, will influence the level of social interaction of the female gender.

Having concluded the relationships of the selected gender elements of the study, the research will evaluate the cultural elements of the Yoruba indigenous society as they concern social interaction as a form of e-government awareness channel.

5.3.2.1h Power distance

From the research, the most highly regarded authorities in the Yoruba indigenous society are the traditional kings called the 'Oba' and, in a few references, religious leaders. According to most of the subjects, traditional authorities only consult their close traditional ministers even when the decision applies to the whole of the general indigenous society. In turn, everybody is expected to obey these traditional authorities. They also hold religious leaders in high esteem, as one of the subjects said when asked a question regarding the most respected traditional institution in the area.

She said that she thinks it is 'Oba,' but she respects her pastor more, because most times Oba and his people (meaning His ministers) do their own thing. "But my pastor is always discussing with everybody although he has his other pastors to discuss with. In fact everybody in the church will likely obey the pastor more."

Although a lack of consultation was noted between the subjects and the traditional kings in the Yoruba indigenous society, most government programmes are executed through these traditional institutions as they are well known to the subjects; for example, child immunisation against polio and the HIV/AIDS campaign. Such a consultation gap, with noted loyalty to the traditional kings and religious leaders are characteristics of a high PD society, according to Hofstede and Hofstede (2005). Even within the high power distance, fear of being reprimanded as an offender is another factor which could be linked to influence citizens' obedience to the Oba directives, as noted from the subjects' responses.

Another 25 -34 year old male commercial bus drive with a GCSE education level was asked if Oba gives a directive, would it be obeyed by everybody and how will he monitor the orders to know if people are obeying or not. *He said that "everybody will obey the Oba's directive and the village youth wing will enforce it. If anybody fails to obey they will pay the person a visit." (Paying a visit according to the category 3 subject means that Oba will send the youths to either collect the deviant's household items in exchange for a fine or destroy them).*

Another 25-34 year old female university undergraduate corroborated this fact when she was asked the same question. She said that "Oba is most respected; I think he will be obeyed. Oba and his people have a way of enforcing this type of orders."

However, another subject, a 35-44 year old banker who expressed a divergent opinion on the above issue, said that nobody can force him to obey an Oba directive that he does not want to abide with. He said that he knows what he wants and what should be good for him. If they decide to enforce the Oba directives there could be a problem, but most people will abide by such directives out of fear, not respect.

From the above findings, there is noticeable high power distance within the society and it seems to show a visible influence on citizen based communication channels. An analysis of

the above subjects' responses shows that it can impact on social interaction, which is the preferred e-government awareness channel.

Another 35-44 year old female subject, a fashion designer with a degree, was asked if she would obey the directives of the Oba not to watch a particular programme on television. She said "No", but when the researcher asked if her husband decided to obey, would she obey then, she said that she thinks she would listen more to her husband than the Oba.

This shows that, among the community, even when citizens decide not to obey the directives of the Oba, other factors could influence their decision about the directives. For example, in the above case, even when a woman refused to abide by the directives of the Oba, if her husband obeyed the directives, such a condition could force the woman to go against her wishes due to her husband's decision. So power distance was a visible influence on social interaction as an e-government communication channel.

5.3.2.1i Collectivism

From the research, the subjects from the Yoruba indigenous society are divided in terms of community based e-government projects and displayed divided opinions in terms of participation in such projects. However, their responses show that they feel ownership when a project is community based and boosts their confidence that their interests will be protected and represented well.

One of the subjects, a 75-84 year old man with minimal education, was asked if the provision of e-government services and products were to be managed by the members of their community, would he participate. He acknowledged this idea with great passion and said that "If my people decide we will all be part of it. I think people will prefer community project at least you will know who they are (e-government delivery personnel) and they will appreciate the benefits to their people. Against the back drop of the people that did voters registration, they never cared because they came from another town."

Although most of the subjects often referred to the 'Oba' taking decisions unilaterally for the community, it was noted that they have a high regard for the Oba and their loyalty towards the institution. The researcher asked a 65-74 year old bicycle repairer, a male subject, if the government introduces an e-government based project to the community and hands it over to the community to manage by themselves, would his community embrace the project. He told the researcher that *"Oba must be aware before you make such e-government project a community based project." He further explained that Oba can influence their community decisions to adopt e-government products and services, but emphasised that friends will influence him more with regard to whether to adopt e-government services and products.*

Most of the subjects believe that making it a community project would increase their interest to participate, but some still prefer to be allowed to make their own decisions. Apart from the concept of making an e-government project a community based one, most of the subjects also emphasised the influence of friends and relations on their decision to use such e-government products and services. From the subjects' responses, the collectivist nature of the Yoruba indigenous subjects would influence social interaction as an e-government communication channel.

5.3.2.1j Uncertainty avoidance

In line with the findings of the pilot study, most of the subjects from the Yoruba indigenous ethnic society show apprehension towards e-government technology and therefore express the opinion that they need to understand how it functions. Although some divergent views were expressed, the majority believed that a basic understanding of the e-government processes will reduce anxiety. For example, due to personal experience, one of the subjects believes that he should understand the complexity of e-government before making a decision.

A 75-84 year old male businessman with a diploma was asked if he would prefer to learn about e-government from someone with whom he is familiar or any government appointed delivery personnel. He said he would prefer someone he knows, and is comfortable with. The researcher asked the subject again if he would like to understand how the e-government system works or its benefit to him before he learns how to use it. He said that he would like to know how it works in case anything goes wrong. The subject told the researcher that he would not want to experience what his father went through when he bought his first bicycle and he could not hook the bicycle chain back on the chain pulley. He said that they trekked for miles to Ibadan (the closest urban city to his town) before they were able to find someone to fix it. He told the researcher that, throughout the journey, they did not eat because his father was not happy and it took them almost the whole day to get to the place.

Another subject, a 55-64 year old food vendor with minimal education, expressed doubt about the purpose of e-government products and services and what they could be used for. When asked the same question, she said that she would have to know how it works before she would know if she was going to use it or not. She said that she does not want to do something she does not understand, maybe one day someone will show up in front of her door and start demanding a levy for something or other. In continuation, she said she would prefer someone she knows that has used it in order to learn from the person.

The replies from the most of the subjects show apprehension towards unclear variables. Such anxiety is the main attribute of uncertainty avoidance and it was noted to influence the perception of the subjects about technology like e-government processes (Warkentin et al., 2002). However, social interaction which involves the introduction of a well known trainer, the exchange of the experiences of users and the influence of family and relations will reduce the influence of UA.

However, when the above subject was asked if the Oba decided to make e-government a community responsibility, would he use it, he said that if it is the decision of my people (meaning his community) he will have no option.

UA was noted from the subjects' responses and was discovered to be a discouraging trait among the subjects. It influences the perception of the subjects and therefore discourages them from exploring their preferred means of learning about e-government. However, responses from the Yoruba subjects show that the effect of high power distance and the collectivist nature of the subjects will reduce UA.

5.3.2.1k Short term orientation

According to the pilot study, the subjects from the Yoruba indigenous society are anxious with regard to the time it would take to achieve a result.

A 35-44 year old man working in a beverage factory with a degree was asked if he could take a little time daily to learn how to use an e-government system, considering the advantage of using online e-government products and services. He said that time is of the essence and, besides, government things do not last. The researcher asked the subject, between the concept of time and the advantages which may be reaped, which would he consider to be more important. He said unless he is going to get money or its equivalent using the e-government systems, he cannot mortgage his time for something that will take an infinity to work.

Another 35-44 year old civil servant with a diploma corroborated the response of the former subject. The researcher put the same question to him. He said if it is going to take time then he does not think he would like to waste that much time. But he would like to have a place he could go to at his own time to learn. He told the researcher that, if he can walk down to the office and still get the same issue done, he does not see a reason to waste time trying to learn something that might not work eventually.

Such responses are similar to the replies of most of the subjects. Partially in line with the conclusions of the literature review, it was stated that value and usability will determine the interest in learning e-government systems (Venkatesh and Davis, 2000). Furthermore, most of the subjects responses show that such values will influence behavioural intention to adopt e-government products and services. The subjects are apprehensive of time, which shows that they believe more in immediate gain from such innovations. Therefore, such a trait will influence their active social interactions, but just like in UA, PD and collectivism will influence the e-government awareness channel of social interaction, which will reduce the effect of short term orientation.

In summary, the Yoruba indigenous subjects show more preference for social interaction as a means of acquiring e-government training. They also show enthusiasm towards community based projects. So, when considering the social interaction channel among the subjects, the research indicates that the cultural and gender elements seem to influence it as an e-government awareness channel. In any case, the perception and intention of the subjects towards the adoption of e-government products and services will tilt towards the content of the message within the social system.

5.3.3 Embedded Case study 2: Ethnic society 2: Ibo

The members of this indigenous ethnic society are found mostly in the eastern part of Nigeria. A total of 60 subjects were interviewed. RLPs were equally used to identify subjects and to support recording of interviews, where necessary. Due to the previous field experience from the Yoruba ethnic society, the researcher encouraged the RLPs to identify more subjects than needed to avoid a shortfall or in case of inability to replace a subject who is not being disposed to being interviewed. This precaution boosted the actualisation of the number of subjects needed. The total number of subjects was made up of 31 females and 29 males. The paragraphs below discuss the average responses of the subjects.

5.3.3.1 Findings from the subjects of the Ibo ethnic society

The researcher investigated the relationship between four cultural and six gender elements with regard to social interaction as an e-government awareness channel. The identified elements were investigated by conducting a semi-structured interview with the subjects and their responses are analysed below. Each of the elements was treated separately, according to the headings described below.

5.3.3.1a E-government channels of communication

Just as previously stated, e-government awareness channels of communication were identified within the indigenous societies as media, social interaction and Internet. During the interviews, it was discovered that 86% of the subjects interviewed mentioned social interaction as their preferred form of communicating and learning about innovations like e-government. Next, about 8% preferred media and 5% preferred the Internet, comprising five and three subjects respectively. Contrary opinions were expressed by some subjects, but further investigation during the interview shows that six out of the eight subjects emphasised the strength of social interaction within their society to influence people's perceptions and intention to adopt innovations like e-government. This is represented as figure 5.2 using a pie chart.
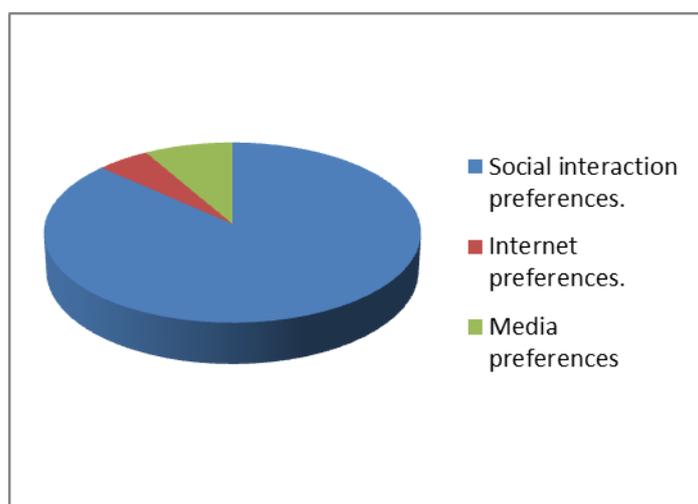
Figure 5.2: Ibo subjects preference chart for e-government awareness channels

A subject that works as a labourer in a training school with minimal education and within the age range of 50-54 was asked which medium of communication she would be willing and comfortable to use to learn about any government programme. She said that she does not need the TV or radio for it, she can only learn if others are learning it.

The same subject was asked why her decision to learn would be based on other people's decision to equally learn. *She said that it means that it is an important programme and might be useful one day. She told the researcher a story of how she refused to go to nursing school because her people regarded nurses as wayward and people that couldn't take care of their husbands because of the night duty schedule involved in the nursing profession.*

In another situation, a different subject with an 'A' level educational background awaiting results to go to university, who was aged between 17-24, was asked the same question; he said that he would prefer the Internet.,

However, when the researcher asked how often he uses the internet and why, he said that he uses the Internet about once a week and mostly for social networking and email. He said that, most of the time, when you tell people about anything on the Internet they don't argue that much and it gives him a kind of advantage over his friends. "Although for some time now most of them are learning how to use internet because they are complaining about my knowledge superiority and constant citing of internet during arguments. Now they challenge me and I don't like it."

From the above response, it is obvious that most of the subject's friends were forced to learn how to use the Internet due to interaction with him. Most Ibo subjects express strong influences of families, friends and communities. Such related responses were noted to be common among the Ibo subjects and are regarded as influencing social interaction. This conforms to the findings of the pilot study, which discovered that social interaction is the preferred channel of communication among the subjects from the Ibo indigenous society.

5.3.3.1b Gender distribution of labour

Out of 60 subjects interviewed from the Ibo indigenous society, 52 of them expressed the opinion that gender division of labour exists in their indigenous society. This represents 85% of the Ibo subjects overall. Although the majority of the subjects' views were in conformity with the existence of gender division of labour within the Ibo indigenous society, some contrary views were noted, especially among the literate female gender group.

A female 35-44 year old subject with a degree was asked about her views on the gender distribution of labour. She said that "anybody can get any type of job; it is a matter of interest and if one is qualified."

However divergent the subjects' views are, almost all of them believe that being qualified for a job outweighs gender division of labour.

It was also noted that most of the subjects believe that the job one does influences what one knows or one's area of interest.

From the analysis, there is obvious gender distribution of labour among this indigenous society and it influences the level of information available to any gender depending on the gender dominance. Statistically, from the research, category 1 subjects were dominated by the female gender group, supporting the findings that the computer related jobs are regarded as secretary jobs, which most of the subjects believe to be suitable for the female gender. This fact is not conclusive because the survey does not cover the whole population of the Ibo indigenous society and subjects were selected randomly.

A 55-64 year old female subject with a postgraduate degree was asked about the issues of gender distribution and computer related jobs. She said "Yes, job discrepancies due to gender exist, and the type of job one does will definitely affect the type of information one

acquires. If it is a hard job men are more suitable and can better handle it, but if it is the type of job that is related to typing or secretarial jobs the women will be better. So I think women will be better than men in computer related areas."

From the research, even though the society's labour distribution favours the male gender, it appears that the female gender is in a better position to learn more about e-government products and services due to the type of job deemed suitable for women. However this is not the case, as findings show that the male gender has more time to socialise and seek information concerning the government and that women show reluctance towards government related issues. This fact, in the researcher's opinion, places females in a weaker position regarding e-government awareness and engagement. Gender separation of roles is noted among the Ibo subjects and the social stigma attached to female social life is no doubt contributory to the female subjects' apathy towards social interaction activities. Largely, most subjects preferred social interaction as the best form of channel of communication for innovations like e-government; consequently, this will influence subjects' perception and their intention to adopt e-government products and services.

5.3.3.1c Access to technology

From the subjects' responses, no known barrier was noted in the area of access to the identified e-government awareness channels among the subjects from the, Ibo indigenous society. However, most of the subjects expressed a low level of interest in e-government activities, but preferred social interaction as the best way of being informed about e-government products and services. Moreover, some subjects made references to gender roles as a possible barrier to acquiring e-government training or using the system, even when it is available. This view was mostly noted among the female gender.

One of the subjects, a 35–44 year old degree holder working with the Nigerian police, was asked if her role as a mother would affect her ability to learn about e-government products and services. She said "Yes" and that motherhood can hinder her efforts towards achieving a particular goal. She told us that gender roles can affect her access to knowledge and even usage of e-government products and services and that her job and four children take up all her time.

For Ibo subjects, just like the Yoruba subjects, there are no noted policies or laws that prohibit access to any e-government products and services, but their preference for well known trainers, the natural duties of genders, and the self induced areas of interest impose barriers to accessing their preferred method of obtaining information about innovations like e-government.

In fact, one of the female subjects, a 75-84 year old with minimal education, was asked if she could access any type of information or training being provided in the community if she likes. She simply told the researcher that, "*women and men are not supposed to know the same thing, that some information are for men while some are for women.*"

Such a statement shows that there could be a sociological barrier to accessing the preferred channel of e-government awareness. From the subjects' responses, the restriction imposed by social beliefs could limit access to their preferred e-government awareness channel, which

consequently might have an influence on the intention of the female gender towards social interaction activities involving e-government products and services.

5.3.3.1d Control of resources

Just like the findings from the Yoruba indigenous society, the purchase or acquisition of any form of training could not be directly linked to social interaction. In Ibo indigenous society, most of the subjects are in control of their resources and spending, although the attitude of the married females towards marriage appears to have an influence on how the female gender control their spending.

One of the subjects, a 50-54 year old with a diploma, was asked how she handles her income and if she can use it to buy things like a portable computer if she desires. She said that she controls her resources, but it is disrespectful not to get your husband's approval for such expenses or ventures.

This type of opinion is synonymous among married female subjects. The female gender tends to have partial control of their resources and most decisions to buy such things might need the approval of their husbands or a superior person. The preference for communication via social interaction dominated the learning pattern of the majority of the subjects. Thus, from the research findings, resource control was not noted to influence social interaction with regard to e-government awareness channels or intention to use e-government products and services.

5.3.3.1e Gender and technology

Furthermore, most subjects show no sign of resentment towards the domination of any gender in the delivery or the supply of e-government products and services. Due to the visible gender division of labour within the society, participation in e-government jobs seems to favour women, based on the fact that computer operation is a keyboard based practice and, according to most subjects, is more of a secretarial job which is normally done by women.

Although most subjects were not bothered about any gender dominance in the provision of e-government training or products and services, a few still expressed a gender preference in terms of the provision of training for e-government products and services.

However, from the responses of the subjects, the researcher could establish that most of the subjects emphasised their preference for a well know trainer, someone they know and feel comfortable with. In this scenario, gender is not considered; rather, the familiarity of the trainers or support officer is more important to the subjects. The introduction of a familiar trainer or one of their own people will improve interaction among the trainers and subjects from the Ibo indigenous society.

5.3.3.1f Gender role

The importance of gender roles was noted from the response of subjects from the Ibo area due to their regard for the natural functions of genders, similar to the Yoruba indigenous society. It was discovered from the research that the male gender role does not influence their

ability to access any of the identified e-government awareness channels. Moreover, the roles are mostly aligned towards the traditional natural role of male and female.

One of the subjects, a 50-54 year old manager with a degree was asked if he would assist his wife to look after the children while she cooks. He sharply looked in our direction and said, "not at all, that domestic work is for women." He asked if the researcher expects him to be babysitting where his wife is still alive.

Such related remarks are common among male subjects. Most of the female gender within the Ibo indigenous subjects emphasised the seriousness of their role as mothers and, for the unmarried female subjects, the duties of assisting their mothers limit their chances of social interaction within the society.

One of the subjects, a 35-44 year old practising nurse with a diploma, in a bid to explain her motherhood role, told the researcher that it is very difficult to combine her profession with the family work, not to mention extra.

Another subject, a 55-64 year old with minimal education, said "in this community *womanhood can affect your ability to learn and do something.*" Such remarks are synonymous with the responses of most females of the Ibo indigenous society.

However, from the research findings, most of the subjects prefer social interaction as their best means of learning about e-government, as observed in the Yoruba indigenous society. However, the society is conscious of gender roles and duties and this limits the available time and movement of most married women. Although the unmarried women express some level of independence, they still have regard for society gender expectation.

One subject, a 25-34 year old receptionist who is a diploma holder, was asked if she could attend a community training workshop after work for e-government training. She smiled and said that the day she behaved like that would be the day she would be on her way to her father's house, and that she would like to participate in the training, but would have to discuss it with her husband and plan ahead of time to bring her sister to look after her young children.

Another subject, a 45-49 year old businesswoman, was asked the same question and was also asked if she could set aside some time to watch such a campaign on TV. She said that there is no way she could watch TV or attend an e-government awareness campaign while her children are hungry, if they (government) want to accommodate people like them they should treat them differently because they have different commitments like taking care of their children and households.

Another subject, a 55-64 year old bricklayer, was also asked the above question and he told the researcher that he would like to know more about e-government on the grounds that it would provide a positive impact on his livelihood.

From the research, there is a distinction in gender roles in Ibo indigenous society. Gender roles could limit periods of social interaction, which is the most preferred e-government awareness channel by most subjects and considering the fact that the preferred learning

pattern common among the subjects in the indigenous area is through social interactions. It was also noted that perceived usefulness could be affected by the gender role too.

5.3.3.1g Gender inequity

However, similar to the Yoruba society, it can be said that social gender inequity was noted among Ibo subjects. Although there is no know identified law or policy that discriminates against any gender or their access to technology, due to the preferred system of learning (social interaction) among the citizens of the area, some social barriers were noted. Most female subjects stated that their natural role as women, as cited in section 5.3.3.1f paragraph, the society's gender distribution of labour and the social stigma attached to female freedom of association interferes in the ability of women to interact socially.

A 25-34 year old female undergraduate subject was asked if she could attend any e-government awareness campaign and how often she could visit a cyber cafe for such usage. She said that, depending on the scheduled time of the campaign, she could attend but would not want it to interfere with what she wants to do at home because her parents would not be happy with her.

Another 50- 54 year old female subject, a petty trader, was asked the same question. She said that she could attend such a campaign, but the researcher does not expect her to sit down in a cyber cafe all day because she wants to learn e-government and starve her husband and children. If the government want people like them to learn they should provide support staff to help do that to reduce the time she would waste at the cafe.

Most female subjects expressed similar views, but contrary opinions were noted, mostly among the male subjects.

The same question was put to a male 65 -74 year old subject, a famer with an 'A' level educational background, and he said that he does not have a problem with attending such a campaign or visiting a cyber cafe so long as it does not interfere with his business.

Such views are mostly expressed by the majority of the male subjects, which shows that even when there is no known law or policy that limits female subjects from exploring social interaction as a means of e-government awareness channels, such barriers as noted above could exert a serious influence on the ability of the female gender within the Ibo society to participate in social interaction as their preferred channel of adopting e-government.

5.3.3.1h Power distance

According to most of the subjects, the most respected authorities in the Ibo indigenous society are the traditional rulers. They are called by different names, but are generally know as 'Igwe' (traditional ruler). In another area within the same society, the most respected authorities are called the 'Okpala' (it means first born and he is usually the first male born of every clan). Unlike the Yoruba indigenous society, according to most of the subjects, these authorities consult the citizens on almost all issues involving the society in which they have jurisdiction. Although they have the traditional ministers, like the Yoruba society they don't

seem to wield the same level of respect. Most of the subjects express little or no regard for the traditional ruling authorities.

When the researcher asked about how the people will react if an 'Igwe' or an 'Okpala' makes a pronouncement restraining the attendance of a particular function or listing to a particular programme, their answers were emphatic and straight. One subject, a 35-44 year old medical doctor said "O! He can't even think about doing that."

Another 50- 54 year old subject, a primary school head teacher, said "the Igwe does not have the clout to do that." Similar answers were given by the majority of the subjects.

However, most of the subjects expressed the view that, if any pronouncement in that regard could take effect, it must be backed by the town union. According to most of the subjects, the town union is an umbrella association body of a particular community. Every male adult that attains marriageable age automatically becomes a member. From the subjects' responses, the researcher noted that whatever decisions they take will be binding to all citizens of the community, even citizens living outside the community. The researcher was lucky to attend one session and discovered that women don't attend such functions unless invited.

Most of the subjects' further responses contradict the claims that their 'Igwe' is the most respected authority in that community.

According to one of the subjects, a 65 -74 year old blacksmith, who was asked the same question*, "Igwe won't give such directives because nobody will obey him and such orders must be supported by the town union before it can even take effect."*

Another 35-44 year old subject, a public servant with diploma, commented on the issues by saying that "*Igwe can't just make orders. The community will deliberate on it first and most decisions will be on personal bases.*"

On one occasion, another local authority was also mentioned. It was called the 'Age Grade'. According to the subject, it is an association formed by people of the same age range normally in ranges of five years. The subject, a 45- 49 year old hunter/ businessman, was asked about the most respected local authority in his area; he said, "it is the age grades and if the age grades take a decision no member of that group will go contrary."

From the responses, the traditional authorities consult the citizens and decisions involving the community are normally a collective effort.

On one occasion, a 55-64 year old subject, a commercial bus driver and a degree holder, told the researcher that "*the Igwe is just a ceremonial head of the town and that all the decisions involving the town are mostly taken by the town union.*"

From the subjects' responses, the Ibo indigenous society may be regarded as a low power distance society, unlike the Yoruba indigenous society. Furthermore, most government programmes executed through the traditional institutions like the town unions are well known to the subjects; for example, child immunisation against polio and the HIV/AIDS campaign.

Even within a low power distance society, the fear of being reprimanding as an offender is another factor that influences citizens' decisions about the community directives.

The subjects' responses indicate a low power distance within the society, but the consultative nature of the society influences the subjects' beliefs and obedience to their society or clan decisions. This shows an increase in the interactive nature of the society. This trait will influence social interaction among the Ibo subjects.

5.3.3.1i Collectivism

The majority of the subjects from the Ibo indigenous society favour community based e-government projects and displayed great enthusiasm at the chance to participate in such projects. From their responses, it shows that they feel ownership when a project is community based and anticipate that their interests will be protected and represented well.

According to one 25-34 year old subject, a businessman, when he was asked if he would abide by community efforts to motivate the citizens to use e-government, he said that he would prefer to do it at his own time, but the community decisions can influence his decision to use such a facility.

Another subject, a 35-44 year old civil servant, responded to the same question and said that nobody can force her to do what she is not interested in, but the decision of the community can influence her, especially when the community makes it a law.

Most of the subjects believe that making e-government a community project will pique their interest to participate, but some still prefer to be allowed to make their choice in their own time. Apart from making e-government a community based project, most of the subjects also emphasised the influence of friends and relations on their decision to adopt e-government products and services. The collectivist nature of the Ibo subjects was noted to influence their interest in social interaction.

5.3.3.1j Uncertainty avoidance

Most of the subjects from the Ibo indigenous society expressed their need to understand how e-government works.

One of the subjects, a 35-44 year old businessman with a degree, said that it would be difficult for him to adopt and put to use e-government services if he didnot understand how it works and how the information will be used.

Although some divergent views were expressed, the majority of the subjects believed that a basic understanding of e-government processes would reduce anxiety. The introduction of a familiar trainer would also boost positive perception towards e-government.

Another subject, a 50-54 year old businesswoman, said that she cannot embark on something that she does not understand unless she understands how it works and the purpose to be able to learn and use it. Such remarks were synonymous with subjects from the Ibo indigenous society.

One of the subjects, a 55 -64 year old civil servant with a degree, expressed doubt about the functionality or sustainability of such programmes. She said that she might not bother learning about it because such a project doesn't work in this country.

From the opinion of most of the subjects, it was established that uncertainty avoidance would influence the perception of the subjects regarding e-government. However, social interaction which involves the introduction of a well known trainer, an exchange of the experiences of users and the influence of family and relations and the community will influence UA.

5.3.3.1k Short term orientation

According to the pilot study, the subjects from the Ibo indigenous society expressed time consciousness with regard to achieving the desired results. However, research findings show that the Ibo people are particularly concerned about how useful and advantageous the e-government will be to their daily needs.

According to a 45-49 year old subject with a diploma working as security man, who was asked if he could afford to spend considerable time learning how to use e-government products and services, he replied that if it is affordable and available, he will be more favourable towards learning and using the e-government products and services because he can afford to do it at his own time.

Another subject, a 25-34 year old unemployed graduate, said that in learning time is of essence, so inasmuch as it is useful, he must not have to waste all the time in the world to learn how to use e-government products and services when at the end of the day nothing might come out of it.

One of the subjects, a 45-49 year old civil servant, responded to the same question and said that he does not think the e-government thing will work because even common letters go missing on the way, not to talk of waiting for government responses to something that is very urgent to you. If you don't go to their office and tip them, they will not even work on it. Look at what is happening to the so called international passport online application.

Most of the subjects' responses show anxiety over expected time and workability, and such traits will influence subjects' perception towards e-government; however, because most Ibo indigenous subjects prefer social interaction as the best means of acquiring e-government knowledge, the majority of the subjects expressed loyalty to community decisions and, in most cases, individual opinion does not matter in such circumstances. Short term orientation traits will be influenced by collective decisions within the society.

Having concluded the evaluation of the Ibo embedded case study, the study presents the research findings from the Hausa indigenous society subjects in the next section.

5.4.4 Embedded Case study 3: Ethnic society 3: Hausa

The Hausa indigenous ethnic subjects are largely located in the northern part of the country. A total of 60 subjects were indentified, but only 36 were finally interviewed. The researcher could not interview the remaining subjects due to the civil disturbance in the area, as a

religious and ethnic riot broke out during the field research period. Most areas of the northern part of Nigeria were affected and over 1,000 people lost their lives (Thisday, 2010). The researcher was forced to abandon the research and retreat to a safe area. Due to time factors, the researcher could not complete the fieldwork. The 36 subjects finally interviewed comprised 18 of each gender.

Furthermore, some of the research materials were lost to the armed robbers that attacked the researcher on the way back, but some of the materials were recovered because the information was already translated and transcribed and was in text format as documents in an external memory device..

5.4.4.1 Findings from the subjects of the Hausa ethnic society

The research investigates the relationships between identified cultural dimensions, gender elements and social interaction as an e-government communication channel within the Hausa indigenous ethnic society. The elements were investigated by semi-structured interviews conducted with the subjects and their responses are analysed below. Each factor was treated individually, as described below.

5.4.4.1a E-government channels of communications

E-government communication channels were previously identified within the Hausa society as media, social interaction and Internet enabled modes of communications during the pilot study. In line with the pilot study, most subjects who were interviewed identified social interaction as their preferred form of communication for learning about innovations like e-government.

Further analysis shows that, among 56% subjects that preferred social interaction, religion was also mentioned and it was noted that it is a very persuasive means of communication among some subjects within this ethnic society. Among the 11% and 33% of the subjects that preferred the Internet and media channels respectively also confirmed the fact that families and friends can influence their intention to adopt innovations like e-government. This is representing below as figure 5.3 using pie chart.
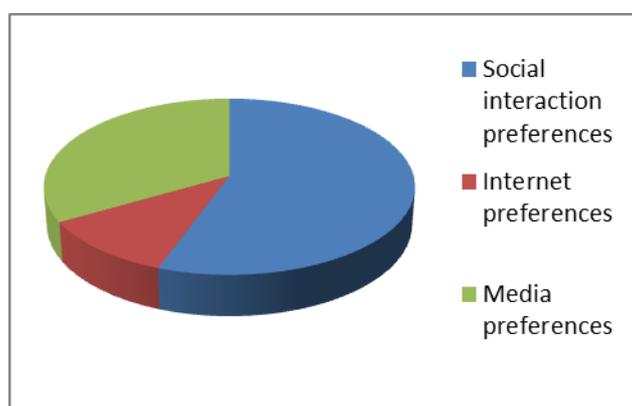

Figure 5.3: Hausa subjects preference chart for e-government awareness channels

For the purposes of this research, religion will be classified under social interaction, but future research will be necessary to examine the extent of this phenomenon on subjects' intention to adopt and perception of e-government within the Hausa indigenous society. This view was also held by a few Yoruba subjects.

5.4.4.1b Gender distribution of labour

All the subjects interviewed during the research emphasised the existence of gender division of labour. Most subjects regarded it as being natural, while some attributed it to a preference for some types of jobs among genders. In some cases it was attributed to the dominance of the male gender within the Hausa community.

A 35-44 year old female subject who works as a civil servant told the researcher that "it is obvious that the type of job in question (e-government jobs) favours women because such a job requires patience, but men dominate that field so they favour themselves more."

Most of the subjects are of the view that division of labour is a natural thing and should be respected as such. For example, a 23-34 year old female subject, a petrol station attendant with a diploma, told the researcher that "*some jobs could be done better by women, but men are more technical so can get e-government jobs more easily than women.*"

Furthermore, another subject, a 55-64 year old businessman, explained that "even the gender division of labour was taken care of by nature and that is why women bear children and men don't."

Most of the subjects expressed the opinion that the type of job has a way of influencing personal knowledge. A 25-34 year old commercial motorcycle operator who knew one of the RLPs, told us about an event that happened, and one of the RLPs from that area asked him about it. He told the researcher that *he is not from the same area or lives in that area, but because he is a commercial motorcyclist that is always on the road, we now assumed he must know about the issue.* From the explanation, the RLP thinks he is supposed to know about the incident because he is a commercial motorcyclist and the incident involves levies imposed by the youths of a particular community for the use of a road that passes through their community.

Another 50-54 year old civil servant, one of the subjects with a degree, told us that jobs influence what one knows. He said he knows about e-government because he works with one of the government agencies that have implemented such programme. He told us, to be honest, he wouldn't have known what it means if not for the fact that he works in Corporate Affairs Commission of Nigeria (CAC). He said that even now he teaches most of his colleagues in other agencies and even some big OGAs (OGAs means more senor workers) about the usage of computers to conduct online searches for company registrations.

Judging by most of the subjects' responses, there is an obvious gender distribution of labour among this indigenous society and it influences the level of information available to most subjects. The effect of social interaction was noted, as was the case of the man who works in CAC who now teaches others how to conduct online company searches. In the Hausa

indigenous society, the gender division of labour can influence social interaction as an e-government awareness channel.

5.4.4.1c Access to technology

All the subjects interviewed confirmed free access to technology. However, most of the subjects expressed strong views regarding their preference for well-known trainers, the dominance of the male gender in cyber cafes, restrictions on the free association of both genders and strict observance of some religious orders as factors capable of influencing access to e-government. All the mentioned factors fall under the social interaction channel.

For example, one of the subjects, a 50 -54 year old food vendor, told the researcher "they have free access to all channels of e-government communication, unless for some who do not watch TV or use such a medium as a result of religious observance".

Another subject, a 55-64 year old public servant with a degree, said she does not know if there is any restriction on access to technology, but can't always go to social gatherings due to time and depending on the place. "Most times my profession and domestic issues occupies most of my time." She said she prefers social interactions like one- to- one training and can also go to any cyber cafe but not at night and most times she avoids it when there are so many men in there.

A 65 -74 year old subject, a businessman with minimal education, was asked if he would mind any gender training him on how to use e-government products and services and his preferred method of learning. He said that he does not like women teaching him, although information is free, but not all, like the traditional and religious information. He said that he prefers social interaction as the best way to inform him and confirmed that they are always informed by the Imam or during social gatherings.

He was also asked if he has any preference for any gender to lead the promotion or training on the usage of e-government products and services. He said that he would like someone he knows as the trainer and that it will make things easier for him.

Most Hausa subjects responded along this line, including some subjects who were less gender conscious in their responses.

One of the subjects, a 25-34 year old undergraduate said that she is not interested in the gender of the trainer, but will not use the cyber cafe because is always flooded with men and will definitely not use it also when her husband is around.

From the analysis of these responses, there might not be any form of policy or law barring any gender from access to technology, but society imposed observances seem to influence free access to technology. This could also affect social interaction as an e-government channel of communication.

5.4.4.1d Control of resources

Most of the subjects control their own resources, but cultural barriers imposed by their attitude towards marriage pose a limitation on how the female gender controls their resources. However, this did not have any direct influence on social interaction among the subjects from Hausa society.

For example, one of the subjects, a 45 -49 year old university graduate, said when she was single it was easier for her to get training on anything or buy any gadget, but now that she is married she can't do that anymore because the husband will ask her about it.

Another subject, a 35 -49 year old diploma holder, also said that she controls her resources and spending, but her husband will always buy those gadgets and for training she will need her husband's consent.

A 55-64 year old politician, a subject with the equivalent of a diploma in education, said that she does not think she controls her resources and spending in all cases; most times she discusses most of her expenditure with her husband.

All the male subjects were noted to be in charge of their resources. Some married men also said that they sometimes discuss major expenditure with their wives. From the research analysis, the female gender tends to have partial control of their resources, but most purchase decisions might need the approval of the husband or superior person. The indirect effect of loyalty to their husbands could influence married women's decisions in terms of their ability to spend their money, but the preference for social interaction as a channel of communication dominated the learning pattern of the majority of the subjects, which they can employ without spending money. Thus, it is found that resource control cannot be established to influence social interaction as an e-government awareness channel.

5.4.4.1e Gender and technology

Most of the subjects expressed concern over the type of gender involved in the delivery or supply of e-government products and services, especially with regard to interaction with the citizens. Some subjects' remarks touched on the privileges and rights of gender and some on religious observance, while a few were not interested in the type of gender that leads the campaign; finally, trust was also mentioned.

For example, a 65-74 year old butcher, a subject with minimal education, told us that he would not like a female teacher to teach him about such things (e-government products and services) and even the male preferred trainer would need to be someone he trusts.

Another subject, a 50-54 year old civil servant with a university degree, in response to the above question, said they have a way of doing things in their community; if it is in the urban city anybody can be in charge of the e-government technology training or campaign, but here (referring to his village) men will be taught by men while women teach women.

Also, another 65 -74 year old businessman, a subject with minimal education, after showing signs of irritation with regard to the same question, said that he has told us before that a man should be employed to teach him and women should teach women.

Since, there are strong views towards gender interaction and association in the Hausa indigenous society, such practices will influence social interaction as an e-government awareness channel. From the subjects' responses, it is found that gender will influence social interaction in e-government technology.

5.4.4.1f Gender role

Among subjects from other indigenous societies, the gender role was noted and the Hausa subjects are no different. From research findings it seems to be highly regarded due to the pronounced natural functions of genders, local laws on gender association and religious observance. For example:

One of the subjects, a 45-49 year old graduate, told the researcher that he does not think a gender role can affect what one knows, and what individuals learn is just a matter of interest; he told the researcher that he just taught his wife how to use the computer and Internet and she is using it well

The researcher asked the subject if he would like his wife to be the one to teach him how to use e-government products and services? He said, no and that he is the one that is supposed to teach his wife.

Another subject, a 25-34 year old undergraduate, told the researcher in response to the above question that, when it comes to the urban city where she lives she can go anywhere and attend any gathering, but it is not like that here (in her village).

One unidentified subject, a businesswoman, also said that she cannot sit with her husband during such training like e-government; we sit according to gender, women sit different from men.

Most of the female subjects emphasised the effect of the gender role on their learning ability; one 35-44 year old degree holder said although she is not restricted in any way, the domestic work affects the available time to even attend any form of such training.

Since most of the subjects mention social interaction as their preferred means of learning about e-government products and services, the society's consciousness of gender roles and duties limits the available time and movement of the female gender. It is therefore found that gender roles will influence e-government awareness channels, considering the fact that the preferred learning pattern common among the subjects in the indigenous area is thorough social interaction.

5.4.4.1g Gender inequity

There is noted evidence of gender inequity within the Hausa indigenous society. According to most of the subjects, male and female genders are not allowed to sit together publicly. One of

the subjects, a 50-54 year old degree holder and a civil servant, said although men and women don't sit together, she does not know of any law that bans the use of any technology unless on a religious note.

Another subject, a businessman with minimal education, told the researcher that he does not think there is a law restricting women and men from sitting together and that such observance is a religious thing, but in this community such observances are treated like laws.

Most of the subjects remarked that some religious groups prohibit the usage of gadgets like TVs, but they are extreme religious groups, so it is not a community issue. For example, one of the subjects, a 45-49 year old secondary school teacher, told us that "*the members of the Boko Harm (an Islamic religious sect) adopted the belief that Western education is evil so they will not want any form of e-government products and services;*" she advised the researcher not to interview them because they will not like us.

One of the subjects, a telecommunication engineer within the age bracket of 35-44, also told us that "*no law forbids the use of any e-government channels of communication devices, but some religious groups forbid that, although the Imam sometimes advises against some programmes shown on the media; but such gadgets are normally used inside the house and it will be difficult to monitor.*"

No gender was directly discriminated against, but due to the fact that e-government jobs are dominated by the male gender and the most preferred form of information exchange is through social interaction, it could be said that such practises could influence social interaction as an e-government awareness channel.

5.4.4.1h Power distance

The most highly regarded authorities in the Hausa indigenous society are the traditional rulers and religious leaders called the Emir and Imam respectively. According to the subjects, traditional rulers only consult their close traditional ministers, even when the decision will apply to the general indigenous society. In turn, everybody is expected to obey these traditional authorities.

One of the subjects, a 75-84 year old businessman with minimal education, said that the "Emir is the most respected authority and that nobody disrespects him, even when you disrespect him it is treated like an abomination." The researcher enquired what the reaction of the subject would be if it was discovered that the decision of the Emir is biased and conflicts with the Imam's directives. The same subject said that "the Emir cannot make a bad decision because he has his wise men (local council ministers) to consult. The Imam is a Man of God and directs people on the right thing God wants them to do."

Most of the subjects explained that the Emir does not have to consult outsiders; he has his council ministers to consult.

The researcher asked one of the subjects, a 75-84 year old businessman, if his community Emir consults his community during decisions concerning the community. He rhetorically

asked the researcher who he wants the Emir to consult, and then asked if the researcher expects the Emir to consult him.

One subject, a 25-34 year old technician with a diploma, in response to the same question, told the researcher that *he does not think Emir consults anybody; rather, people consult him."*

Similar remarks were common amongst most of the subjects on the issue of consultation with citizens.

On the question of the citizens obeying the Emir or Imam if there is a directive on e-government campaign initiative, most subjects express the view that everybody will obey the directive of the Emir and, in some cases, the Imam.

For example, a 34-44 year old subject, a public servant, said that "the most respected are the Emir and Imam. Most people will obey them and they will never clash because they have a way of consulting one another depending on the rank of the Imam. He can order people to participate in a program and everybody will obey him."

Another 25-34 year old subject, in response to the question, said that "most people will obey the Emir and nobody can start such a mass campaign like the e-government programme without the consent of Emir in the locality".

Most subjects, like a 35-44 year old businessman, told us that "during the polio immunisation programme, the Emir sent word around and everybody obeyed and turned up even against the rumour that the injections retard children's growth."

One other subject, a 35-44 year old civil servant, told us about an incident that portrays the powers of the religious leader called the Imam within the Hausa indigenous society. The incident happened when Nigerians wanted to host a beauty pageant in the country's capital. (Abuja). The subject asked if the researcher was not around then and said that the Imams all over the country preached against watching it because one of the editors in its editorials in one of the national dailies linked the beauty of the girls to something Mohammed (the Islamic prophet) would be happy to watch. The article was condemned and described as being demeaning to the status of Mohammed among Muslims. The subject told the researcher that the preaching by the Imams against such a newspaper article triggered demonstrations and properties and lives were lost. He said he was sure many Muslims boycotted the show and did not watch it.

As seen above, even when citizens decide not to obey, other factors can influence their decision about the directives. Thus, power distance will influence social interaction as an e-government awareness channel.

5.4.4.1i Collectivism

The majority of the subjects from the Hausa indigenous society favour community based e-government projects and display great enthusiasm to participate in such projects. Most of the subjects believe that making e-government a community project will increase their interest to

participate. Furthermore, most of the subjects also confirmed the influence of friends and relations on their decision to use innovations like e-government products and services.

For example, one 25- 34 year old undergraduate told the researcher if his people decide, they will all be part of e-government development in their area. But such decisions are mostly discussed in the Emir's place. He said that if the Emir makes a decision everybody must abide by it and it cannot be a bad decision against his people.

Another subject, a 45-49 year old commercial motor driver, told the researcher that if the Emir and his associates decide to make such a programme a community based project and directs that everybody must participate, he will obey, but he thinks most people would prefer to do it in their own time. He said that the Emir could influence his perception towards e-government products and services, but he would participate more if it was a community project.

This line of response is common among the subjects from this area. This shows that the collectivist nature deduced from the subjects' responses will influence social interaction as an e-government awareness channel; hence, the study's interest in community projects.

5.4.4.1j Uncertainty avoidance

Although some divergent views were expressed, the majority believed that understanding how e-government products and services work has nothing to do with perception and usage. All the subjects expressed the view that the introduction of familiar trainers will increase their comfort when learning about e-government products and services. The research shows that the majority of the subjects expressed a preference for a familiar person as a trainer.

For example, a 75-84 year old subject within minimal education told the researcher *he would prefer someone he trusts and is comfortable with as a trainer. When the researcher sought to know why, he said that he has to trust the person who will teach him because he can commit sins by what he hears.*

Another subject told us that he would like to know how it works, but would prefer someone he knows that has used it.

The majority of the subjects' opinions were aligned with this view. From the findings, it could be said that this could be interpreted to be a way of reducing anxiety and boosting confidence towards the usage of e-government products and services.

5.4.4.1k Short term orientation

According to the majority of the subjects, the time taken to learn about the e-government process might not be important, but the place in which the training is conducted and the products and services are used is considered to be more important among the subjects from the Hausa indigenous society.

For example, one 25 -34 year old undergraduate told the researcher that he does not care how long it takes to learn how to use e-government products and services, so long as they will have a place to use it and continue the training so that one won't waste time for nothing.

In any case, most of the subjects' responses show little regard as to how long it takes to learn how to use e-government products and services. From the responses of the subjects, shot term orientation will not influence social interaction as a channel of e-government communication among subjects from the Hausa society.

Having concluded the examination of the subjects' responses within the three indigenous areas, the chapter will now go on to evaluate the findings.

5.5 Case study findings and data analysis

This section discusses the case study and provides the knowledge necessary to successfully complete this research. The sample size of the case study was increased to provide a source of rich information to the researcher and to redefine the post pilot conceptual framework of the research. It also discusses the difference and similarities between the theoretical and practical work of the research.

From the case study, it should be noted that the initial subjects of the research number 153, which will result in 153 transcripts multiplied by 2; this will add up to a total of 306 transcripts. The questionnaire comprised 33 guide questions, which results in 10,098 paragraphs of responses from the subjects overall. It takes an average of two hours to interview a subject, which equals approximately 306 hours of contact time with the subjects. Furthermore, the researcher contacted 76 subjects later in the process for confirmation of the results from the different indigenous ethnic societies, with regard to 22 subjects from each indigenous ethnic society. This formed an additional 2,508 paragraphs of research findings.

The implication is that it will be almost impossible to offer all the explanations of the research interpretations and still generate the research results within the word count of this dissertation. An explanation of the data interpretation is reflected in the refined theoretical propositions. However, brief explanations and examples will be offered to give a detailed understanding of the data interpretation techniques used in this research, starting with field study findings.

5.5.1 Field study findings

During the pilot study, the theoretical explanation of e-government was changed to an understandable term but it was not favoured by some subjects; therefore the strategy of administering the questions was subsequently changed. The researcher realised that his attempt to make the questions understandable meant some categories found them to be patronising and often showed resentment toward the interviewer. This prompted the rephrasing of some terminology within the questionnaire to take care of all levels.

The researcher discovered that religious observance has a strong influence on the attitude and behaviour of the subjects from the Hausa indigenous area and it influenced the method of data collection within that area. Although religious influences on subjects' intention to adopt and perception of e-government were not part of the research, they are certainly another area worth exploring to complement this research.

Finally, most of the subjects tended to respond freely when spoken to in their native languages rather than English. Most requests made for photographs to be taken were turned down by the subjects. The researcher later discovered that most of the subjects feel very comfortable when spoken to in their own native language instead of English. In such cases, most requests were made through the RLPs; hence, securing approval for most photographs taken. Therefore, the study proposes that future researchers in such areas should consider using local languages to improve their research findings. This observation could be linked to the fact that most subjects emphasised their preference for familiar people to be involved in the delivery of innovations like e-government.

5.5.2 Case study data analysis

With regard to the analysis of case study findings, the existing literature is not clear on how these findings should be structured and analysed (Yin, 2009). Yin (2003, 2009) states that case study techniques for analysing evidence are still remote and this has made it very difficult to practise and to overcome these circumstances It was suggested that every case study will have to follow a general analytical strategy of defining priorities for what to analysis and why.

The research relied on theoretical propositions to build evidence and employs explanation building to examine the evidence. In the analysis the narrative responses where capture both as text and words. The words where later transcribed as explained during pilot case study. The data was conceptualised, reduced, elaborated and related to prepositional statements using themes as describe in chapter 3 section 3.2.5a. The example of the themes where shown in table 3.1 and the details page is attached as appendix 11. Therefore, empirical evidence was analysed within the context of the theoretical propositions of this research. This explanation of the data analysis technique was offered in Chapters 3, section 3.24 and 3.25 and in chapter 4, section 4.4.4 but a brief description will be given to refresh the mind of the reader. The collection of data was linked to each theoretical proposition, as stated earlier. This process helps to improve the case study data analysis and makes it easier to apply explanation building (Yin, 2009). In any case, the influence of culture and gender on e-government diffusion was determined through the media of explanations, opinions, actions, reaction and reflections. The research identified a common channel of diffusion from the subjects' responses. It then determined whether the identified dimensions of gender and culture will have any influence on that channel.

The process the researcher pursued to make some sense of the collected raw qualitative data is outlined as follows. An explanation building technique was used to identify the preferred and available means and method of subjects' communication channels. For example, a subject was asked what her preferred channel of communication for learning about government activities was. She said *she preferred to learn through radio* (media channels). However, the woman was a petty trader and, according to the researcher's observation, did not have a radio within her shop; by virtue of her trade, she spends the entire day and about six days a week in the shop. In the course of the interview about gender roles, she told the researcher that *her position of being a mother affects access to media information*. She gave an example explaining how *she could have being caught by the law if she had not been told by one of her children that the previous day was sanitation day* (sanitation day is a day

mapped out by the government of the state for all citizens to remain at home and clean their environment. All businesses will remain closed and nobody is allowed into the street except sanitary inspectors. The process is backed by the law and offenders are prosecutable).

The researcher then investigated the frequency of such similar occurrences of accessing such information through her children and other relatives. It became obvious that almost all such information had been communicated to her by either her children, friends or relatives. It should be noted that the elements of explanation building are based on 'how' and 'why' questions, which form the research questions, which in turn are guided by the research theoretical propositions. What this means is that for every theoretical proposition, a research question was formed and the subjects' responses reordered against it. So, in order to investigate the relationships within the theoretical propositions, the 'how' and 'why' questions will be applied to the subjects' responses under the theoretical propositions. In the above case, if elements of explanation building are applied to the subjects' responses, as shown below, the findings will be recorded.

1 How had she heard about the government's instruction on sanitation? Through her son (word of mouth – interpersonal interaction).

2. Why through such a medium? She was busy attending to her kids (role of being a mother).

3. How often? (Most times because she does not have a radio where she spends most of her time).

The explanation link will point to human interaction as a means of obtaining information and her consistent use of such a medium is as a result of her role as a mother needed to cater to her children. This point to the theoretical propositions formed to study such phenomena. According to Yin (2009), *"To "explain" a phenomenon is to stipulate a pre-summed set of casual links about it, or "how" or "why" something happened and this may be difficult to measure in any precise manner. In any case the better case studies are ones where explanations reflect some theoretical significant propositions within the research."* Such analysis was used to identify that social interaction was the most viable means of communicating e-government products and services among the subjects of the three indigenous ethnic societies. Furthermore, similar activities were applied in the interpretation and analysis of the text obtained in this research; another example is described below.

This example involves theoretical proposition 4 which states that "Gender in technology will influence social interaction as an e-government awareness channel." The excerpt:

The researcher identified that the subject is computer literate and does not have access to the Internet at home and will want to apply for an international passport.

The researcher: how do you normally access the Internet?

The subject: *mostly through the cyber café*

The researcher: can you apply for the international passport through a cyber café?

The subject: *I don't think so, but I heard that they (they means= Nigeria Immigration Services) are online, but most people said that their site does not work.*

The researcher: why haven't you tried it yourself? Or is there no cyber café around?

The subject: *there is a cyber cafe down the street, but it is just packed with guys (Guys=means Men).*

The researcher: will the men in the cyber café stop you from using it? Or can't you find out from them if it is possible to do that from the cyber café?

The subject: *not at all, but how will I express my activities there if my husband sees me inside the place and besides most times they (they means the owners of cyber cafés) do not keep or reserve spaces for women to use such places with them (them =means the men in the cafés).*

The researcher: why would you want a special area inside the café to use?

The subject: *if they said that women should not sit with men then let them provide or make room to accommodate us. (She rhetorically said unless they don't want us to use computers then laughed).*

The research is only investigating certain elements of the discussion: the relationship between gender in technology and social interaction as an e-government awareness channel. Therefore, applying an element of explanation building in the form of 'how' and 'why' questions, the explanation is shown below.

1. Why did the subject not use the cyber café?

> Women are not allowed to sit with men (gender social restriction).

> All the people in the cyber café are men (gender domination).

> Husband's insinuation about visiting such places jam-packed with men (marriage restrictions).

2. Why have she not tried using it somewhere else?

> The people said that the site does not work (Word of mouth, interpersonal interactions).

3. Why did the subject not find out from the people already using the cyber café?

> They were men (gender of the people with access to the technology).

In this case, the people that told her about the website might be people that are in the same predicament as her; if she had had access to the cyber café, she could have tried it herself considering the fact that she needs it. However, the researcher later tried the website in question and discovered that it is active, but it is not interactive. In this case, the fact that the access point was dominated by men was identified as a gender dominance issue for the subject, so she could not go there or interact with the men to confirm her knowledge about

how to obtain an international passport through online application. Second, the negative insinuation anticipated from her husband also puts her at a disadvantage if she even interacts with the men that have access to such an access point. Third, the subject mentioned the owners of the cyber café as not doing enough to accommodate women that need special attention due to social barriers on gender relationships within their community.

In conclusion, the gender involved in the e-government technology access and delivery point influenced the ability of the subject within that community to acquire the necessary e-government products and services information she required.

Furthermore, due to the word count and the time required to complete this research, some further examples are attached as Appendix 9. The use of explanation building is to establish a causal link between phenomena. According to Yin (2009), the establishment of a causal link may be difficult and complex to measure in any precise manner, but when used to establish that theoretical propositions are correct, it can lead to a major contribution to theory building. It should be noted that the explanation building applied in the analysis of the case study data was formed to prove theoretical propositions. It is assumed that the above example will provide the reader with an understanding of the data analysis technique used in this research; hence, a summary of the overall findings is presented below.

E-government awareness channels

Having established channels of communication of e-government in the pilot study to be mass media channels, Internet based channels and social interaction; religious types of communication were also noted during the interviews with subjects from the Yoruba and Hausa societies. In examining e-government communication channels, the researcher discovered that most of the subjects in all the indigenous societies identified social interaction as their preferred means of knowledge transfer and the most effective. Although some identified other means, all the subjects emphasised the effectiveness of social interaction as a means of communication within their societies. In total 77% of the subject interviewed were more disposed to use of social interaction as the preferred while 8% and 15% respectively prefers internet and media channels. The cumulative total of means of communication preferences is represented as figure 5.4 as shown below.
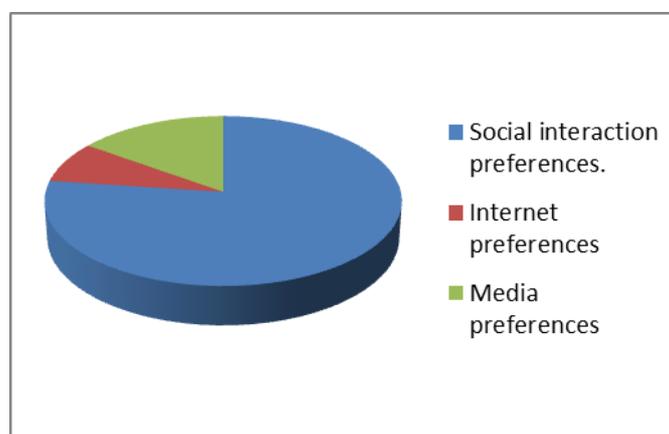

Figure 5.4: Cumulative preference chart for e-government awareness channels

Among the few subjects who gave contrary views, most emphasised the stronger influence of families, friends, community and their traditional leaders' opinions on their ability to make decisions. Some of them gave examples to show that such influences have pressured them to change their opinion and to embark on some activities they previously considered to be unimportant. It was noted that most of the subjects have heard about government programmes by other media, but social interaction has a more persuasive influence on their ability to participate in such programme.

Compared to the findings of the pilot study, it shows that social interaction is the most preferred e-government awareness channel among the majority of the subjects involved in this research.

Gender division of labour

Gender division of labour was noted among all three ethnic subjects, but the extent to which this impacts women's decision-making was equally noted to vary. Among Yoruba subjects, men were noted to dominate category 1, supporting the fact that the society labour distribution is favourable to men, just like it is for the Hausa. Going by the responses from the majority of the subjects, "what an individual does influences what an individual knows", so women will be in a disadvantaged position to be informed about e-government within the societies. From word of mouth, the subjects believed that computer related jobs are for women, but in reality they view them as technical jobs which the subjects from all three ethnic groups believe are favourable to men. This was evident in their answers when they were asked about the management of a cyber café. Since technical jobs, according to the subjects from the three ethnic societies, are more favourable to men, women will therefore be in a disadvantaged position to be informed about e-government, since what one does determines what one knows.

Even for male subjects, who seem to have unrestricted access to social interaction, the society gender distribution of jobs makes them view computer operations as a woman's kind of job, as previously identified. The gender division of labour seems to manifest as a result of gender role traits and influences. This influences the ability and level of social interaction, mostly among female subjects, when faced with e-government products and services. However, such a trait as noted from the subjects' responses seems stronger among Hausa subjects, but qualitative research to investigate the strength will be needed to confirm this fact.

Finally, social interaction involves inter-personal discussions. Most jobsare believed to be dominated by men, and the type of job that women take up and seem comfortable with within the three societies makes them less likely to gain knowledge whilst talking about e-government. Thus, gender division of labour will impact on the level of interpersonal discussion among the female subjects from the three indigenous ethnic societies.

Gender access to e-government technology

It was noted from the Hausa subjects that the gender divide is such that women will find it difficult to use public places to access e-government and obtain information of interest to them. The greater the divide between the status of men and women within such an indigenous society, the more it will influence social interaction, which is their preferred means of channel of communication for e-government products and services within such a society, but it differs from that of the Yoruba or Ibos.

It was generally noted among the subjects of the three indigenous societies that the way society frowns at female interaction with people outside their families, the burden of gender roles, and preference for a familiar trainer form part of the social norms and observances within the societies, which will influence the attitude of women towards social interaction as an e-government awareness channel.

However, access is not only about the availability of technology; such social norms and society observances could also be a barrier to accessing e-government products and services', considering social interaction is the commonly available channel of communication.

Resource control

The Yoruba and Ibo female subjects tend to have more freedom in terms of control of resources; Hausa female subjects, due to the religious observances and stronger physiological belief in the natural roles of women, exercise less freedom in resource control when viewed as monetary earnings.

Control of resources was also evaluated in this research as the control of decisions towards social interaction as a means of e-government awareness. It was noted that, among all the subjects that exercise such control, decisions will be difficult since social interaction involves families, relations and friends within the subject's immediate environment.

Therefore, resource control could not be noted from the subjects' responses to influence or form a relationship with social interaction as an e-government awareness channel.

Gender in technology

The influence of gender in technology delivery was noted among the Hausa subjects. For example, the gender of e-government delivery personnel is considered to be very important by the subjects from this area because, by religious observance, female subjects do not sit publicly with their male counterparts and are often restricted on the way they talk to non-members of their families. If an e-government delivery personnel is a man, it will discourage the female subjects' participation in the programme. However, subjects from the Yoruba and Ibo communities did not display such preferences.

Apart from the influence of the gender divide among Hausa subjects, emphasis was also placed on trust because of religious observance. Most of the subjects from the Hausa indigenous community believe that they have to trust what they are being told and have to trust the e-government delivery personnel due to religious observance. They believe they can commit a sin according to what they hear. However, the subjects from the Yoruba and Ibo societies did not express such beliefs.

Finally, gender in technology was noted to encompass the identity of the people responsible for the delivery of such innovations. For example, almost all the subjects from the three ethnic groups emphasised their preference for a well know trainer or their preference to learn from someone who has used the system. This shows that the familiarity of the people responsible for the delivery of e-government products and services was considered to be important by the subjects.

Thus, with regard to an e-government delivery system, gender will influence the level of social interaction in the Hausa community, but familiarity with the e-government delivery personnel will influence social interaction as an e-government channel of communication in all the three indigenous societies, as noted from the subjects' responses.

Gender role

The trait was noted among all the subjects due to pronounced natural functions of gender, but local laws on cross-gender associations and religious observance was noted to impose more roles on the female subjects from the Hausa indigenous society.

It was noted from the subjects that the gender role of men often gives them the opportunity and time to source information using all the available means of e-government awareness, while most of the women are reduced to the activities of domestic work and caring for the children.

From the research findings, most of the subjects identified social interaction as their preferred means of learning about e-government products and services, but the female subjects established their gender roles and duties as imposing limits on the available time and movement of most married females. Although the unmarried females expressed some level of independence, they still paid attention to society's gender expectations. Thus, gender roles will influence the way female subjects employ social interaction as a means of e-government awareness.

Gender inequity

The gender inequity imposed by religious observance was noted among the Hausa subjects. From the subjects' responses and the researcher's observation it was noted that female subjects from the Hausa ethnic society do not freely interact with male strangers or visitors and in most cases do not sit together publically with a member of the opposite gender to discuss issues. This trait affected some aspects of this research; however, it was not noted among the subjects from the Yoruba and Ibo communities.

Although this was not noticed among the subjects of the other two indigenous societies, the social stigma attached to constant public appearances by females was found to be a discouraging trait among female subjects from all three ethic societies. According to most female subjects, in most cases this convention could prevent them from attending training or social gatherings where such innovation could be discussed. Thus, gender inequity was noted to influence the level of social interaction of the female subjects within the three indigenous societies.

In continuation of the analysis, the chapter will evaluate the findings of the cultural elements.

Power distance

High power distance was noted within the Yoruba and Hausa subjects. The subjects from Hausa and Yoruba indigenous areas were noted to respect and revere religious leaders and traditional rulers. The opinions of the traditional leaders are not questioned and they often do not consult their citizens, according to the subjects from the two ethnic societies. Most of the subjects emphasised that they are expected to obey the traditional rulers' directives or they

could be punished. However, the traditional and religious leaders of the Ibo subjects were not noted to be paid such regard like in other indigenous societies. According to Ibo subjects, many such traditional rulers are just ceremonial heads.

Most of the subjects from the Ibo indigenous society were noted to show more respect for community decisions than directives from their traditional and religious leaders. They believed more in individual achievements and thus tended to be more individualistic in terms of decision making. The subjects emphasised their need to be consulted on issues involving them, but were noted to be respectful of collective decisions.

From the subjects' responses, power distance within the Yoruba and Hausa indigenous societies can influence social interaction; however, this may not be applicable in the Ibo indigenous society, which believes more in collective decisions. The collective beliefs of the Ibo subjects will influence the level of social interaction among the subjects.

Collectivism

Hofstede et al. (2010) also found a collectivist attitude within the country used as a case study for their research.. The subjects from the three indigenous societies displayed this characteristic. The Ibo subjects were noted to show respect for community directives and believed in consultation as the best form of agreement. The Ibo subjects revealed that they prefer individual opinions, but that collective directives will supersede such opinions.

The subjects from the Yoruba and Hausa societies also believe in community projects. They demonstrated enthusiasm for community projects and willingness to participate in such projects was also noted among all three ethnic subjects.

Therefore, the collective nature noted from the Ibo subjects and the interest and willingness to participate in community projects noted among the three ethnic subjects are traits of the societies' collectivist nature. These traits will improve personal interaction and discussion among the societies. Thus, collectivism will influence the level of social interaction as an e-government awareness channel within all three societies, as noted from subjects' responses.

Uncertainty avoidance

Another common characteristic noted among the three ethnic groups was uncertainty avoidance. All the subjects from the three indigenous societies displayed apprehension towards government products and services. However, from the responses of most, the introduction of a familiar user or trainer will lower UA and improve their level of social interaction involving e-government products and services

Therefore, the PD or Collectivist nature noted among the subjects can influence and improve social interaction among the citizens, which will influence the UA, as noted from the subjects' responses.

Short term orientation

The final dimension of culture, as mentioned earlier, is short term orientation. It was noted that it has the potential to influence the Yoruba and Ibo citizens, but not the Hausa. However, if the collective decision is favourable to e-government products and services for Ibo subjects, or the directives of the traditional rulers and religious leaders are favourable to e-

government products and services for Hausa and Yoruba subjects, the influence will reduce the effect of short term orientation on the adoption of e-government products and services.

Finally, such a collective decision (with regard to the Ibo) and the directives of the traditional and religious leaders (for the Yoruba and Hausa) will influence social interaction. Since social interaction is the most preferred channel of communication, cultural traits such as short term orientation are less significant.

5.5.3 Lessons learnt from the case study.

Drawing from the pilot case study and the findings of the main case study, the following discoveries are reiterated and discussed below.

Social interaction was identified as the preferred channel of communication for all subjects. This was noted to influence the perception of the subjects and determine the opinion of most subjects about the adoption of e-government products and services. For example, most subjects expressed the view that the influence of families and friends, the introduction of a familiar person within their community as a trainer and support staff, the collective decisions of their society, the directives of the local kings and religious leaders will influence their opinion to adopt e-government. All these identified activities were aspects of social interactions.

Second, since the subjects were grouped into three categories which comprise those who have used e-government, those who are aware of e-government and those who know nothing about e-government, the subjects' perceptions of the usefulness of e- government will depend mostly on the experiences of those who have used it and are aware of it. Such experiences or exchanges of information involve social interaction, mostly among early adopters (Rogers, 2003; Dimitrova and Chen, 2006). Most existing research shows that the percentages of early adopters who fall under the first categories of subjects in this research are very small compared to the population of developing countries like Nigeria (Heeks, 2002; Heeks and Bailur, 2006). Next, the directives of religious leaders, the local kings in Yoruba and Hausa and the collective decisions of the Ibo will influence perceived usefulness, depending on the content of the information the key leaders are spreading within their communities. Therefore, most of the subjects will be influenced by the content of knowledge within social circles, which is an aspect of social interaction.

Third, trust was also noted to be an issue of consideration for most of the subjects when interacting with e-government technology. This was expressed in terms of trust of the government, as found by Belanger and Carter (2008), trust in e-government, as found by Warkentin et al. (2002) and trust in the e-government products and services delivery personnel, as noted from the subjects' responses and discovered within this research. However, due to the subjects' preferred e-government awareness channel, improved social interaction in the forms of the introduction of familiar trainers and the support of traditional and religious leaders for the Yoruba and Hausa subjects will build subjects' trust, encourage positive attitude towards e-government; hence improve their intention to adopt e-government products and services. For the Ibo, collective decisions in addition to the introduction of well know e-government delivery personnel for the delivery of e-government products and services will improve trust and encourage the diffusion of e-government.

5.6 Evaluating the propositions and conceptual framework

In Chapter 2, section 2.8.2 and 2.9 some theoretical propositions were formed to examine the complex issues of culture and gender, and were refined in Chapter 4 section 4.5.1 for the same purpose. However, an additional proposition was added to improve and help to understand the findings of this research study. Further discussions on the aforementioned 14 research propositions are provided below. The next section discusses the different elements and influences on social interaction as an e-government awareness channel.

Proposition 1: *Gender division of labour will influence social interaction as an e-government awareness channel.*

From the subjects' responses, analysis of the gender division of labour noted that the majority of the subjects believed in and confirmed the existence of such a trait within their community and gave instances of occurrences in their lives; however, the few subjects with a different opinion believed that such views are just a trick of the mind and that anybody can become what anybody wants to become. This opinion was noted to be mostly found among literate members of the subjects.

However, when they researcher asked what some of the subjects thought about computer jobs with regard to gender, opinions were divided but mostly followed the gender perspective. While most of the male gender likened computer jobs to secretarial jobs which are favourable to women, the majority of the female gender perceived them to be more technical and related the type of job to the male gender. When some of the subjects were again asked if the type of job influences the information one knows, the majority were of the opinion that information is a matter of interest.

In any case, it was noted that social interaction is the most viable means among the subjects for leaning about e-government products and services. The interest the subjects will have in discussing such innovations will be affected by their beliefs and regard for gender with regard to type of job. Men will speak of men's issues and women will discuss women's issues. Therefore, society's gender division of labour will have an influence on social interaction as an e-government awareness channel.

The findings provided support for Henwood's (1993) study on Women and Technology, and Hafkin and Taggart (2001), where it was shown that women should be participating in the production of technology to increase their participation in usage. If female jobs include the production or delivery of e-government products and services, it will also increase their participation, thereby enhancing the support for female interpersonal interaction when e-government products and services are involved.

Proposition 2: *l Gender access will influence social interaction as an e-government awareness channel.*

Evaluating the subjects' responses from all the indigenous societies, it was discovered that the extent of accessibility varies among female genders of different societies, so it will be difficult to try to give a general analysis of the research findings. Scrutinising the same evidence via the examination technique, it was discovered that the majority of the subjects

can only access such technology through cyber cafés. Most of the female subjects cannot easily access these cyber cafés. For the Hausa female subjects, the restriction is often a result of the domination of the male gender in such places. It was noted that, due to religious observance, men and women don't sit together in public places, according to subjects from the Hausa indigenous area. However, this is not the case for the subjects from Yoruba and Ibo. The female subjects exercise more freedom of association than their Hausa counterparts, but such measurement is outside the scope of this research.

Second, when subjects were asked if they have free access to their preferred channels of e-government diffusion, no known restrictions were noted from their responses, but society or religious observance was noted to influence the level of social interactions with individuals outside family members, especially among the female gender. While all the subjects from the Yoruba and Ibo communities seemed to exercise more freedom in terms of association and movement, the social stigma attached to women's free social interaction with individuals outside their family members influenced their perception of social interaction as an e-government channel of communication. This was also noted among the Hausa subjects and the strong influence of religion further reinforces this trait among them.

Due to religious influence, it was noted that among Hausa subjects the type of gender that is involved in the delivery of e-government products and services will influence the type of gender participation. The involvement of the male gender in the delivery of e-government products and services will discourage female participation and the reverse is true for a female leading such a campaign. Such gender observance will constitute a major influence on the usage of social interaction as an e-government awareness channel, especially since men are more likely to be in a position to acquire e-government knowledge first. The finding shows that physical access alone could be important, but the decision making as a result of social beliefs is as important as physical access. Since access is measured as access to social interaction, the decisions of the women in such societies could be affected by gender regard within the society, which could pose a barrier to accessing e-government technology (Cockburn, 1985; Gillard et al, 2008). The restricted access imposed by social and religious observance within the indigenous societies will influence social interaction as a preferred e-government channel of communication.

Proposition 3: *Resource control will not influence social interaction as an e-government awareness channel.*

The control of resources was investigated as the control of the decision to acquire e-government skills and the control of e-government technology hardware. The control of such decisions was noted to be a collective decision by males and females for the married subjects and individual decisions for the single subjects. However, the male genders within the three indigenous societies show more independency when making such decisions, unlike the female subjects from all the indigenous societies. The strict observance of religious rules regarding gender roles make most females subjective to the decisions of their husband, but this is not the case for the unmarried subjects. Apathy towards e-government was noted from most of the female subjects, largely due to religious observance in the case of Hausa subjects, but also due to a lack of personal interest from the majority of the female subjects from the three ethnic societies which contributes to z choice of activities when faced with such social

forums for government campaigns. While the married subjects seek the approval of their partners, the unmarried subjects consider personal opinion for such ventures. Such a trait was not considered to be a general phenomenon.

However, social interaction could be in the form of personal discussions within family or the influence of friends and relatives, which was not restricted in any form or had any cost associated with it, as noted by the researcher. These findings show that, as found by Henwood (1993) depending on the aspect of gender, decision making might not affect the ability of any gender to adopt e-government products and services when considering social interaction as an effective e-government awareness channel. So, judging by the subjects' responses, the control of resources was not found to influence the subjects when employing social interaction as an e-government awareness channel of communication, since information is a matter of interest.

Proposition 4: *Gender in technology will influence social interaction as an e-government awareness channel.*

Gender in technology was also considered during the study. The research examines this element by asking the subjects what they think about the exchange of knowledge and ideas with the opposite gender. The majority of the subjects from the Yoruba and Ibo communities showed no resentment regarding the type of gender, but a few stated that they would mind the type of gender, mostly because of their status in the society. In this case, this view was deeper among the Hausa subjects. All the subjects interviewed within the Hausa indigenous society expressed the view that, if such a knowledge exchange would involve social interaction, women should be taught by women while men should be taught by men.

However, similarity was noted between the three indigenous subjects on the issue of a well-known person delivering or supporting the use of e-government products and services. The majority of the subjects highlighted this issue. It was noted that the Ibo and Yoruba subjects were not bothered about the type of gender involved in the social interaction as a channel of communication for e-government diffusion, but the familiarity of the person was important. This is also the case among Hausa subjects. It was noted that the familiarity of people involved in the exchange of knowledge about e-government products and services would reduce anxiety and build trust about the programme, thus encouraging a positive attitude towards participating in such programmes or campaigns.

Since social interaction was noted to be the best choice of e-government awareness channel of communication for the majority of the subjects, the introduction of an unfamiliar person to deliver or support the usage of e-government products and services would influence the subjects' engagement; this can be said of all three indigenous ethnic societies. Secondly, the introduction of the opposite gender type for such activities will equally deepen the trait for the Hausa subjects. Considering the above reasoning, it is therefore found that gender in technology will influence social interaction as an e-government channel of communication.

The work of Tshukundu (2002), Elson (1995) and Chapman and Slaymaker (2002) recognised that women should be active in the development and delivery of such technology to improve effective deployment. Therefore, the involvement of women in the delivery of e-

government products and services will improve effective deployment, as found in this research when social interaction is the main available means of e-government awareness.

Proposition 5: *Gender role will influence social interaction as an e-government awareness channel.*

Existing research shows that the social reality of gender in every locality should be evaluated based on the gender role (Chapman and Slaymaker, 2002; Rowbotham, 1995; Hafkin and Taggart, 2001). The current research findings show that, as a result of gender roles and according to the subjects' responses, the domestic role naturally assigned to the female gender poses a strong barrier to the time available for women to employ social interaction as an e-government awareness channel. Studies recognise that both genders are not positioned the same way in every society (Gillard et al., 2008). Women spend most of their time taking care of children and the housework, which puts them in a disadvantageous position since they can't leave the family house or spend enough time interacting socially to further their knowledge about e-government products and services. The three indigenous societies were noted to have a clear regard for such roles and women from such societies have less time for social interaction as an e-government awareness channel. This, in turn, will affect their participation when employing social interaction as a means of e-government diffusion.

Proposition 6: *Gender role will influence the perceived usefulness of e-government products and services.*

Gender roles were expressed by the subjects from the three indigenous societies. While the married males enjoy what could be said to be uninterruptable access to social interaction as a channel of communication, their female counterparts emphasised constraints imposed by their roles and duties on the time available to use this channel. Among some of the married males, the question of how the system would improve their daily status appeared to be more important to them. This view was also common among the unmarried subjects who showed more interest in the usefulness of the system to their present needs rather than their role as male or female. Considering the replies from most subjects, it was obvious that the unmarried subjects showed more interest in how the system would improve their daily lives, while the married ones expressed interest in how the system would help their present role of being a father or a mother.

For the married female subjects, their role as mothers put them in a less advantage position to participate in most forms of social interaction due to time and social expectations. Thus, the gender role for female subjects will influence the level of participation in social interaction to discuss government products and services. However, most of the subjects showed they were willing to participate when projects involve knowledge about children's health or education, which they likened to the government immunisation campaign against polio. This shows that perception of the importance of e-government intervention for their immediate needs shapes their perception and intention to participate in forms of social interaction involving e-government products and services. Therefore, it was noted that gender roles influence the time available for social interaction and also influence the perceived usefulness of the system, considering the subjects' present conditions.

For the unmarried female and male subjects, the result is different. While some of the unmarried female subjects cited social expectations and parents' or guardians' restrictions as factors that could limit their level of social interaction when faced with e-government products and services, their male counterparts expressed much more freedom to access or participate in any form of social interaction. Thus, the gender role of being a female was considered to influence social interaction as an e-government channel of communication. However, all the males and females emphasised the need to understand that the system will be useful to them for whatever purpose they have in mind and will also support and improve their present conditions. From the above analysis, it can be deduced that gender roles will influence the perceived usefulness of e-government among the unmarried subjects of all the three ethnic societies.

Best and Maier (2007) found that women have a specific gender usage pattern and the design of ICT does not reflect the needs of the female gender (Mitter, 2004; Hafkin, 2000; Arun and Auna, 2002; Archibald et al., 2005). Thus, from the research findings, most women evaluate the system based on its importance and support to their daily lives and will show willingness to participate in any form of social interaction involving e-government products and services if the technology supports their role and their specific usage pattern.

Proposition 7: *Gender inequity will influence social interaction as an e-government awareness channel.*

From the subjects' responses, there is no known identified law or policy that discriminates against any gender or access to technology. However, due to the preferred system of learning (social interaction) among the subjects of the three indigenous societies, some social barriers were noted. As cited in the gender role paragraph, the natural role of women, gender in technology, the society's gender distribution of labour and the social stigma attached to female freedom of association interferes in women's ability to socially interact.

Furthermore, according to most of the subjects from the Hausa society, male and female genders are not allowed to sit publicly or learn together. Therefore, considering the fact that government jobs are said to be dominated by the male gender and the most preferred form of information exchange is through social interaction, it could be said that such practises could influence social interaction as an e-government awareness channel.

Thus, the above discussion of aspects of gender revealed by the responses from the subjects shows that social gender inequity was noted among the three indigenous societies. Therefore, gender inequity will influence social interaction as an e-government diffusion channel. Most research involving gender and ICT states the importance of this imbalance between the way men and women are regarded in society and therefore emphasises its negative effect on the development of new technology like e-government (Mitter, 2005; Hafkin, 2000; Arun and Auna, 2002; Archibald et al., 2005; Best and Maier, 2007; Chapman and Slaymaker, 2002; Rowbotham, 1995; Hafkin and Taggart, 2001).

Proposition 8: *High Power distance will influence social interaction as an e-government awareness channel.*

Hofstede et al. (2010, p61) define power distance "as the extent to which the less powerful members of society within a country expect and accept that power is distributed unequally." According to the Yoruba and Hausa subjects, the supremacy of the most respected traditional rulers is well recognised and their decisions are generally accepted without many questions, but the subjects from the Ibo indigenous society do not see their traditional leaders in such a role.

Although the subjects from the Ibo society show respect for their traditional leaders, the limitations of such leaders when it comes to decision making involving the society was emphasised. Secondly, the subjects from the Yoruba and Hausa respect and show loyalty to both traditional rulers and religious leaders, but the Ibo subjects show less recognition and express less loyalty to such leaders.

Furthermore, according to Hofstede et al.'s (2010) definition, the cultural dimension of high power distance was noted within Yoruba and Hausa subjects, but was not noted among the subjects from the Ibo society who believe more in collective decisions. From the subjects' responses, the high power distance within the Yoruba and Hausa indigenous society can influence social interaction, although this is less likely to be applicable in the Ibo indigenous society which believes more in their collective decisions. If the traditional and religious leaders approve of e-government products and services they will promote social interaction among subjects on this topic; otherwise, they will discourage citizens' participation in forums for such interaction. The collective nature of the Ibo society puts them at an advantage regarding the promotion of social interaction. From the subjects' responses, the high power distance within the society will influence social interaction as an e-government channel of communication. Similar findings were equally discovered by other researchers (Warkentin et al., 2002; Tan et al., 1995; Hasan and Dista, 1999; Yeniyurt and Townsend, 2003).

Proposition 9: *Collectivism will influence social interaction as an e-government awareness channel.*

According to Hofstede and Hofstede (2005), there is a collectivist attitude among the three ethnic societies. They define the term 'collectivist attitude' as the belief that the interests of the society prevail over the interests of the individual. The subjects from the three indigenous societies displayed this characteristic, since they emphasised the willingness to participate in community projects and show obedience to collective decisions rather than individual opinion.

The responses of the subjects from the Ibo ethnic society were noted to be individualistic, but generally they were all collectivist in nature. If the society takes a favourable position towards e-government products and services, the collectivist nature of the society will influence the social interaction among the subjects, as noted from their responses. According to Aaker and Maheswaran (1997), a collectivist culture has an attitude towards building relationships which will enhance social interaction within the society.

All the subjects from the three indigenous societies emphasised and showed their interest in participation in community projects. This shows that if the e-government products and services distribution or campaign is made a community project, subjects will participate as a result of the collectivist nature of the societies. Therefore, collectivism will influence social interaction as an e-government channel of communication.

Proposition 10: Social interaction as an e-government awareness channel will influence uncertainty avoidance.

Another common characteristic noted among the three ethnic subjects was uncertainty avoidance. From the subjects' responses, it was noted that all the subjects displayed apprehension regarding unclear variables and expressed less interest towards the adoption of such innovations. Some existing research has also noted this finding (Warkentin et al, 2002; Yeniyurt and Townsend., 2003). The subjects emphasised their need to understand how the information that will be contained in the e-government systems will be used and for what purpose and whether the system will serve their daily needs. Some subjects questioned the authenticity of such projects and believed from past experience that such projects do not work in their country. When the researcher sought to establish whether the subjects would be more comfortable if e-government training or delivery is managed and handled by their community or perhaps if community members provided support for the usage of e-government products and services, most of the subjects strongly supported such a method of e-government products and services delivery and showed willingness to participate.

Moreover, most of the subjects from the three indigenous societies agreed with the fact that the introduction of a familiar user or trainer would reduce their apprehensive attitude towards such projects and improve their interaction with the trainer. As noted earlier in the above discussions, such an introduction would improve social interaction among the subjects within their social circle. Therefore, social interaction as an e-government communication channel will influence UA.

Proposition 11: Social interaction as an e-government awareness channel will influence short term orientation.

Hofstede and Hofstede (2005) define short term orientation as the fostering of virtues related to the past and present and future expectancy. It shows the relative result expectancy inherent in a society. In this research, short term orientation was noted from the responses of the subjects from the Yoruba and Ibo communities; however, such a trait was not obviously expressed by the subjects from the Hausa indigenous society. When the researcher asked subjects of the duration they could take to learn of e-government usage, most of the subjects from the Yoruba and Ibo ethnic societies made references to time and immediate gains from the e-government system as their top consideration before acquiring such training. This was not the case with the Hausa subjects, who were more concerned with the individual/s responsible for the system.

When analysing the Yoruba and Ibo subjects' responses, short term orientation was not noted among the subjects regarding society collective decisions for Ibo subjects and the directives of the traditional kings and religious leaders for Yoruba subjects. Short term orientation was initially noted to have the potential to militate against the perception and intention to adopt e-government among Yoruba and Ibo subjects, but was not noted as a barrier among the Hausa subjects. However, analysis shows, probably due to social interaction which is the most preferred channel of communication within the three indigenous societies, such a cultural trait was not an issue for consideration by the subjects after taking into consideration the influences of PD and collectivism within their communities. Therefore, social interaction will

influence short term orientation, as noted from the subjects from the three indigenous ethnic societies.

Proposition 12: *Social interaction as an e-government awareness channel will influence perceived usefulness.*

According to Venkatesh and Davis (2000, p. 187), perceived usefulness is the extent to which an individual believes a system will enhance his or her job performance. They concluded that the higher the perceived usefulness of a new technology, the more likely it is that the system will be adopted by citizens. When evaluating subjects' responses, individual perception about the usefulness of e-government was noted mostly among the 1st and 2nd category of subjects, as described in Chapters 2, 3 and 4. Most category 3 subjects from the Hausa and Yoruba communities view usefulness as personal gain, but believe that the directives of the traditional or religious leaders could mean that the system is beneficial to them.

The subjects from the Ibo society view the decision of their community as more important than their individual opinions. Although some Ibo subjects express contrary views, they still affirm the fact that they will abide by the decision of the community. Although fear of being reprimanded as a deviant was raised as a reason for obedience to the community and traditional leaders' decisions, the scope of this study does not cover this aspect, so further research will be recommended to explore this area.

Therefore, from the analysis of the subjects' responses, it can be said that the positive disposition of the traditional and religious leaders within the Hausa and Yoruba societies, and the positive disposition of the Ibo community, will encourage social interaction; hence, this will improve individuals' views on the perceived usefulness of e-government products and services, mostly category 3 subjects.

Proposition 13: *Social interaction as an e-government awareness channel will influence intention to adopt e-government.*

The intention to adopt e-government could be described as the predisposition of an individual to use an e-government system. TAM states that the decision to adopt is based on the subjective perception on the part of the user and subjective perception is dependent on two identified physiological variables: ease of use and perceived usefulness, as explained in Chapter 2, section 2.5. From the analysis of the subjects' responses, most of the subjects from the Yoruba and Hausa indigenous society have a subjective and unflinching loyalty to the decisions of the traditional and religious leaders within their society. If such decisions are favourable towards e-government products and services, they will improve citizens' level of social interaction about e-government products and services. This improved social interaction will reduce UA and make LTO less significant to most subjects from these areas. The same logic is applicable to most subjects from the Ibo indigenous society towards community decisions.

Second, against the odds of gender discrimination, most subjects from these indigenous ethnic societies will improve their knowledge faster about the introduction of e-government, which will eventually influence their perceptions and their predisposition about e-government products and services. Improved social interaction will hasten and encourage the transfer of information among citizens. If positive information is being exchanged about e-government, it will circulate fast and influence the opinions and perceptions of citizens about e-

government. Therefore, social interaction will influence intention to adopt e-government products and services. Some other researchers have noted this fact in their findings (Roger, 2003; Venkatesh and Davis, 2000; Lin, 2003; Dimitrova and Chen, 2006, Venkatesh et al, 2003).

Proposition 14: *Social interaction as a channel of e-government diffusion will influence trust of the personnel providing e-government products and services.*

Recent studies have included trust in the study of user acceptance of new technology (Pavlou and Fygenson, 2006; Slyke et al, 2004) and many have included it in the study of e-government adoption (Warkentin et al, 2002). Trust has gained prominence in the research of e-government adoption and its moderating effect is constantly emphasised in e-government research.

From the subjects' responses, trust was noted to influence the opinions of the subjects with regard to the adoption of e-government. It was noted among Hausa subjects due to religious observance and among the Yoruba and Ibo due to failure of such government innovations in the past. This finding was also noted by other researchers (Warkentin et al, 2002). However, from the analysis of the responses it was discovered that such feelings will be reduced as a result of the introduction of familiar e-government delivery personnel. If the introduction of familiar e-government delivery personnel will improve social interaction, social interaction therefore will influence trust in e-government products and services. However, further research is proposed on the effect of culture and gender on the trust required for improved e-government diffusion in developing countries like Nigeria.

Having analysed the findings of the case study as they relate to the propositional constructs of this research, the next section will draw from the analysis of the findings and consider the appropriateness of the research framework.

5.6.1 Review of the conceptual framework

Due to the impact of social interaction on the perceived usefulness of e-government, and the trust of e-government products and services, the earlier framework was extended. The conceptual framework of the research was initially formed to examine the influence of culture and gender on e-government diffusion in a multi-cultural society. The framework was developed from a review of the theoretical literature in order to examine the cultural and gender influences on e-government channels of communication, which is one of the vital stages of diffusion, according to Roger (2003). The framework was made up of three constructs: e-government channels of communication, the perceived usefulness of e-government and intention to adopt e-government. This was used to examine culture and gender influences on identified e-government awareness channels, which include media channels, Internet based channels and social interaction channels. The framework was used for the pilot study.

The findings of the pilot study necessitated modification to the framework. It was discovered that, within the research areas, some forms of channels of communication of e-government were less significant to the subjects of the indigenous area, with the exception of social interaction. Secondly, it was discovered that it will be almost impossible to examine the three

identified channels of communication using a large sample. Hence, the framework was altered to reflect the changes as a result of the pilot study.

The construct of the framework for the case study includes social interaction as a means of e-government communication, the perceived usefulness of e-government and the intention to adopt e-government products and services. The framework was again used to examine culture and gender. However, findings from the case study show that the relationships between culture, gender and the constructs vary. While all relate to each other in a single direction, some have reversed relationships. It was also discovered from the study that trust was a factor of consideration when culture and gender are being examined in a multi-cultural society like Nigeria. This was noted and was also reflected in the framework, as shown in the previous section. The constructs of the framework now include the social interaction channel of communication of e-government, the perceived usefulness of e-government, the intention to adopt e-government and the trust of personnel providing e-government products and services, as shown below in Figure 5.5.

Finally, it was noted that social interaction has an influence on the perceived usefulness of e-government, depending on the content of the leaders' decisions within the indigenous societies. This is reflected by including an extension arrow from the social interaction box to perceived usefulness in the framework, as shown below.
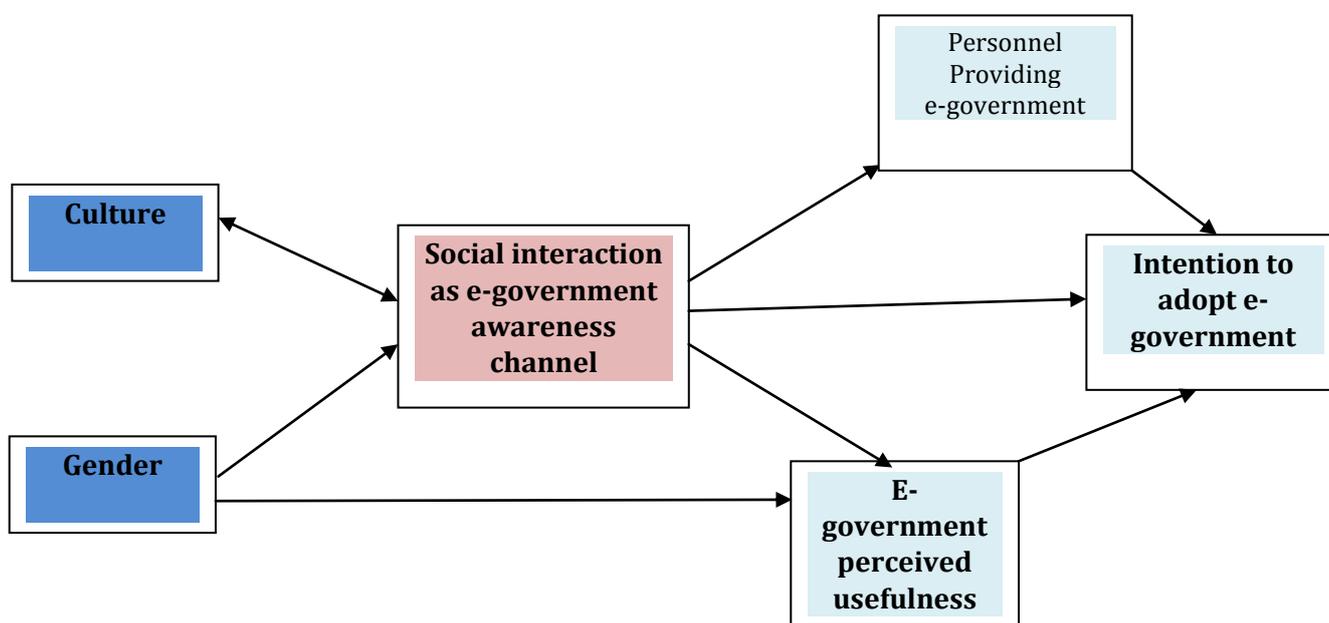
Figure 5.5: The conceptual framework after case study

5.7 Summary

The earlier formed conceptual framework was amended due to the new findings in this chapter and explanations for these changes were provided. Future directions of this research should now include extending the dimension used in this research and examining other aspects of e-government diffusion moderators such as religion and trust of personnel

providing e-government products and services. Demographic data obtained during the research can also be used to determine its influence on the research findings, e.g. marriage; thereby strengthening this research's findings.

The following chapter will draw on the results of this study and utilise propositions to validate the result. The next chapter (Chapter 6) will also discuss the findings in light of the previous literature. Finally, it will also offer a discussion on the validation of the findings.

CHAPTER 6

6. Validation and discussion

6.1 Introduction

The previous chapter presented the findings obtained from the case study research; this chapter presents the analysis of the findings of this study. However, the purpose of this chapter is to validate and reflect upon the findings from Chapter 2 from a theoretical perspective. It also discusses the empirical issues that have been reported from the case study findings in the previous chapter.

6.2 Background information

Overall, 153 subjects were interviewed for this study. Although 180 subjects were proposed, shortfalls occurred, for which explanations have been provided in Chapter 5, section 5.3.2 and section 5.4.4. The overall numbers of interviews amounted to 229 transcripts, as 76 subjects were later contacted for confirmation of the research findings. Identification of subjects was through self identification.

6.3 Case study process validation

To establish and demonstrate rigour in the findings of the research, validity should be undertaken both prior to and after final data collection (Straub et al, 2004; Yin, 2009). The validation process suggested for case study research is one obtained as a result of multiple sources of data collection (Yin, 2009). Although application of validation is recommended during case study design, data collection and analysis, it is essential in a case where a study employs newly created protocols for data collection (Yin, 2009). This study created new research protocols such as the propositions and conceptual framework. Hence, utmost care was taken to ensure that the findings and analysis results would validate the case study design, data collection and analysis processes. The process of development and validation of the research findings was already described in Chapter 3, sections 3.2.2, 3.2.4 and 3.2.5. This section provides an overall picture of the validation process and also briefly discusses whether the undertaken validity measures and their outcomes are equivalent to the recommendations made in IS research. The recommended validities include: construct validity, internal validity, external validity and reliability as general method bias (Yin, 2009). Table 6.1 provides a summary of the case study validation processes, as adapted from Yin (2009).

Table 6.1: Case study validation table

Test	Case study tactic	Phase of the research in which the tactic was applied
Construct Validity	Use of multiple sources of evidence Established chain of evidence Review case study report	Data collection sources, researcher's observation notes, semi-structured interviews and references to

		archive documents and open –ended questionnaire. Validation of research findings as shown in Chapters 4,5 and 6
Internal Validity	Application of explanation building in the data analysis	Data analysis as described in Chapter 5
External Validity	Use of replication logic in the multiple embedded case study	Research design as shown in Chapters 3, 4 and 5 involving the three indigenous societies. Use of the same protocols in three different ethnic societies.
Reliability	Use of well documented case study protocols
A case study database	Data collection documents as shown in the attached Appendices and the case study data formed from subjects' responses using theoretical propositions as guiding principles

Source: Yin (2009)

Amongst the aforementioned validities, this research examined all the suggestions within case study research (Yin, 2009).

For data collection, multiple sources were used. These include: researcher's observation notes, review of archive documents, subject interviews and open ended questions questionnaires. According to Yin (2009), "the major strength of case study data collection lies in the opportunity to use different sources of evidence collection which provides a converging line of enquiry which is described as triangulation" (Yin, 2009:114). As mentioned earlier, verification and validation of the results was obtained using multiple sources, for example, making references to researcher's observation notes and archive documents and going back to the subjects for confirmation and validation of the research findings which include a comparison to theory. Figure 6.1 below illustrates the sources of data collection and review using a diagram adapted from Yin (2009).
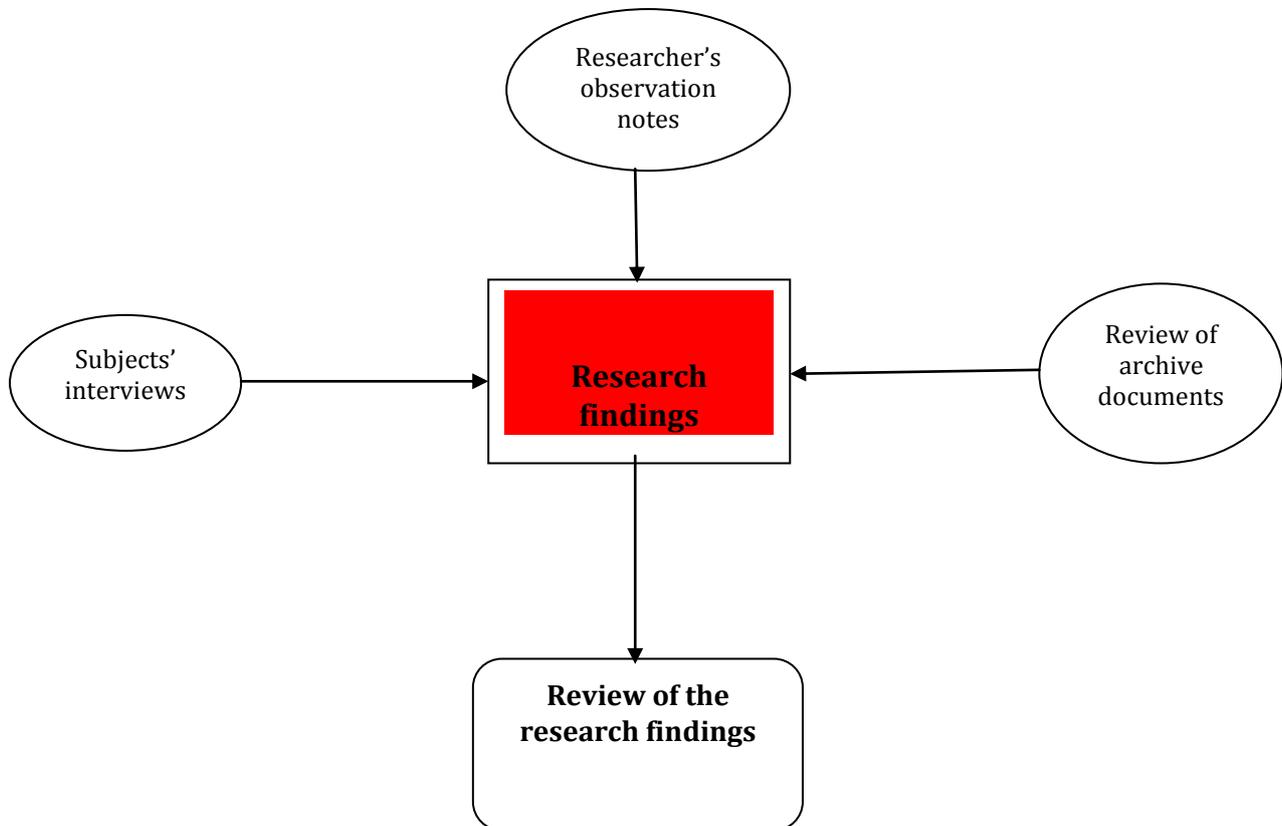
Figure 6.1: Sources of data for the research

Source: Yin (2009).

The data acquired by examining citizens from three different ethnic societies were compared to provide multiple measures of the same phenomenon; thereby addressing the potential problem of construct validity. This process provided data triangulation.

As mentioned, a multiple case study research process was pursued by this study. As a result, an improvement of the internal and external validity of the research was achieved in the following ways: application of the same data collection protocols in the three embedded case studies, separate analysis of each case's findings and cross case findings analysis drawn between the three case studies using explanation building (explained and shown in Chapter 5).   According to Yin (2009), an analytical tactic of pattern matching is one way of addressing internal validity. Figure 6.2 below (adapted from Yin, 2009) illustrates the logic replication in the research process.
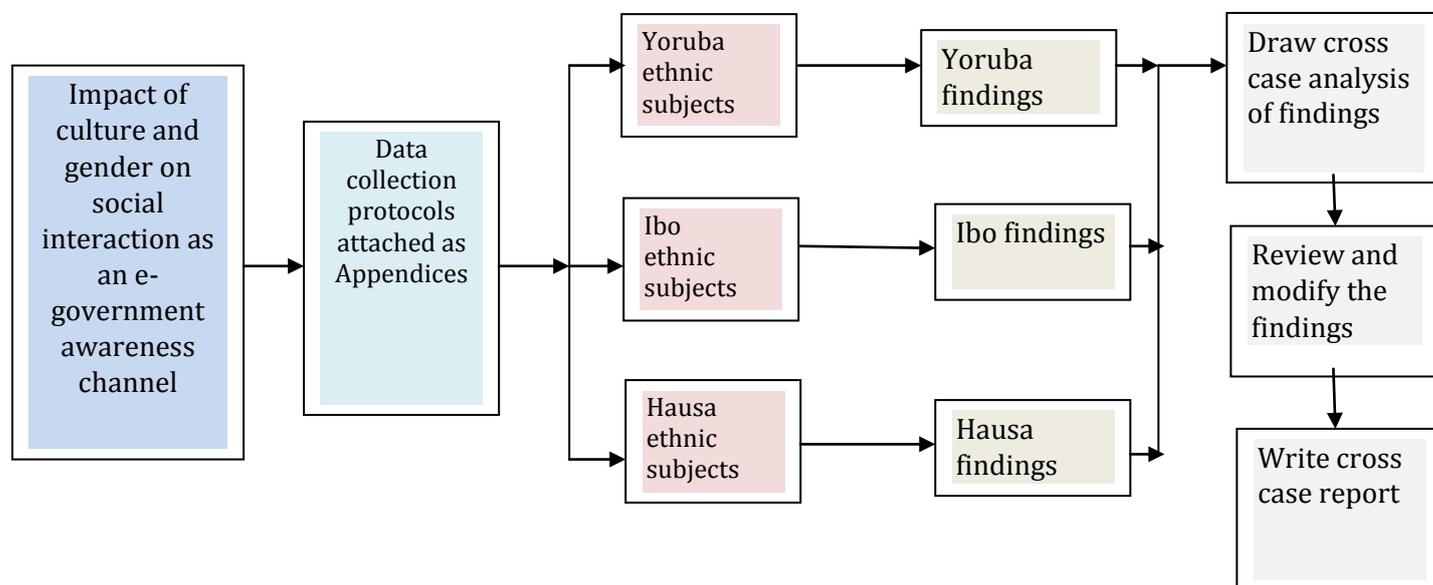
Figure 6.2: logic replication in this research

Source: Yin, 2009

To improve the reliability of the case studies, tabular documentation of the subjects' responses formed the database of this research report (Appendix 7). It should be noted that the responses that were in raw form were reduced to phrases and short sentences, but offer enough background data for an independent verification of the research findings. Second, a set of well documented protocols for data collection were equally formed (Appendices 1-6). These protocols provided guidance on case study replication. By doing so, the reliability of the case study is enhanced. The case study report findings maintain a chain of evidence by which an independent investigator could trace back the findings of the case study. There were sufficient citations from the case study database linking the findings to allow replication procedures when collecting the data for the three embedded case studies. According to Yin (2009), the use of multiply sources of evidence, the development of a case study data base and maintaining a chain of data collection evidence reflects a concern for construct validity and reliability.

The above explanation clearly demonstrates that this study meets the standard criteria of all types of validities, as stated in the case study validation table (Yin, 2009). This implies that the validated tactics provided an effective measure of the theoretical constructs used in the conceptual model. In turn, this suggests that measures of this research study demonstrate an appropriate level of quality.

6.4 Research propositions

Case study research provided insights into the influence of culture and gender on an aspect of e-government diffusion in three indigenous ethnic societies in Nigeria. It was discovered that, even within the same country, some preformed propositions could have an impact upon one indigenous society, but have little or no influence on the others. This had diverse manifestations in the three ethnic groups.

Although the explanation and discussion of each proposition included in this study was provided in the following sections, this section simply provides support for the propositions proposed in Chapter 2, section 2.8.2 & 2.9 and modified in Chapters 4, section 4.5.1 and chapter 5, section5.6 and states whether they are supported by the data or not. A total of 13 research propositions were tested and one was added as a result of findings in Chapter 5, totalling 14 research propositions. The propositions were tested to examine if the independent variables significantly explained the dependent variables. Of the 14 research propositions, only one (P3) was not supported by the data. The fact that the remaining 13 research propositions were supported by the data means that all but one independent variable significantly explained the influence of culture and gender on social interaction as a means of e-government awareness channels. A total of 12 respondents were used to validate the results; six respondents were from the original case study and the other six respondents were selected through self identification. Four participants were selected from each of the indigenous societies and gender was also considered, as in other cases. This strategy was used to ensure the balance of gender bias on the research validation findings.

Proposition 1: *Gender division of labour will influence social interaction as an e-government awareness channel.*

Of the 12 respondents, 11 noted that the division of labour in their society influenced the level of information exchange between genders. Although some respondents emphasised that individual literacy levels have a major role on this cultural trait, they still noted society's regard for gender types of labour influencing the interpersonal relationships of genders within the society.

According to a 25 year old businesswoman from the Ibo society "*It is believed that a woman's role is to take care of the children, cook and do house chores. Since women are meant to be seen not heard, anyone that goes out of her way to get information is considered as being too forward and disrespectful and dabbling in matters that doesn't concern her.*" However, in modern society, most women, especially those who are educated, have a good job and interact with both genders in the course of their job. Opinions and information are shared, hence providing them with access to information also accessible to men. Thus, the division of labour affects the level of interpersonal discussion amongst females because men believe that women with highly placed jobs in the community do not have time for their family and are not good mothers and wives; a trait considered to be most important within their society. Therefore, it is believed that women's jobs should be limited to raising their families, thereby making interaction with outsiders difficult. In turn, this limits women and poses barriers to the amount of acquired external information. Similar views were shared by 11 respondents. This supported this study's findings that the gender division of labour, as

observed within the selected indigenous societies of Nigeria, will influence social interaction within the three societies.

Proposition 2: *Gender access will influence social interaction as an e-government awareness channel.*

Of the 12 respondents, 11 supported the findings that the level of gender access to inter personal interactions will influence social interaction as an e-government awareness channel. It is believed that men and women are regarded differently in the societies so the level of interaction within genders will be different. While men are free to interact with any gender, women have to be cautious, especially with individuals from the opposite gender who are unfamiliar to the woman's family.

A 38 year old female respondent from the Yoruba indigenous society, a public servant said "*inasmuch as we women can interact freely, we employ caution when interacting with a man, more so when he is not a member of the woman's family to avoid some negative insinuations.*"

Since female interaction with mostly unfamiliar males can generate negative insinuations as stated above, it is believed that most women in the societies will attempt to avoid such remarks being made about them; thereby, limiting the level of social interaction within their indigenous societies. Thus, such a gender trait will pose a limit to female interpersonal interaction and this will, in turn, influence social interaction as an e-government diffusion channel.

Proposition 3: *Resource control will not influence social interaction as an e-government awareness channel.*

Only two citizens did not support the finding that the control of resources depends on an individual earner. Women, as well as men, control their own resources. For example, it was noted that most working class women decide what to do with their salary , although it was noted that in most cases consultations are necessary as a mark of respect, but they are not a cultural obligation for married couples. The usage of such resources thus becomes an individual decision and, most of the time, is channelled towards personal interest, as noted previously in pilot research findings.

A 35 year old female respondent from the Hausa indigenous society, a lawyer, said "control of the resources depends on the individuals and understanding of the interested parties."

Another 25 year old Ibo female respondent, a business manager, said "most women, especially the unmarried ones, will feel that acquiring knowledge about e-government products and services will be a wasteful venture because they will not need it for their daily life operations so will not be interested, so getting them to develop interest is important."

Thus, the control of resources is observed to be an individual decision within the case study area, but could be regulated by interests, understanding between a couple and social status. However, the ability to interact was not related to the control of resources, so the gender aspect of resource control could not be noted to have any relationship with social interaction as a means of e-government awareness.

Proposition 4: *Gender in technology will influence social interaction as an e-government awareness channel.*

Every respondent agrees to the findings that the type of gender involved in the enlightenment and distribution of the e-government products and services will influence the levels of interest of participation in such a programme.

According to a 53 year old female businesswoman from the Yoruba indigenous society "the trainers must be people of unquestionable character that understand the sacrosant institution of marriage to know how to handle the married women before they will get involved with such programme."

Another 38 year old female public servant of Yoruba decent said "gender type and familiarity of the e-government trainers will greatly influence interpersonal discussion, but the trainers must prove themselves to be worthy and trustworthy."

This shows that there will be improved participation and inter personal interaction between the people responsible for e-government products and services delivery and the citizens if the e-government trainers are familiar, trustworthy and of the same gender type. Therefore, the gender aspect of gender in technology will influence social interaction as an e-government awareness channel. The following two propositions were analysed together due to the similarities noted from the responses of the subjects.

Proposition 5: *Gender role will influence social interaction as an e-government awareness channel.*

Proposition 6: *Gender role will influence the perceived usefulness of e-government products and services.*

The above two propositions are addressed together in this section. Few respondents believed that gender roles will not influence social interaction as an e-government awareness channel. Among the 12 respondents, only three respondents support the above fact, contrary to the research findings.

According to a 43 year old female civil servant from the Ibo indigenous society, "such gender role interferences are dependent on individuals. Most women make efforts to interact with their peers. Women engage in all kinds of activities, even at the market level. Learning about new phone tunes is very common." She said that they may not understand the details of the service provider's packages but they are interested in the end point.

However, she still mentioned the fact that most women make an effort to interact with one another. So, the majority of the respondents expressed opinions supporting this later claim.

A 53 year old university lecturer from the Ibo indigenous society expresses support for this later opinion; in his reply, he said that the division of family responsibilities is skewed in favour of men, thereby giving them more time to interact with things like technology.

In addition, a 25 year old female business manager from the Ibo indigenous society provided a view that also supports the research findings. She said "it is believed that women's role in the society is taking care of the family and being in the kitchen, men are most likely to have access to information because (i) they always get the formal education (ii)they are believed

to be the head of the family so if there is any information to be dispensed, the men should be the ones to know about it and take necessary action and they also will now consider whether the information will be useful to the women or not, which in most cases they believe women are in no better position to make decisions so what is the need of giving her an information that she will never utilise."

The above comments shows that gender division of labour helps to define gender roles in the society and such roles will definitely influence the participation of women in terms of social interaction. In the indigenous societies within the case study, men have more time to interact, thereby subjecting women to a disadvantageous position with regard to interacting fully, as a result of society's regard for gender. Thus, the gender aspect of gender roles will influence social interaction as an e-government communication channel.

Furthermore, some of the respondents express views in support of the findings about gender roles and perceived usefulness.

According to a 25 year old business manager from the Ibo indigenous society, "women will consider how the e-government products and services will help them execute their traditional given roles." She stated that the ability of the e-government system to support their role will go a long way towards influencing their interest in it.

Considering the opinion of the above respondent, and the opinion of the 43 year old female civil servant from the Ibo indigenous society also above, it is inferred that gender roles will influence the perceived usefulness of e-government products and services.

Proposition 7: *Gender inequity will influence social interaction as an e-government awareness channel.*

All the respondents' opinions supported the finding that inequity within the indigenous societies will impact on the level of social interaction of women when considering e-government diffusion. For example, a society's respect and regard for women is often considered to be based on the woman's ability to take care of her children and perform domestic functions, even at the expense of her profession.

According to a 35 year old female lawyer from the Hausa indigenous society, "the findings are quite true and women are to be in charge of the home front doing all the domestic work or supervising and that is why she can't work in an environment that cannot give her enough time to attend to her household work which can actually affect her role as a mother or wife."

Another respondent, a 25 year old business manager from the Ibo community, in support of the findings, said "Such behaviour influences the level of social participation and involvement of women because most indigenous communities see a woman that interacts freely with men and strangers, especially strangers of the opposite sex, as a loose woman and one that doesn't know her boundaries, therefore no woman wants to be seen as such it therefore makes them not participate fully. And also when a woman holds a top political office in the community either as head of a meeting or an organisation that involves full commitment, the men will always complain especially when it coincides with the family work, they always believe that the family should be her first duty, therefore since it causes problem between husband and wife and since no one wants problem in her marriage, they tend to choose their marriage first and shy away from being involved in such programmes."

Considering the opinions, it can be deduced that such social stigma, although not written, weighs heavily on the female level of interaction within the communities, thereby limiting the opportunity of information exchange among them. Thus, such gender social inequity will influence social interaction as an e-government awareness channel.

Proposition 8: *High Power distance will influence social interaction as an e-government awareness channel.*

All the respondents supported the finding that, within their community, the traditional decision makers' opinions would greatly influence the level of the citizens' involvement in interpersonal discussions involving e-government information exchange, since social interaction is the most preferred method of information exchange among the indigenous societies. Such decision makers seldom consult with their subordinates, but the subordinates show unflinching loyalty to their opinions.

A 38 year old public servant of Yoruba descent expressed support for the finding and said within their community they show unalloyed loyalty to the monarch and the traditional institution. So whatever the decision of the local monarchy is on such programmes will be obeyed by most people within the community.

This shows that, depending on the mindset of such traditional ruling authorities, their opinions will influence the level of citizens' interpersonal interaction within their community. If the authority is supportive of e-government, it will enhance citizens' information exchange about e-government and encourage its adoption. Thus, power distance within the indigenous societies will influence the social interaction channel of e-government diffusion.

Proposition 9: *Collectivism will influence social interaction as an e-government awareness channel.*

Every respondent agrees with the conclusion that a collective decision or the involvement of some members of the community in e-government products and services delivery will greatly influence the interpersonal interaction among the citizens of the community.

However, according to a 25 year old business manager from the Ibo indigenous society, "Once a community has their own as their leader (personnel providing e-government products and services), it convinces them easily because they trust that person as one of their own more than a stranger who they believe can mislead them or not tell them the truth." She also said that coming together to work as a community goes a long way to improve interpersonal interaction amongst citizens of a community because members of her indigenous community believe so much in working together, as anyone who is usually not in agreement with a collective decisions or tries to stir trouble are usually seen as being uncooperative and at worst an outcast, and since no one wants to be treated as an outcast everybody wants to be seen as helping to promote peace and cooperation in the community by coming together to work as one.

In such a community with a highly collectivist nature, the favourable decision of the community towards e-government products and services will encourage the citizens to exchange information about such products and services, thereby improving its awareness and influencing subjects' intention to adopt e-government products and services. Thus, the

collectivist nature of the indigenous societies will influence social interaction as a channel of e-government diffusion.

Proposition 10: *Social interaction as an e-government awareness channel will influence uncertainty avoidance.*

All the respondents but one are of the view that the level of inter-relationships and the familiarity of the trainers will impact on the views of the citizens towards e-government products and services.

A 38 year old public servant from the Yoruba indigenous society agrees with the research finding about uncertainty avoidance and expresses the view that "the citizen will participate if the support officers are well known and familiar to them because they will serve as their security for participation."

In support of such views, a 25 year old businesswoman concluded that "people prefer one of their own they can trust and someone they believe understands them. Such person will convince them easily because they believe that the person being one of them will not mislead them once such person is very knowledgeable about what he does and is able to enumerate the advantages and they are made to see how it will help them largely."

However, one of the respondents believed that understanding the benefits of the products and services of e-government will reduce citizens' apprehension towards it.

According to a 35 year old lawyer from the Hausa indigenous society, "letting the citizens know about the purpose and importance of e-government products and services is the key. This shows that the benefits of the e-government usage will be considered also by the citizens."

Therefore, the familiarity of support officers, the exchange of information about the benefits of such products and service among the citizens, which is predominantly achieved through interpersonal interactions, will influence the uncertainty avoidance trait in the culture of a society. Thus, social interaction as an e-government awareness channel will influence the uncertainty avoidance trait in the indigenous societies.

Proposition 11: *Social interaction as an e-government awareness channel will influence short term orientation.*

The citizens attitude towards the outcomes of e-government products and services was identified to be very much affected by past government actions within the case study area and was noted to exert influence on the ability of the citizens to exercise patience and appreciate the benefits of these products and services.

According to a 43 year old civil servant from the Ibo indigenous society, "the attitude of the citizens towards government is as a result of failure of government programmes in the past." She said that such failures created an attitude of indifference among the citizens. However, she suggested that the credibility of town union officials (a traditional authority within her indigenous society) will determine the response and patience of people about the outcome of e-government products and services.

Another respondent, a 35 year old student from the Hausa indigenous society, expressed the view that "although the citizens might not have a positive attitude towards result expectancy of e-government products and services as a result of past events of the government, the respect they have for the traditional and religious leaders will influence most decisions towards such products and services."

In any case, all the respondents supported the research finding. Therefore, social interaction will influence anxiety towards result expectancy within the indigenous societies of the case study.

Proposition 12: *Social interaction as an e-government awareness channel will influence perceived usefulness.*

Social interaction was identified by the research as the predominant method of information exchange within the indigenous societies. All the respondents agreed with this finding.

According to a 38 year old public servant from the Yoruba indigenous society, "interpersonal interaction has proven to be the best way of learning about government programmes and also it is the best way to participate in politics because it is through this medium that you know where the pendulum is swinging to. Other forms of communication like the electronic, Internet and print have been downplayed due to inconsistency and ineffectiveness of the basic amenities within the society to support them e.g. poor power supply."

Another respondent, a 37 year old male civil servant, said "even though there seems to be a high interest in TV, radio and other communication channels, social interaction remains the strongest influence because it boosts the confidence of people, and gives them a sense of belonging."

Although different reasons were given by different respondents, they all agreed with the effectiveness of interpersonal interaction as a means of information exchange within their indigenous societies and that the nature and content of information being exchanged will depend on the predisposition of the traditional and religious authorities within the indigenous area. If the traditional and religious authorities consider the programme to be very good, it is highly likely that the citizens will consider it to be equally good and hence influence information exchange within their indigenous society.

Thus, within such indigenous societies, the content of the information being exchanged will influence the attitude of the subjects and induce interest. If the traditional and religious authorities preach that the e-government products and services are valuable and important to their citizens, the citizens will, in turn, form a positive attitude towards such programmes and this will improve the exchange of information about e-government products and services within the society. Therefore, social interaction as an e-government awareness channel will influence the perceived usefulness of e-government products and services.

Proposition 13: *Social interaction as an e-government awareness channel will influence intention to adopt e-government.*

Most participants agreed with the fact that the decisions of traditional authorities or religious leaders are treated with respect within their communities.

According to a 38 year old respondent, a public servant from the Yoruba indigenous society, their community has unalloyed loyalty to the monarchs and traditional institutions.

Another participant, a 36 year old businessman from the Yoruba indigenous society, said "the decisions of such traditional and religious leaders are appreciated," but said that collective efforts produced the best result for information exchange within his community.

However, all the participants agreed with the findings and made different statements to express their community's respect for the opinions of such authorities. If the decisions of such authorities are held in such a high esteem and they are positive about e-government products and services, the citizens will also form a positive attitude towards such products and services too. This positive attitude formed by the citizens will influence their intention to adopt e-government products and services. Therefore, social interaction as an e-government awareness channel will influence intention to adopt e-government products and services.

Proposition 14: *Social interaction as a channel of e-government diffusion will influence trust of personnel providing e-government products and services.*

Most of the participants agreed with this finding. Some made references to past failures of government programmes; others also made references to the issue of being tricked into something they don't want to accept, either as a result of religious observance or financial commitments.

A 37 year old male respondent, a civil servant from the Ibo community, said "much of the findings are true and the failure of government programmes has created this attitude of indifference among citizens."

According to a 35 year old lawyer from the Hausa indigenous society, most people in her community are ever ready to embrace government programmes so long as they understand the purpose. This shows that the people from her community will be positive towards e-government programmes, but the purpose of the program will need to be explained to build trust and so they understand its purpose.

Another participant, a 36 year old businessman from the Yoruba indigenous society, stated that he agreed with the finding on the result expectancy, but mentioned that the important thing to his people will be the overriding objective of the programme."

However, this equally shows that the citizens do not trust the government for one reason or another. Nevertheless, the analysis of responses reveals that such feelings will be reduced as a result of improved social interaction among citizens of the indigenous societies.

The introduction of familiar people as support officers or trainers will improve trust among the citizens to interact with the e-government products and services more freely, according to a 25 year old businesswoman from the Ibo indigenous society. Therefore, social interaction as a channel of e-government diffusion will influence subjects' trust of personnel providing e-government products and services, which will influence their trust of e-government and will impact on citizens' intention to adopt e-government products and services.

In conclusion, all the propositional constructs were supported by the research except one, as explained previously. The dependent propositional constructs **P12, P13** and **P14,** as shown in Chapter 5, section 5.6, were supported throughout the research analysis and were evident in the respondents' remarks. However, further discussion is offered to throw light onto the relationships between propositional constructs and variables of the conceptual framework.

6.5 Discussion

6.5.1 Culture

As defined in Chapter 2, culture isa peoples' way of life, which is an attitude of a particular group of people that they carry with them and exhibit as a unique symbol. It has been noted that culture is difficult to simplify and measure (Heeks, 2002, 2003; Hasan and Dista, 1999;). This is consistent with this research because most of the subjects' responses to different questions used to study culture in this research tend to provide an interwoven answer to all questions. For instance, a subject described the level of loyalty to the traditional authorities and the collective belief in the traditional leaders' decisions. It shows that, inasmuch as a decision could be a one man decision, it triggers a collective attitude among the people within the society. This shows that power distance can trigger collectivism within a society. Such related similarities exist within this study, making it difficult to totally isolate a particular dimension from the others.

Many studies emphasise the importance of culture on technology adoption in IS, but few have extended this to e-government diffusion, as stated in Chapter 2 section 2.9. Theoretically, culture has been identified as being very important for the diffusion of e-government in developing countries (Walsham and Sahay, 2006; Heeks, 2003; Ifinedo, 2006; Adeyemo, 2011; Olatokun, 2009). For instance, the disposition of a traditional leader or religious leader or local union will largely determine the disposition of the citizens in the society within the case study area. If these traditional authorities feel threatened by the introduction of e-government products and services, they will form a negative disposition towards it. Such negative attitudes of the traditional authorities can permeate into their indigenous society, extend to the citizens of the indigenous area and influence their opinion about the acceptance of e-government products and services. However, if the reverse is true, it will create a positive impact; hence, the acceptance of e-government products and services. This identified importance of culture noted in Chapter 2 sections 2.2 and 2.9 is consistent with the findings of this research.

Furthermore, in Chapter 2, section 2.2 and 2.9, it was noted that culture is not a set of static phenomena, but a dynamic process (Heeks and Bailur2006; Tedre et al., 2006; Hassan and Dista, 1999; McSweeney, 2002). For instance, within the same nuclear family a husband believes that the decision of the traditional leader is final and binding on every member of the society, but the wife does not hold such a perspective about the same leader as a result of experience from her parents' clan. Since two individuals within the same family share different opinions about a particular leader, it is believed that obedience to a decision from such traditional leaders will equally vary among their subordinates. Thus, the attitude formed as a result of such beliefs will vary. This is equally evident in terms of loyalty to traditional leaders. While the Hausa and Yoruba express unalloyed loyalty to their traditional and religious leaders, the Ibo mostly accord that level of loyalty to town unions or age grade associations instead of the traditional authorities like the Hausas and Yorubas. This research

finding is consistent with the theoretical expression stated at the beginning of this paragraph and as stated in Chapter 2, section 2.9.

There is another theoretical explanation. Studies have identified that various national cultures react differently to new innovations, but within one nation there could be multiple cultures, especially within developing countries (Mayers and Tan, 2002; Huo and Randall, 1991; Papas, 2001; Hofstede and Hofstede, 2005). This is consistent with the findings of the research. For instance, just as stated above, loyalty to the traditional institutions varies among the three indigenous societies. This will determine the traditional beliefs of the three societies, which will in turn influence the way they think and behave towards their traditional rulers, religious leaders and the town unions. Hence, the three indigenous societies within one national boundary vary in cultural regard for the traditional authorities, like the traditional monarchy varies among the three indigenous communities. It was discovered that while the Yoruba and Hausa hold their traditional monarchies and religious leaders in high esteem, the Ibos view such authorities as ceremonial heads and hold town unions and age grade associations at the same level as Hausa and Yoruba monarchies.

6.5.2 Gender

The definition of gender in Chapter two states that gender is the culturally shaped expression of sexual difference: the masculine way in which men should behave and the feminine way in which women should behave. This suggests that gender refers to socially and culturally determined attributes categorised as masculine and feminine (Hardwick, 1998; Wiesner-Hanks, 2001). This is consistent with the present research. For instance, the gender regard and social attachments to it varies among the three indigenous societies. Yoruba and Ibo women seem to be freer and more independent than women in the Hausa society. Women can sit publicly, freely interact and exchange information within the Yoruba and Ibo indigenous societies, but not within the Hausa community. Such treatment is a result of cultural attachment to the gender and expected behaviour of gender within the society. Thus, the gender regard of the three indigenous societies is determined by their cultural regard to gender. This finding supports the above stated definition of gender.

According to Henwood (1993), there is interrelation between technology and gender. The research identified that there is a role for women in technology, just like culture, and that women should also be producers, not just users. The finding of the research is consistent with this theory. For example, women from the three indigenous societies are mostly restricted either by religious observance or marriage expectations from freely interacting with men outside their family. Since social interaction is the most employed channel of communication within these indigenous societies, it could be said that such a society trait will hinder the exchange of information among women and men about e-government within the indigenous societies. However, if women are trained as e-government support officers or trainers, they will freely interact with their fellow women and such a societal trait will be bypassed, thereby improving interaction among all genders. So, the extension of Henwood's (1993) theory that women should be producers of e-government to improve their participation is consistent with the finding of the current research, namely that women should also be producers of e-government to increase information exchange about e-government products and services within the three indigenous societies.

As discussed in Chapter 2 section 2.8.2, Gillard et al. (2008) recognised that technology developments affect women and men differently because of the social positioning of genders in different societies. Therefore, the findings of the research show that the relationship between gender and technology is determined by the social make-up of the indigenous societies. For instance, the regard for gender roles, gender division of labour and gender inequity depends on the culture of each of the indigenous societies. This is because women are often saddled with the full burden of child rearing and domestic activities within such societies, while the men enjoy more leisure time which gives them more available time to exchange information about government programmes. Studies show that such a gender trait in the three indigenous societies places women in the marginalised position to acquire e-government information, not to mention the usage of such services, as found by Gillard et al. (2008). The research finding is also consistent with Cockburn (1985) who noted that gender and technology are socially defined.

Furthermore, most researchers believe that development is not equal between genders in such regions (Kasekende et al., 2006; Morgan et al., 2004) and it could be a major source of poor diffusion of technology like e-government in these areas. Hakin (2004) blames the culture of developing countries on the preference of the male gender over the female gender, thereby pushing the female gender into an inferior status. In a practical sense, women have reduced access to ICT facilities due to cultural barriers. They have difficulty availing themselves of this potentially empowering technology (Best & Maier, 2007, citing Momo, 2000; Praser, 2003). This is consistent with the findings of the research, as explained above.

6.5.3 Social interaction

Following the discussion in Chapter 2, section 2.1.1 social factors were identified as complex moderating variables on usage intention (Venkatesh et al., 2003; Warkentin et al., 2002; Tedre et al., 2006; Kumar and Best, 2006; Gilber and Balestrini, 2004), but Venkatesh et al. (2003) and Davis et al. (1989) consider the impact to be less significant with time. However, the influence of social factors is transmitted through media of communication, which were identified in Chapter 2, sections 2.4 and 2.7.1 as social interaction, media channels and Internet based channels. According to the findings of the research, social interaction was discovered to be the most employed channel of communication among the three indigenous societies, in line with the findings of Hakin (2004) and Rogers (2003), which was identified to be common among developing countries. Since this is the case, it shows that the effects of social factors are mostly transmitted within the three indigenous societies through social interaction. Therefore, the message about e-government being exchanged through social interaction within the three indigenous societies will form the social influences exerted on the individual citizen within the indigenous society. Such social interactions, which take the form of conversations and messages, assist in forming perceptions about e-government products and services. Considering the findings from previous studies (Taylor and Todd, 1995; Venkatesh and Brown, 2001), it was expected that if citizens are influenced by their social networks with positive messages, they are more likely to have a strong intention to adopt e-government products and services. If the attitude of citizens towards the e-government products and services is positive, then they are likely to form an intention to perform the behaviour (Ajzen, 1985, 1991; Tan and Teo, 2000; Taylor and Todd, 1995). Following this idea, it was assumed that, if social interaction influences perception and the

perception of the citizens regarding the e-government products and services is positive, then it is more likely that it will have a positive influence on the citizens' intention to adopt e-government products and services, thereby increasing the diffusion of e-government products and services. This theoretical assumption is confirmed by the findings obtained in this research which suggest that social interaction will influence intention to adopt e-government products and services.

As per the discussion subjective norm is considered to be a social influence in its original form as used in Theory of Planned Behaviour model (TPB). It is considered to be directly related to perceived usefulness. This is because a person's behaviour is based on their perception of what others think of what they should do (Tan and Teo, 2000). Following the theoretical arguments in the existing studies, it was expected that the stronger the perceived social influence to adopt e-government products and services, the more likely it is that citizens will develop a stronger intent to use it, as found in other ICT adoption studies (Ajzen, 1985; 1991; Fishbein and Ajzen, 1975; Tan and Teo, 2000; Taylor and Todd, 1995; Venkatesh and Brown, 2001). For instance, if either the traditional kings or the religious leaders declared that e-government products and services are suitable and useful for the citizens of their indigenous societies, the citizens will perceive the e-government products and services to be useful to them, thereby facilitating the diffusion of e-government technology within the three indigenous communities. Therefore, if the message exchanged through interpersonal interaction is portraying e-government products and services to be beneficial to the citizens, the citizens will form an opinion that e-government is useful to them. Thus, the findings of this study are consistent with previous research that suggests that the message content of social interaction in the three indigenous societies will influence the perceived usefulness of e-government. It is also consistent with findings in other areas of IS adoption theories, as mentioned at the beginning of this paragraph.

As noted in Chapters 2, section 2.6 and chapter 5, section 5.6, trust was one of the variables under consideration in IS adoption (McKnight et al., 2002) and was considered in the e-government adoption theory (Warkentin et al., 2002; Gilbert et al., 2004). Trust of government was considered to be a major moderator to citizens' intention to adopt e-government, but trust of e-government was noted to be another major moderator to intention to adopt e-government, especially where citizens' trust of government has failed (Warkentin et al., 2004). Similarly, it was noted from the current research findings that the citizens of the indigenous societies do not trust the government programmes due to failures in the past of such programmes and this finding is consistent with previous findings. However, it was discovered within the same indigenous society that the introduction of a familiar support officer or the directives of traditional leaders or associations in support of e-government products and services will boost the trust of such technology. Such measures will mount pressure on the opinion of the citizens towards the adoption of e-government products and services. According to findings in other IS studies of consumer-oriented service, the sources of influence could be the adopter's friends, family and peers (Tan and Teo, 2000). Rice et al. (1990) defined such influence as social pressures, where members of a social network affect one another's behaviour. Venkatesh and Brown's (2001) study suggests that social influences are significant determinants of purchasing behaviour for PCs. Similarly, it was also expected that if the traditional rulers and religious leaders of the Yoruba and Hausa are exposed to the use of e-government products and services and the town and age grade associations are

equally introduced to the use of such technology, the citizens of the indigenous societies are likely to be influenced to develop trust to adopt e-government products and services, even when they do not trust the government of the day or the products and services. Thus, trust of e-government delivery personnel will influence citizens' perceptions about e-government products and services when trust in government and trust of e-government has failed. The trust of e-government delivery personnel, as mentioned earlier, will improve the diffusion of e-government products and services and the subjects' intention to adopt e-government. This is consistent with previous research findings on trust.

A summary of the research propositional tests, and also a reflection on the propositions in relation to the proposed conceptual model, were provided above. The next subsection will summarise how the existing literature contradicts some of the research findings and will reflect on the e-government adoption model based on culture and gender in comparison to its guiding models and framework.

6.6 How literature contradicts the research findings

As described in Chapter 2, section 2.9, UA was low in the West African region (Hofstede and Hofstede, 2005; Hasan and Dista, 1999) and Nigeria, used as the case study for this research, falls under that region. It is noted that a cultural structure with low UA will adopt IS more rapidly, while a cultural structure with strong UA will make it very difficult to adopt unpredictable programmes, which are synonymous with IS technology (Warkentin et al., 2002; Hasan and Dista, 1999). This is contrary to the findings of this research that show that the three indigenous societies show apprehension towards unclear variables. For instance, the findings note that the citizens will be unlikely to take part in a programme for which they do not understand the purpose. This shows that the citizens avoid ambiguous and unpredictable programmes; hence, making it difficult to easily adopt e-government products and services.

6.7 Conceptual framework

The formulation of the initial framework for this research study was based on the theoretical explanation in Chapter two. It was also learnt that social factors, namely culture and gender, were viewed to be major contributory factors to the failure or slow rate of e-government diffusion in developing countries (Heeks, 2002; Heeks and Bailur, 2006; Evans and Yen, 2005; Akther, 2007). The theoretical explanation found that these attributes influenced the perception of citizens towards such technology (Warkentin et al., 2002; Hasan and Dista, 1999). If citizens perceive e-government products and services favourably, then they are more likely to form a positive intention to adopt e-government, as explained in Chapter 2, section 2.5 and as discovered by Rogers, (2003). The influence of such perceptions will depend on the content to which the citizens are exposed. Their willingness to adopt technology will also depend on their awareness (Rogers, 2003). Rogers (2003) suggests that the level of knowledge about an innovation, its risks and benefits, affect the adoption rate. The greater the awareness of the benefits of the e-government products and services amongst the citizens, the more likely that e-government products and services will be adopted. Second, Rogers (2003) states that, for the diffusion of an innovation like e-government to take place, it must be delivered through a channel of communication across a social system over a period of time. In diffusion theory, Rogers (2003) states that categories of different adopters have different characteristics and communication easily takes place, mostly within each category.

Some studies also mention demographical factors as reasons for such an occurrence (Rogers, 2003; Dimitrova and Chen, 2006). Although demographical factors like age, income and literacy level were mentioned as factors, psychological aspects such as beliefs or personality were later mentioned (Rogers, 2003). The later elements have been shown to influence media choices and adoption decisions (Dutta-Bergman, 2002; Dimitrova and Chen, 2006). Research on channels of communication in which e-government is viewed to be a new innovation being delivered to the citizens of developing countries like Nigeria barely exists. However, there are a few studies that have examined this important element of the innovation process (Dimitrova and Chen, 2006; Rogers, 2003). In such cases, research from a citizens' perspective identified media, inter-personal interaction and Internet communication systems as channels of communication for e-government products and services. An initial research framework (see Figure 2.2) was formed to examine the effects of culture and gender on channels of communication of e-government, a means through which information on e-government products and services were transferred amongst the categories of adopter of the new technology. This is replicated below to refresh the mind of the reader and to show the transformation processes of the conceptual framework, which is shown in figure 6.
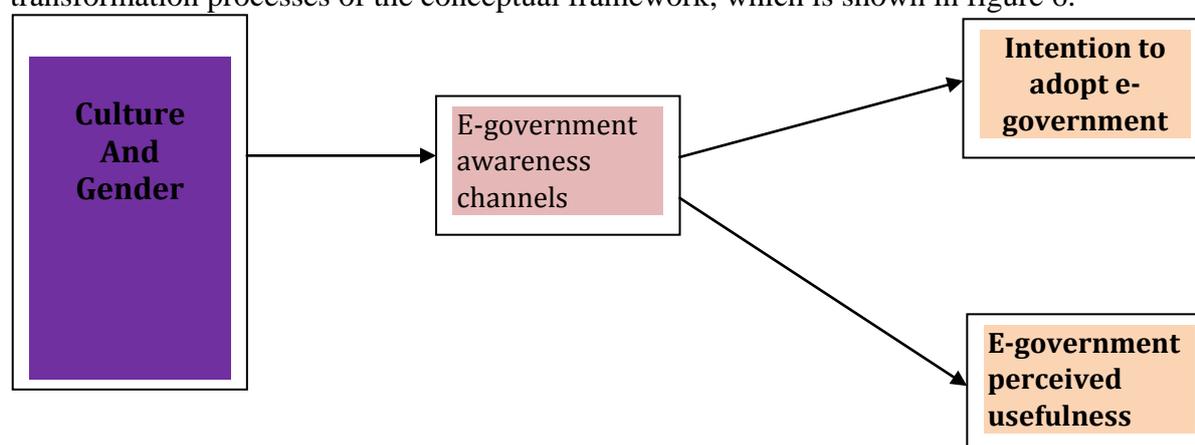
Figure 6.2 as in Figure 2.2: Conceptual framework

Having defined the framework to be used to study the research question of this study and emphasised the factors of culture and gender as well, propositional constructs were formulated based on the theoretical review of Chapter two.

Furthermore, a pilot case study was carried out, as stated in Chapter three and described in Chapter four. During the analysis of the findings, it was discovered that all three media of communications, namely social interaction, media and Internet based channels, are not common among the citizens and the ability to monitor the claims of some of the citizens about the usage of the Internet and media channels was almost impossible, as explained in Chapter 4, section 4.4.5. As mentioned in Chapter two, e-government awareness channels have been difficult to measure due to the fact that the attitude towards some media of communication cannot be monitored based on the time limits imposed on this research study. Some subjects also claimed to have access to a particular type of medium of communication in order to boost the appearance of affluence, but because the venues in which most interviews took place are different from the location where they spend most of their time (probably their homes), it was impossible to confirm such claims.

Second, among e-government awareness channels, as identified by the subjects, only one channel of communication appeared consistently within the three categories and was common within the overall dimensions used to study culture and gender in this research. Social interaction was identified to be the constant and common channel of communication within all the indigenous societies. Therefore, the e-government awareness channels were replaced with social interaction, an aspect of the three channels.

It was also discovered that the effects of culture and gender are virtually non-existent in the media and the Internet based media of communication because often the decision to use such media are personal, particularly if the means of resources to provide such media are available to the individual subject. It was discovered that it will be difficult to monitor individual contact time with media and internet base means of communication which might require a longitudinal case study method but due to the type of case study data collection method adopted (snap shot) the option was left out due to time required to complete the research.

Finally, an aspect of gender was also discovered to influence the perceived usefulness of e-government; hence the dimension of culture and aspects of gender needed to be separated to reflect this finding. Due to the above reasoning, the conceptual framework to examine the effect of culture and gender on e-government awareness channels was refined after the pilot study and represented below as figure 6.3 as adopted from figure 4.1.
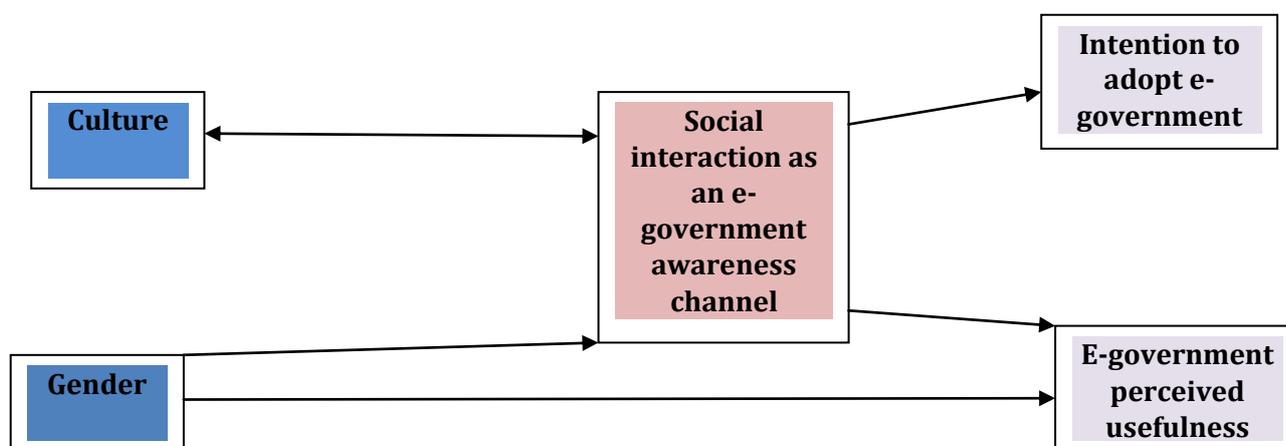
Figure 6.3 as in 4.1: The conceptual framework after the pilot.

From the subjects' responses, trust was noted to influence the likelihood of subjects to adopt e-government. It was noted among Hausa subjects due to religious observance and among the Yoruba and Ibo due to the failure of such government innovations in the past. This finding was also noted by other researchers (Fukuyama, 1995; Warkentin et al., 2002). Although a lack of trust in the government and a lack of trust in e-government were noted by researchers to negatively influence intention to adopt e-government (Belenger and Carter, 2008; Warkentin et al., 2002) these research findings show that such feelings will be reduced by improved social interaction among citizens of the indigenous societies when faced with the

choice of whether to adopt e-government products and services. For example, the introduction of familiar e-government personnel will improve trust and enhance interaction between the citizens and the personnel. However, from the analysis of subjects' responses it was discovered that such feelings will be reduced as a result of social interaction among subjects with positive opinions about e-government products and services. Therefore, citizens' trust of e-government delivery personnel, as a result of social interaction, will influence e-government diffusion, which will in turn influence the intention to adopt e-government products and services. This necessitated the inclusion of the trust of personnel providing e-government products and services as a construct of the framework. This is reflected in the framework shown below in Figure 6.4. as taken from 5.5
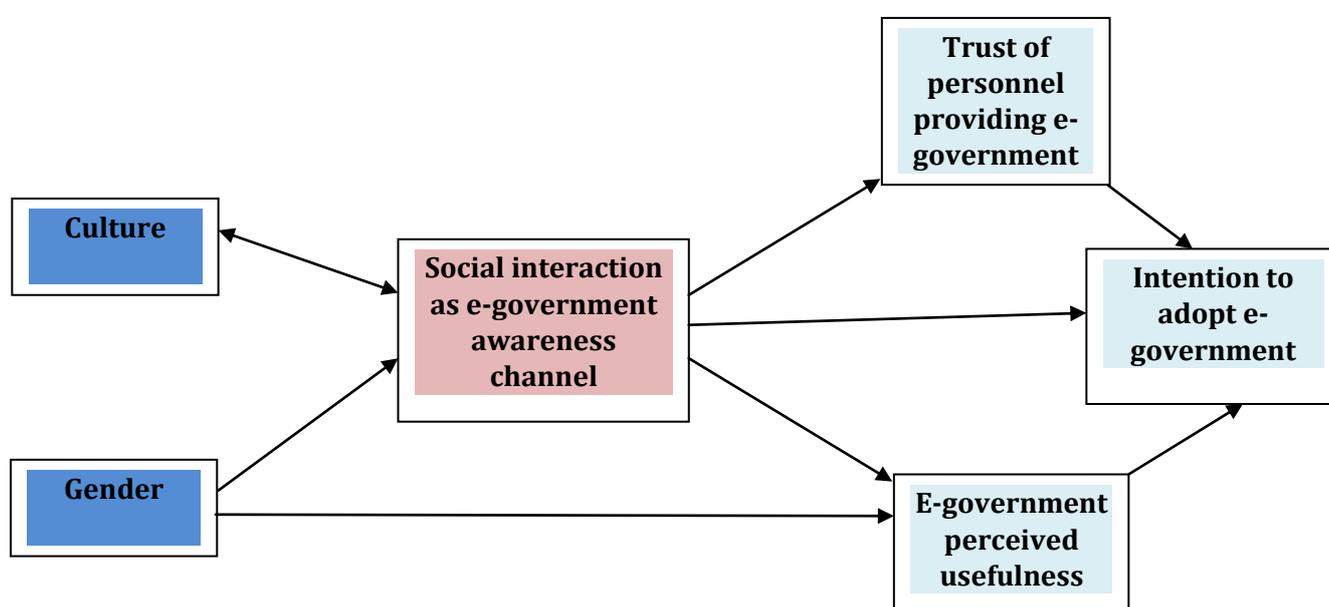
Figure 6.4 as in figure 5.5: The conceptual framework

In the description of the framework culture is an independent variable that affects social interaction. However, culture is also influenced by social interaction. Comparatively, gender affects social interaction. Social interaction in turn influences perception which greatly determines the intention and perceived usefulness egovernment products and services. Furthermore, gender attributes also determine the perceived usefulness of e-government products and services. Finally, social interaction is enhanced by the trust of personnel delivering egovernment products and services; thereby influencing the perceived usefulness and intention to adopt a new system.

It was discovered that awareness forms perception, which in turn influences intention to adopt a technology; therefore, the nature of information exchange through social interaction as an e-government awareness channel forms a citizen's perception of e-government products and services. This in turn influences a citizen's intention to adopt e-government products and services.

6.8 Conclusion

This chapter discussed and reflected upon the research findings and their validation from a theoretical perspective. It compared the outcomes of the validation processes with the standard recommended within IS research, in terms of construct validity, internal validity, external validity and reliability. The comparison led to the conclusion that the research process applied to this study conferred an appropriate level of construct validity, internal validity, external validity and reliability and satisfied the standard criteria within IS research.

It also presented the refined and validated conceptual propositions used in this research. The discussion led to the conclusion that all the propositional constructs, except control of resources, significantly explained the influence of culture and gender on social interaction as an e-government awareness channel, which in turn significantly explained the intention to adopt e-government, the perceived usefulness of e-government and trust of e-government products and services.

This chapter draws the study findings and analysis to an end. As with every task, there is a conclusion, which is provided in the next chapter.

CHAPTER 7

7. Summary and Conclusions

7.1 Introduction

This chapter provides an overview of this study. It also reviews and provides a summary report of the findings by providing a conclusion to the results and discussions of the research presented in this thesis. The chapter begins with an overview of the chapters, followed by the main conclusions drawn from the research findings. It will also provide a discussion of the research contributions as they relate to theory, policy and practice. In continuation, the chapter will describe and review the limitations of the research and proffer avenues for future research directions in the area of e-government diffusion and adoption in developing countries. Finally, a summary paragraph will be provided.

7.2 Overall conclusions to the various chapters

Chapter 1 defined the research problem and outlined the motivation for conducting this research and gave brief definitions of the scope of the study. The research examines gender and culture as factors of consideration when studying e-government diffusion in a developing county; in this case, Nigeria. The research has been modified slightly in order to narrow the scope of the study and make it more achievable within the available time frame. This thesis examines the impact of culture and gender on the channels of communication used for e-government awareness.

E-Government is defined as the use of various information and communication technologies (ICT) to promote more effective government, facilitate easier access to government services, allow greater public access to information, and to make government more accountable to its citizens (Lindberg, 2005).

However, from anecdotal evidence and the researcher's own experience, this definition is not entirely applicable to developing countries, specifically Nigeria. It is not a true representation of developing countries, where governments often do not emphasise the citizens' needs and requirements. In most developing countries, e-government is viewed to be a computerisation of government processes and is used to improve its operations. Therefore, the definition is limited when applied to many developing countries. Research examining e-government projects identified a large rate of failure of e-government in developing countries (Heeks, 2002). From various definitions of e-government, it is apparent that the failure rates have been attributed to the e-government concepts and designs having originated in developed countries; therefore, the origins are significantly different from the developing countries' realities (Stahl and Elbeltagi, 2004).

The research carried out an in-depth evaluation of culture and gender within the selected societies to determine the influence of such social factors on the citizens with regard to the diffusion and acceptance of e-government products and services. It critically reviews the conditions under which these social factors are viewed to influence or not to influence the awareness and acceptance of e-government products and services. In view of the area and

samples of the study, the research examined some selected dimensions of culture and selected aspects of gender and determined if these factors varied or were homogenous among the selected indigenous groups. Three different major ethnic indigenous societies within Nigeria; namely the Hausa, Yoruba and Ibo, were used for this study. These groups were selected on the basis of accessibility, availability, population distribution and influence over other smaller ethnic groups within and around them.

From the definition of e-government, as outlined in this chapter, the research covered the citizens to e-government (C to G) aspect of e-government. E-government diffusion was studied from a citizen-centric view by examining how e-government diffuses within a section of a society. The research treated e-government diffusion in terms of citizens' awareness and behaviour towards its acceptance. Throughout the research, e-government diffusion was limited to citizens' awareness and attitude towards the adoption of e-government products and services.

Another term often used in this research is culture. Due to the large scope of this concept, the study defined an area of culture to be covered by the research, namely the area of *cultural values and information systems, which only examines people who carry with them a pattern of thinking, acting and feeling which is learned through their culture.* Other cultural aspects that were not covered in this research include: culture in technology (the inherent culture on which the design of the technology is based) and technology culture (the culture developed as a result of the changes that come with innovation) (Hasan and Dista, 1999). The research examined the culturally induced reaction of the society in which the technology was being introduced. The research used Hofstede and Hofstede's (2005) dimension of culture analysis in the examination of the indigenous society's culture.

Furthermore, gender aspects were also examined in this research; this concept was also considered to be too broad. Thus, in order to study gender the researcher adopted the APC gender framework which is considered to cover most gender perspectives. It employed aspects considered to be suitable to achieve the aim of the research. The research examined how the political and strategic needs of both genders influence the awareness and acceptance of e-government products and services.

Finally, the study adopted some aspects of Rogers' (2003) diffusion of innovation model to investigate the effects of culture and gender on the diffusion of e-government within the selected case studies. It applied diffusion elements that are related to accessing the impact of the social factor at any point in time within the social system. The research area covers the channels of communication and social systems.

Channels of communication are the novel aspect of this research and were selected as an important element of the diffusion process (Rogers, 2003). The importance of this research topic is to undertake a deep understanding of e-government using theories applicable to culture and gender, which is lacking in most e-government research, thereby not representing universal facts (Lee, 2001).

Chapter 2 of the research provided a theoretical review of various technology diffusion related theories and some adoption models, including the Diffusion of Innovations, TRA,

TPB, DTPB, TAM and UTAUT. It also provided a theoretical review of e-government adoption theories, as offered by other researchers (Warkentin et al., 2002; Gilbert and Belestini., 2004; Kumar et al., 2007). Since the aforementioned adoption and diffusion theories and models provided this research with a number of underlying constructs or factors, they provided guiding frameworks for current research. The research also discussed and justified the reason for selecting factors that were expected to contribute to the prediction of intention to adopt e-government products and services, which ultimately explains e-government adoption behaviour in a developing country with strong cultural and gender factors. Such factors are expected to differentiate between the rate of e-government diffusion in developing countries and developed countries. Using selected elements, a conceptual model of e-government diffusion was developed.

The proposed conceptual model is based on the assumption that factors of culture and gender can influence e-government awareness channels popular within the societies (identified in this case as social interaction) and, in turn, are expected to influence citizens' perception towards e-government products and services, which finally is expected to influence their intention to adopt e-government products and services. Whilst discussing the aforementioned factors, a number of underlying propositions were also formulated that needed to be tested in order to validate and refine the conceptual model.

In the conclusion to Chapter two, the conceptual framework for the study of the effects of culture and gender on e-government awareness channels, the most important part of the diffusion process within such indigenous societies, was achieved.

Chapter three provides a description of the research approaches, applications and procedures and explained the reasoning for the applied research procedure. There is also a discussion of methods and their inherent problems as used in information systems. To validate and understand the conceptual model, it was found that a qualitative research approach would be more appropriate than a quantitative approach. In order to achieve the aims of the research and provide an in-depth analysis of the research problem, a case study approach was considered to be best. Following this, an overview discussion on various issues related to the available research approaches in the IS field, a case study was considered based on some noted factors. According to Yin (2003), a case study is an empirical inquiry that investigates a contemporary phenomenon within its real life context, especially when the boundaries between the phenomenon and its context are not clearly evident. Since interest has shifted to behaviour and attitude rather than technical issues, a case study was considered to be most suitable for this research (Orlikowski & Baroudi, 1991; Alavi & Carlson, 1992; Mayers, 1997, citing Benbasat et al., 1987).

Furthermore, the study is subjective and concentrates on understanding the reason for the actions and reactions of human subjects towards the acceptance of e-government technology. This means that it deals with the invisible conceptions of human subjects like emotional resilience, personal drive and compassion. To be able to evaluate these variables, the researcher had to immerse himself in the participants' society.

Most importantly, a case study allows the incorporation of different data collection techniques, known as triangulation, to reduce bias (Yin, 2003) and support in-depth analysis of phenomena.

Due to the originality of the research, it was imperative to conduct a pilot case study prior to the main study to help standardise the procedure and provide knowledge of pitfalls where the research could fail. The issues relating to the data analysis were then discussed and explanation building techniques were applied.

Chapter four provides the empirical resources for the pilot study that were used in this research. The reason for the conduction of a pilot study was that there was no prior academic research involving e-government diffusion on multicultural societies within that region. Using this reasoning and Yin's statement (2003) that a pilot is suitable to determine and make the questions relevant and understandable to the participants, a pilot was undertaken. The pilot initially consisted of 30 individuals from the indigenous groups, two academic staff from the researcher's institution and one from the government institution that regulates and monitors e-government development in the country. Finally, confirmation of the findings was achieved using 15 members of the subjects, making the total number of interview scripts 45. A questionnaire was designed with the help of the expert team of two academics from the United Kingdom and one government official from Nigeria. The designed questionnaire was based on the theoretical literature review in Chapter two.

The findings obtained from the pilot test demonstrated an acceptable level of reliability for all the constructs. It can be concluded that the pilot study was beneficial in that it provided valuable insight into the literature review and allowed the researcher to develop better questions that contribute to the validation of the propositions. As a result, the conceptual model was modified and the propositions refined to represent the pilot research findings.

Chapter five describes and discusses the research findings used in this study. Firstly, it provided the findings that support the argument that social interaction was identified to be the most preferred channel of communication for all subjects. This was noted to influence perception among the subjects and determine the opinion of most subjects about the adoption of e-government products and services. For example, most subjects expressed the view that the influence of families and friends, the introduction of people well known within their community as a trainer and support staff, the collective decisions of their society and the directives of the local kings and religious leaders will influence their opinion to adopt e-government. All these identified activities were aspects of social interaction.

Second, since the subjects were categorised into three groups which comprised those who have used e-government, those who are aware of e-government and those who know nothing about e-government, the subjects' perceived usefulness of e-government will largely depend on the experience of those who have used it and are aware of it. Such experience or information exchange involves social interaction, mostly between early adopters (Rogers, 2003; Dimitrova and Chen, 2006). Most research shows that the percentages of early adopters who fall under first category of subjects in this research are very small compared with the population among developing countries like Nigeria (Heeks, 2002; Heeks and Bailur, 2006). The directives of the religious leaders or the local kings in Yoruba and Hausa will also influence perceived usefulness, depending on the content of the information the key leaders spread within their communities, just as the collective decisions of the Ibo society will also influence perceived usefulness. Therefore, most of the subjects will be influenced by the content of the information within their indigenous social circles, which is an aspect of social interaction.

Third, trust was also noted to be as an issue of consideration for most of the subjects when interacting with e-government technology. This was expressed in terms of trust in e-government (Warkentin et al., 2002) and trusts in government (Belanger and Carter, 2008); moreover, trust of personnel providing the e-government training and support was discovered by the current research. Thanks to the subjects' preferred e-government awareness channel of social interaction, in the form of familiar trainers and the support of the traditional and religious leaders for the Yoruba and Hausa subjects, the subjects' trust will be won so they will participate fully in social interaction activities of e-government, which in turn will induce their intention towards the adoption of e-government products and services. For the Ibos, collective decisions and also the introduction of well-known personnel to the delivery of e-government will improve trust.

Finally, the chapter provided the findings that illustrate the reliability of the case study; a tabular documentation of the subjects' responses was kept which forms the database of this research report and is attached as Appendix 7. Secondly, a set of well documented protocols for data collection were also attached as Appendices 1 to 6 and they will provide enough guidance for replication of the case study. This process is believed to increase the reliability of the case study. The case study report maintained a chain of evidence through which an independent investigator could trace back the report and findings of the case study. It shows sufficient citations from the case study database, linking the report to findings and replicating the procedure for the collection of the research data within the three embedded case studies. According to Yin (2009), the use of multiple sources of evidence, the development of the case study database and maintaining a chain of evidence of data collected will reflect a concern for the validity and reliability of constructs.

Multiple sources were used for data collection. These include the researcher's observation notes, a review of archive documents and the subjects' interviews and open-ended questionnaires. According to Yin (2009: 114), "the major strength of case study data collection lies in the opportunity to use different sources of evidence collection which provides a converging line of enquiry which is described as triangulation." Hence, the multiple sources of data collection validated and verified the data collected in this research.

The above explanation clearly demonstrates that this study meets the standard criteria of all types of validity, as stated in the case study validation table (Yin, 2009). This implies that the validated tactics provide an effective measure of the theoretical constructs used to validate the conceptual model, which suggests that the measures used in this study demonstrate an appropriate level of quality.

Chapter six describes the variations that have occurred in the empirical evidence and the advantages of the observed evidence. There is also a validation of the framework, which was viewed to be important for future research directions in the understanding of the implications of culture and gender on e-government diffusion in developing countries like Nigeria.

This chapter also provides an overall picture of the validation process and briefly discusses whether the undertaken validity measures and their outcomes are on a par with the recommendations made in IS research. The recommended validities include: construct validity, internal validity, external validity and reliability, and are the common method bias in case studies (Yin, 2009).The comparison led to the conclusion that the research instrument

possessed an appropriate comparison for the validity test and satisfied the standard criteria within IS research.

This chapter also presented and discussed the refined and validated conceptual framework for e-government diffusion based on culture and gender factors. The discussion led to the conclusion that all the propositional constructs except one explained their relationship to social interaction, which in turn is significantly noted to influence the intention to adopt e-government, the perceived usefulness of e-government and trust in personnel providing e-government.

It was also found that the cultural elements are interwoven and, although they can be separately identified, it is better and the analysis is clearer if they are examined together to provide an in-depth insight into their significance. The same goes for gender elements. It was also noted that regard for gender within the society is a cultural issue, especially among such indigenous societies.

Finally, the chapter provided validation to empirically validate and refine the conceptual model that is proposed to examine e-government diffusion in Nigeria.

7.3 Conclusion to the research

To conduct a proper examination of the impact of culture and gender on e-government diffusion would have been both problematic and difficult without proper definitions of scope. By completing this phase, valuable insight into the application of theory in practice for such complex topics, and in a different context to where the theories were developed, was obtained. According to Belanger &Carter (2008), the medium of e-government delivery is based on the Internet, but according to Heeks (2002), Heeks and Bailur (2006) and Evans and Yen (2005), access to the Internet does not translate to usage and most people who use the Internet in developing countries hardly visit e-government websites. This issue was also observed in transitional economy countries like Hungary and Poland, where access constitutes 81% of factors that affect ICT usage, but less than 1/3 of citizens that use the Internet have visited e-government sites (Al-adawie, 2005), and represents another reason why this research was conducted.

Diffusion was described in Chapter two by Rogers (2003) to be the study of how, why and at what rate new innovations like e-government technology spread through a society over time. He states that willingness to adopt a technology will also depend on awareness. Rogers (1995) suggests that the level of knowledge about an innovation, its risks and benefits affect the adoption rate. The greater the awareness of the benefits of the e-government products and services amongst the citizens, the more likely the e-government product and services will be adopted. Therefore, in order to improve diffusion, a clear and positive message is required throughout the society to improve adoption of e-government products and services (Choudrie and Lee, 2004; Rogers, 1995, 2003). The aim of this research was to investigate the relationships between culture and e-government awareness channels within subcultures (ethnic groups) of Nigeria, a developing country striving to adopt e-government. The research also examined gender influences within the subcultures when considering an e-government awareness channel in Nigeria.

7.4 Findings of the research

Culture and gender influences were observed to have a strong influence on social interaction as an e-government awareness channel, but were a significantly low influence on the other means of e-government awareness channels. Furthermore, social interaction was also noted to be a very strong means of communication within the indigenous societies, as equally observed by Rogers (2003). Thus, if social interaction is a very strong means of communication within the three Nigerian indigenous societies, it means that in order for e-government to spread properly and extensively, social interaction should be employed to improve the diffusion of e-government products and services. Therefore, the diffusion findings that Rogers (2003) found in developing countries such as Peru are also evident in Nigeria.

Social interaction was found to influence all three variables: the perceived usefulness of e-government products and services, the intention to adopt e-government products and services and trust of e-government delivery personnel. According to findings in other IS areas in consumer-oriented service, the sources of influence could be the adopter's friends, family and peers (Tan and Teo, 2000). According to theoretical analysis, a person's behaviour is based on their perception of what others think they should do. Thus, it was assumed that, if the impact that social interaction has on the perception of the citizens regarding e-government products and services is positive, it is more likely that social interaction will have a positive influence on the citizens' intention to adopt e-government. Furthermore, if the message exchanged through interpersonal interaction portrays e-government products and services to be beneficial to the citizens, the citizens will form the opinion that e-government is useful to them. Similarly, it is also expected that, if the traditional rulers and religious leaders of the Yoruba and Hausa are exposed to the use of e-government products and services, the citizens of these indigenous societies are likely to be influenced to develop trust which will lead them to adopt e-government products and services, even when they do not trust the government of the day. For the Ibo, the same effect will occur if the town unions and age grade associations are equally introduced to the usage of such technology.

It was found that the treatment of gender is often determined by the cultural traits of society and that is also evident in e-government diffusion and adoption. In terms of gender influences, there are variances according to the cultural differences of the three indigenous societies in the country. What was concluded from this exploratory study was that, despite a small sample of subjects in comparison with the population of the three indigenous societies, it could be concluded that classifications developed by theorists such as Hofstede and Hofstede (2005) and Hofstede et al. (2010) can be related to the indigenous ethnic societies of a country. However, there is always variation which can cause diversification in results, which we have attempted to illustrate in this exploratory study. Furthermore, the APC Gender Evolution Model can assist in providing a diverse understanding of gender that can be categorised, which some researchers may find beneficial for future development of theories. For the readers references the Lessons learnt from filed experience is offered below.

7.5 Lessons learnt

The researcher found that it is not easy to examine the impact of various social factors affecting e-government diffusion in developing countries using qualitative methods; albeit using only interviews, observation and reference to archive documents. Firstly, distances are large when covering large countries like Nigeria. Secondly, cultural norms and traditions dictate the way the research is conducted, which can be very difficult, particularly if one is an outsider and not aware of practices and traditions. Thirdly, in a developing country like Nigeria, it was found that the formation and co-operation of the human network is critical. If this is not prevalent and well developed, there is a substantial danger of failure. What has also been learnt and is critical for future research is that huge challenges exist if qualitative or quantitative studies were to be undertaken without any pre-prepared network of contacts within such an environment.

The researcher also found that, in order to evaluate the impact of culture and gender in a society, emphasis should be placed on the interwoven nature of such studies. It was discovered that aspects of gender were determined by some cultural dimensions. For example, the regard for gender roles and the taboo on the association of a female subject with an unfamiliar male are all imposed barriers implanted by cultural traits. Thus, in future studies, care should be taken of such factors in order to streamline their influences.

It was discovered that there are differences and similarities in the culture of the three indigenous ethnic societies within the same country. This could pose a fatal error for a researcher who tries to categorise a society using dimensions of culture and aspects of gender in such a multicultural society. For instance, the citizens of the Hausa and Yoruba communities where high power distance was noted tend to still form a positive attitude towards collective responsibility, while the Ibo citizens who were noted to have an individualistic attitude tend to have a strong collectivist nature when involved in community matters. Thus, such collective behaviour within the formations of the societies does not necessarily represent their individual citizens' attitudes.

The inability of most of the subjects to understand the meaning of e-government shows that, in order for any research to pursue a true representation of the area of a case study, the study must employ a research method that will give the researcher the opportunity to come into contact with the citizens in order to create the opportunity to explain most of the terms used further. It will also give the researcher an avenue to be able to understand the mindset of the people and different meanings attached to different issues that are not consistent with common practice; this may even include facial expressions, which are a strong form of communication noted among the subjects. For instance, sometimes citizens' responses could just be a claim of affluence.

7.6 Application of framework to research

It is noted that the use of technology is a changing process (Wilson 2004). This means that such usage can vary over societies under a common national boundary adopting e-government technology. If it is noted that gender and culture influence the diffusion of e-government, then the question that one has in mind will be in what ways do these social

factors impact the usage of e-government products and services. In other words, to provide answers to the above questions the following low level inquiries had to be made.

First, what aspects of gender: men and women's' life style is affected by the system of delivering e-government products and services information In other not to unintentionally monopolise the e-government information exchange when implemented in a wider society. If the involvement of women for e-government information delivery will improve the exchange of information amongst women when employing social interaction, then it will be applied to avoid the domination of men; in the other way round, this could be equally applied to the cultural dimensions as well. Second, another question for the framework will be: to what extent will the influence of traditional authorities decisions influence the perceptions and behaviour of citizens in wider societies when face with e-government product and services. In this case the framework will be employed to gauge and assess the influence of such authorities on the behaviour of citizens where social interaction is the lead media of information exchange. Such authorities may be employed in other to improve the exchange of information regarding e-government products and services among the citizens of those local communities. This is particularly important where majority of the population live in rural areas. Thirdly, at what stage will the study include or exclude individual characteristics in the delivery of e-government products and services information and interactions. For instance: when and where to use familiar or unfamiliar personnel when introducing or providing e-government products and services to the citizens of an indigenous community.

On the basis of the framework the answers to the above questions and similar ones will be provided. In turn, this will improve the method and how e-government products and services information can be more widely spread in order to increase a positive attitude towards adopt of the technology which will enhance diffusion. Consequently this will affect how e-government products and services are introduced in various societies.

Most research involving diffusion in IS concentrated mostly in the study of the innovation characteristics of diffusion theory. Examples include relative advantage, trialability, compatibility, complexity, and observability. The results have constantly reflected the weak influence of social factors on the intention to adopt or in the use of IS technologies or in most cases shown that its effect is only in the first time users and will fade over time (Venkatesh and Davis 2000; Venkatesh and Browns 2001, Venkatesh et al 2003). Therefore theorising that social factors are weak determinates of intention to adopt a technology in older users. To the extent this is true such investigation was mostly done using quantitative data and mostly based on organisational experience. Although it could be called subjective norms, social influences, normative influences, it all relates to the influence of constituents of social factors which is based on culture and gender trait of a society. From the findings of the research the use of quantitative data could not capture in details the feelings and emotions of the subjects. Quantitative data could also not note when the subject is claiming a situation contradicting true positions of the subject's feelings or knowledge as shown in chapter 5. Furthermore culture and gender was noted to exert minimal influence on the application of technology support services as means of obtaining information which when extended to wider IS field could expand researcher knowledge on the strongest areas where culture and gender factors wields strong influences in terms of intension to adopt e-government and usage behaviour of citizens from that part of the country as shown in the conceptual framework.

7.7 Research contributions

This research presents one of the initial academic efforts towards understanding the diffusion of e-government products and services within different multicultural societies of Nigeria from the citizens' perspective. Also, this study is one of the few studies that address the issue of citizens' behaviour towards e-government products and services awareness in Nigeria. The following reasons illustrate the importance of conducting a study that examines e-government diffusion among citizens of multicultural societies.

By employing the qualitative approach, this study is an initial effort that confirms the role of six aspects of gender and the impact of four cultural dimensions on social interaction as an e-government awareness channel, in order to understand citizens' adoption of e-government products and services. This study not only validates the influence of culture and gender on e-government diffusion, but also shows the scope of its significance in terms of e-government awareness channels. It also shows the main and most persuasive awareness channel of e-government products and services within Nigeria.

Findings of this study empirically suggest that social interaction plays a key role in first time information and the intention to adopt e-government products and services. It also plays a key role of continued support for usage. An added strength of this research is that, unlike other related studies on the diffusion of e-government products and services, the current research extensively examined culture and gender elements and identified a significant area of influence on the diffusion process and its relationship through social interaction with perceived usefulness, trust and the intention to adopt e-government products and services. This, in turn, helped to acquire an extensive understanding of e-government diffusion and the intention to adopt e-government products and services by citizens as end users in Nigeria. This study brings about several theoretical contributions and implications to practice and policy. These contributions and implications are discussed in the next section.

7.7.1 The contributions of the research to theory

This thesis is expected to contribute to theory in the sense that it interprets the existing literature of the appropriate information systems (IS) in order to enhance knowledge of the effects of culture and gender on e-government diffusion from a citizen-centric point of view. It will also contribute to theory by empirically confirming the appropriateness of various culture and gender constructs and validating them for an e-government diffusion conceptual model. It will also contribute to the wider debt on culture and gender evaluation frameworks in information systems. Since research in e-government adoption is still in its infancy, it is envisaged that the contribution of this research will provide a background for developers of e-government theories. Finally, this research introduces a conceptual model that integrates social interaction and other constructs from different technology adoption models to study e-government diffusion from the citizens' perspective, considering culture and gender influences.

Empirical verification of the research process and protocols and confirmation of the appropriateness of new constructs for the validation of the impact of culture and gender on e-

government diffusion in a developing country, namely Nigeria, is considered to be a major contribution to academia. In any case, Heeks and Bailur (2006), Hassan and Dista (1999), Hakin (2004) and Venkatesh et al. (2003) emphasise the need to understand the local context of the citizens and incorporate it into the IS technology. As suggested above, this study employed mainly semi-structured interviews, observationsand a questionnaire in a case study method to examine the various factors of culture and gender as related to social interaction as an e-government awareness channel. This relationship is further extended to relate to the perceived usefulness of e-government products and services, trust of the personnel delivering e-government products and services, and intention to adopt e-government products and services in the context of e-government diffusion as it relates to citizens. This qualitative research clearly illustrates the relationship between these constructs with regard to the diffusion of e-government products and services, which is illustrated in Figure 7.1.
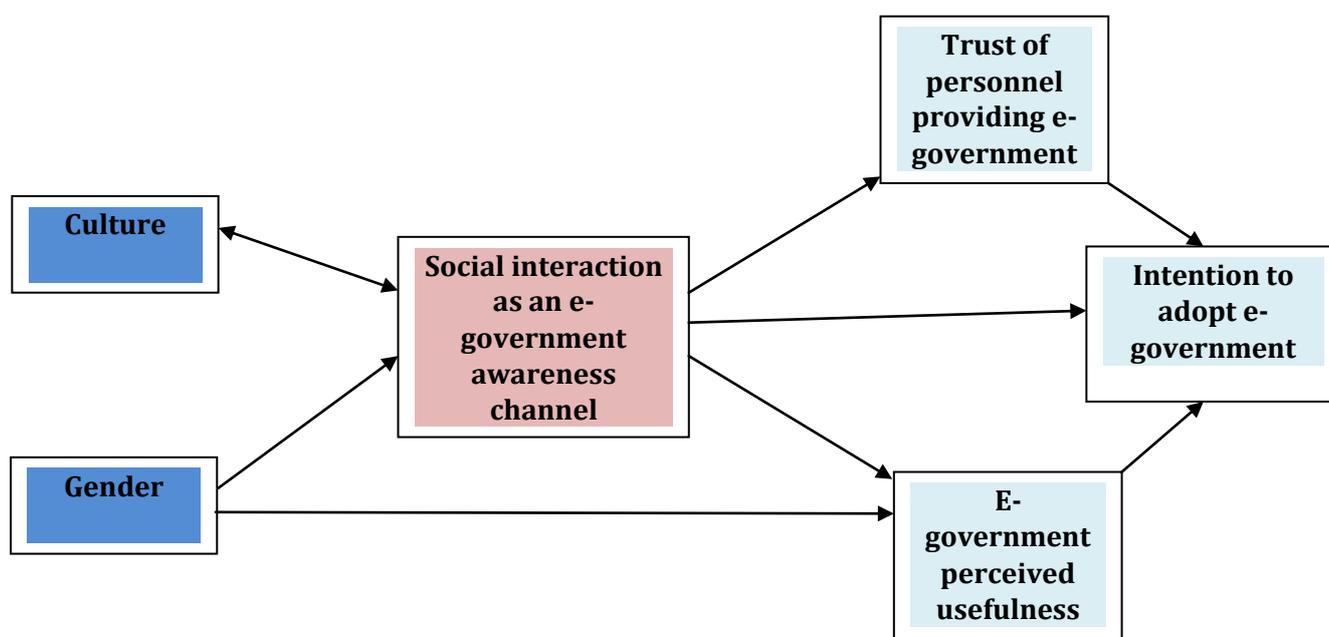
Figure 7.1 as in 6.4 & 5.5: The conceptual framework

Furthermore, this research introduced and validated novel constructs such as social interaction and trust in e-government delivery personnel to show the relationship between culture and gender in e-government diffusion. Such express intentions to adopt e-government and the perceived usefulness of e-government have not been included in other frameworks developed involving e-government diffusion and other guiding frameworks adopted from information systems (IS). The culture and gender variables are expected to determine and explain predictor variables adapted from the theory of diffusion and TAM, which in turn are expected to explain, determine and predict citizens' acceptance of e-government products and services (Rogers, 2003; Davis, 1989; Venkatesh and Davis, 2000). The constructs can be utilised to measure the perception of citizens towards e-government adoption and the

continued usage of e-government products and services by citizens; they can also be used to measure any other emerging technology in the country.

In continuation, this research confirms the role of cultural and gender variables, as identified in Chapter 2, section 2.8.2 and section 2.9 when the diffusion of e-government products and services is explained. This was considered to be one of the important research issues of this study, which is the study of the impact of culture and gender on e-government diffusion in a developing country. This study concludes that the selected variables are important since they influence the diffusion of e-government products and services. Referring to the research question that was initially posed in Chapter two, it was learnt that culture and gender variables associated with different indigenous societies vary on an unequal basis.

Another contribution of this research to theory is the development of a theoretical understanding of the influence of culture and gender on e-government diffusion when considering a developing country. The discussion on the influences of culture and gender on the diffusion of e-government products and services in Chapters 5 and 6 suggests that the findings supported the overall assumptions made with the exception of one, as demonstrated in Chapter 6, section 5.6 and section 6.4 Therefore, this study provides an empirical contribution towards theory development in the area of the influence of culture and gender as social factors in the diffusion of e-government products and services. This study also contributes to academia by confirming the findings of previous studies relating to e-government diffusion and related issues and by analysing the differences in culture and gender influences in multi-cultural societies within one national boundary.

Finally, in continuation of the theoretical contributions, this research studied e-government diffusion and adoption related issues, utilising data collected from a developing country, Nigeria. Several such studies were previously conducted to examine such variables within the IS area. However, no such effort has been made to offer a research approach or conceptual framework specifically employed to examine e-government diffusion or e-government adoption related issues with regard to such an area. According to the theoretical review in Chapter two, it shows that developing countries have their own peculiarities in terms of the diffusion and adoption of such IS technology. Thus, the current study presented a detailed research process and procedures reflecting upon the use of various research approaches and methods to investigate e-government diffusion and adoption issues from the perspective of the citizens in a developing country (Nigeria) under the heavy burden of cultural and gender differences.

Although some of the constructs utilised in this research were taken from established theories and models, prior research processes to study the impact of culture and gender on e-government diffusion as it concerns the citizens were not developed and validated in existing studies within the region. Therefore, it was considered essential to create and validate a new research process for constructs included in the conceptual model. Since such study practice is considered to be a contribution to knowledge (Straub et al., 2004), the research practice is considered to offer a substantial contribution towards the research methods in the IS field. This was achieved by modifying, creating and validating measures that correspond to various constructs included in the conceptual model. The research processes developed and validated in this research can be utilised to examine various emerging technologies within the context

of end users in most developing countries. Having discussed the theoretical contribution, the practical importance of the research is offered.

7.7.2 The contributions of the research to policy and industry

The aforementioned findings of this research, as stated in Chapter 6, section 6. 5, generated many issues that may assist both e-government policy makers and producers of e-government products and services. This research will contribute to policy by providing understanding to policymakers on the factors that drive citizens' acceptance of e-government products and services; thereby providing information for developers and policy makers to re-strategise. For example, since social interaction is found to be the strongest channel of communication for e-government products and services, it indicates that the government will have to engage in activities that will promote interaction within communities about e-government products and services.

This research will also contribute to policy by providing a greater knowledge of understanding of the level of influence of social factors on e-government acceptance. For example, it indicates that the government will have to provide e-government products and services to citizens in a package that will illustrate full representation from the community and its leaders. The government will have to think more about citizen-centric products and services and encourage the involvement of the local authorities. E-government policy makers will also have to provide alternative places for e-government access which only female citizens can use to access e-government products and services. This will help to encourage female participation, thereby increasing the diffusion of e-government products and services among citizens; hence, positive behavioural intention to adopt e-government products and services will be induced.

As mentioned earlier, the familiarity of the trainer was noted to improve trust in e-government products and services, and is also an important factor that influences citizens' behavioural intention towards acceptance of e-government products and services. This suggests that the policymakers should fashion a way to create an enabling condition that will allow the inclusion or the use of indigenes of a community to introduce e-government within their own indigenous society to gain the trust of the indigenous members of that society. Since such findings are considered to be important, the government policymakers should introduce a policy that will make the above explanation mandatory to help improve the trust of citizens with regard to e-government products and services.

The research question of this study was to evaluate culture and gender in order to determine their impact on the diffusion of e-government products and services. Referring to the research question that was initially posed in Chapter 2, it was learnt that culture and gender have an unequal or diverse impact on the awareness of e-government products and services within the country and in various dimensions within the indigenous societies.

It has been learnt that an important implication for e-government suppliers and policymakers is to identify segments of society that are slower in terms of e-government diffusion than others. By obtaining results such as those afforded by this research, the reasons for slow diffusion will be explored and steps will be taken to implement appropriate measures that will help to overcome such syndromes.

The language barrier, the language in which e-government is being delivered and the burden of gender role is also considered. Specific behavioural patterns have been noted among the female gender, especially the married women, among different indigenous societies. It was noted that provision of a support office that will always be available will allow the citizens ample time to use e-government services at their own pace. Such findings will provide the knowledge to e-government policymakers and the suppliers of e-government products and services of the need to develop an e-government one stop shop that will offer such services. It will help to improve the diffusion of e-government products and services.

Finally, the research will contribute to practice by determining if there is a need to personalise the e-government delivery pattern and the type of services which need to be delivered to every locality. It will also contribute, in practice, to the improvement of resources management in e-government project implementation in developing countries. Such aforementioned reasons provide substantial input to the development of e-government products and services, which will improve its diffusion.

Nevertheless, just like every other study, this research experienced limitations as result of some constraints; explanations are offered in the next section.

7.8 Research limitations

This research encountered several limitations, which are discussed and detailed below.

Data collection was limited due to religious and society observances within the indigenous societies. For instance, in the Hausa society, some Muslim female subjects could not be interviewed by the researcher on the grounds that the researcher is male. Therefore, the researcher's access to the female subjects' environment was not possible, thereby limiting the use of the researcher's observation notes which were a very vital source of data referencing during the data analysis. In this case, the researcher relied on the ability of the female research liaison personnel to conduct interviews. Details of the obstacles encountered were stated in section 4.4.3.3.

The data collected as a result of interviews might pose a validity problem due to the political or emotional inclination noted from some of the subjects' responses within the indigenous areas (Heeks, 2003). For insistence, a subject told the researcher that he has total loyalty to the traditional ruler. However, when they researcher asked if he would abide by traditional rulers' directives to allow his wife to participate in e-government training to help train others, he said that he would not allow that due to domestic duties and fear of not being able to control his wife anymore. The emotional attachment to his wife influenced the man's reply to the research question, not the cultural trait of the indigenous society. However, data collection from multiple sources undertaken in this research suggests that these inclinations have a minimal chance of affecting the findings.

An added limitation was encountered when citizens relayed an oral message which was different to the facts observed by the researcher, therefore contradicting the findings. For instance, when the researcher asked a citizen about their most commonly used access to information about government programmes and other related information, they identified the

TV. Further in the interview, it was discovered that there had been no electricity supply for more than six months in the area and the subject said he could not afford an electricity generator due to its high cost. Further probing revealed that the citizen was aware of a recent government voter registration programme; when asked how he knew of it, he said that he heard it being discussed among his friends in his workplace. This then contradicted his answer and led to the conclusion that social interaction is the citizen's available and most commonly used communication form instead of TV. An ability to fully dictate such contradictions would pose a problem to the findings. It also shows that a quantitative approach would not identify such results and thus would lead to different conclusions in Nigeria.

Due to financial implications, the study covered a limited area in comparison with the large potential scope of this research sphere and the number of subjects involved cannot be said to be sufficient to represent a significant percentage of the population. This study was focused upon utilising a qualitative approach that may have limited the ability of this research when attempting to obtain a wider view of the influence of culture and gender on the citizens when exposed to e-government products and services. However, due to constraints on both time and resources, it was not possible to conduct both qualitative and quantitative research.

Furthermore, the research involved both literate and illiterate subjects. In most cases involving illiterate subjects, the researcher employed and relied on the ability of the research liaison personnel to translate and transcribe the interview during the data collection and immediately after the interview. There were two individuals for each of the three indigenous communities. Therefore, when embarking on such studies, issues such as these must be considered.

This study provides a snapshot of the influence of culture and gender on citizens prior to and after being exposed to e-government products and services within their indigenous societies. The findings may change as e-government products and services become established and citizens become more aware of e-government. However, as this research has a limited completion timeframe, it is not possible to conduct further data collection in order to observe the effect of time on cultural behaviour.

During data collection the presence of RLPs who were well known to most of the subjects, posed to be a limitation to the collection of data on important variables such as exact age, exact income and educational level. As most subjects consider such demographic data to be sensitive and are, in most cases, very reluctant to discuss it, such information could have offered a deeper and richer understanding of the subjects' responses. Such data would be very useful to investigate how a particular age or income group would be affected by culture and gender traits of the society when exposed to e-government products and services and which segments would be more oriented towards e-government information awareness. This will provide a clearer and more complete picture of the influence of culture and gender on the diffusion of e-government products and services and will certainly be helpful in developing a further understanding of the critical segmentation of the subjects when considering other government programmes.

Finally, although the study showed the influence of culture and gender before and after a citizen is exposed to e-government products and services, it did not reveal how that occurs; this is difficult to explore using only a case study method. Considering that emotions and feelings are involved, the state of the subject's mind at the point of interview could be influenced by previous experiences which the research could not measure and determine, so such attributes could influence the subjects' responses.

7.9 Future directions

With regard to future studies involving the diffusion of e-government products and services, further research is required to examine whether the findings obtained from this study are specific to the three indigenous societies of the country or whether the results will be the same across the country and other developing countries of the world. Further quantitative research using an extensive questionnaire for the findings would have been useful to strengthen the findings of this research. Although this was initially included in the research design, it had to be abandoned due to the limitations of time and resources.

Furthermore, a longitudinal case study could have been employed to enhance the findings of this research. The data for this research has been collected over a short period of time and provides a snapshot. However, it could be expanded over a longer period of time to offer a longitudinal study. Further justification for undertaking a longitudinal study is the reasoning that the elimination of any variables or external influences with regard to emotion could affect the results of the research.

The aforementioned limitations to the study of the influence of culture and gender on the diffusion of e-government could be overcome by conducting longitudinal and quantitative research through the use of a questionnaire which will give the subjects the confidence and privacy they need to offer information about themselves. It would also help in the extensive verification of the research findings and coverage of the research among the population. The research suggests a longitudinal, quantitative study to be an appropriate future direction to overcome this limitation. This will allow greater representation of the population of the research area and extended confirmation of the research findings.

Further research will be recommended to examine the effect of religion on the perceived usefulness and intention to adopt e-government products and services. Such findings will help to strength the level of influence of culture and gender on e-government products and services within the indigenous societies.

Finally, in future, research examining the impact of culture and gender on e-government products and services in Nigeria should consider the importance of the person providing the e-government products and services. Previous e-government research has examined the impact of trust in the government (Belanger and Carter, 2008) or trust in e-government (Warkentin et al.; 2002); however, these studies did not consider the role of the personnel providing e-government products and services to the citizens, which this research identified as novel to the diffusion of e-government products and services. Therefore, future research in developing countries like Nigeria should also consider this factor. Such research will compare the relationships between trust in the government (Belanger and Carter, 2008), trust

in e-government (Warkentin et al., 2002) and trust of personnel providing e-government products and services, as found by this research. it is recommended that in-depth research using the above recommended research methods is required to examine the levels of the influence of trust on citizens before and after being exposed to e-government products and services.

7.10 Conclusion

In summary, this research journey began by determining whether culture and gender influences the diffusion of e-government in Nigeria. From the conducted research, it was noted that e-government diffusion will be influenced by culture and gender in Nigeria, which is certainly something for other multi-cultural developing countries to consider in the future.

However, the findings of the research could not be generalised to all citizens of indigenous societies as the behavioural pattern of all the citizens. The findings merely indicate that such traits could represent an inherent behaviour of most people from the area, which could determine their collective way of thinking and reasoning towards innovations like e-government, as found by Hofstede et al. (2010) and Rogers (2003).

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Appendix 1   Activity Program leaflet

University of Hertfordshire
De Havilland campus, Hatfield

Hertfordshire AL10 9AB
Telephone 01707 284000

To my dearest colleagues

I wish to express my sincere gratitude to you for accepting to be part of this important research project. For your information, this research project is being undertaken under the supervision of Dr. J. Choudrie, Reader, Information Systems, University of Hertfordshire, United Kingdom. Email: j.choudrie@herts.ac.uk. Direct Phone +44 1707 281271. In case of any problems or questions you can contact the research investigator or the supervisor. The research investigator is Engr. Emeka Umeoji, PhD Student, Department of Management Systems, Learning and Organization, Business School, University of Hertfordshire, United Kingdom. Email e.s.l.umeoji@herts.ac.uk Phone (+44 1707 273 505 or +44 7903 150436).

Further to our phone discussions I have included information regarding the research and its scope. Please take this letter as an introductory note to you as the head of the unit. I wish to inform you that I would like to have the details of your colleagues and their contacts too. All communication with every team member should be through you as the head and you are responsible for each member of your unit. I have made arrangements for your efforts to be rewarded accordingly.

The program of events together with the scope of the research has been explained below. You can adjust it to suit your team but it will serve as a guide to what you are expected to do with your colleagues.

The research and scope

This research will examine whether gender and cultures are factors of consideration when examining e-Government diffusion in a developing county; in this case, Nigeria.

This will entail an in-depth evaluation of cultural and gender within the indigenous tribes (ethnic societies) to determine if these factors do or do not influence citizen's acceptance and adoption of e-Government product and services. It will critically look at the conditions that these social constructs are viewed to influence or not to influence the acceptance and adoption of e-Government products and services? This research refers to a part of e-government that examines the Citizens to Government (C to G) section of e-Government. E-Government diffusion will be studied from the citizen centric view. Therefore, we will investigate and examine how e-Government diffusion occurs within a section of a society. It will only treat e-Government diffusion in terms of citizen's behaviour towards its acceptance and adoption. This research will examine a citizen's attitude towards the consumption of e-Government products and services.

In view of the area and samples of the study, this research will examine if any of the social constructs that we have formed vary amongst the different indigenous groups under study. The research will make use of three major different ethnic indigenous societies within Nigeria; namely Hausa, Yoruba, Ibo. These groups were selected on the basis of accessibility, availability, population distribution and influence over other smaller ethnic groups within and around them.

The samples of this research will come from the categories cited below:

Category 1: Those that have been exposed to the use of e-Government

Category 2: Those that have not used it before but are aware of its availability

Category 3: **Those who are ignorant of e-Government activities.**

These participants will be selected within each indigenous group. Each category will be referred to as a unit of research analysis. This research comprises two stages. The first stage is the pilot study.

This pilot study's results will be obtained from 18 individuals. Of these, 6 individuals (3 male and 3 female) will be from each of the indigenous groups in their local areas. Two participants (male and female) must be from each of the above mentioned unit of analysis or categories. The pilot will take a total of 18 days that is an average of a day for one individual. So each field team will have 6 individuals for interview.

The selection of individuals shall be based on the field coordinators assessment of the person with advice from the researcher.

At the conclusion of the pilot study, the main case study research will be conducted three weeks after. Detailed explanations will be offered during the face to face meeting with the team. The research information will be obtained from 90 individuals. During the main case study each field team will identify and select 30 individuals to interview. The process in the pilot study will be repeated but with more numbers of individuals. Instead of 2 individuals within a unit of analysis it will be increased to 10 individuals.

Described below are activities expected to be carried out by the field coordinators on or before 26th of July 2009 before the research begins.

Program of activities

1. Selection of team members (two excluding the team captain)

2. Introductory training (the purpose of the research)

3. Administering of subject Identification questionnaires and identification of the samples (participants)

5. Find out dos and don'ts of the individuals and society (e.g. sensitivity to any issues. e.g. Gender)

Please note that these activities must be concluded before the actual interview. Care must be taken to align the interview dates. It is planned to be one participant a day. We will also be taking photographs at certain points of this interview and recording the interview (Dictaphone, video camera, and/or hand written notes). This process can be altered to suit any team if the team suggestion is considered to be more efficient.

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Appendix 2   Subject Identification Questionnaire

University of Hertfordshire
DeHavilland campus, Hatfield
Hertfordshire AL10 9AB
Telephone 01707 284000

Subject Identification Questionnaire

Name of participant:

Address of participant:

Tribe that participant is from:

1. Indicate how literate the participant is (for example, Poor, Low, medium, high).

Allocate numbers accordingly to these grades. Please do this in a way that the participants will not be able to determine how they are graded.

(a) 1   (b) 2   (c) 3   (d) 4

2. Has the participant heard of e-Government before? (For example: online birth registration, online voters registration, online vehicle or motorcycle licensing, online national identity registrations, online payments for business premises or permit, online application for hawkers permit, online application for government bus ticket and online health related transaction with government?) (If yes, continue ahead. If no, continue to 5.)

 (a) Yes   (b) No

3. Have they used any government online services or products like the ones mentioned above? (If yes, continue to the next question. If no, continue to number 5)

(a) Yes   (b) No

4. What type of e-Government service/s have they used? Please describe in as much detail as possible.

5. Has the participant done any work with the government that requires access to internet (either assisted by someone or someone did it on the participant's behalf).

(a) Yes   (b) No

6. Is there anything the participant has done that can be offered by e-Government, even if the product is available as a paper copy. Examples include, birth registration, voters registration, vehicle or motorcycle licensing, or national census, payments for business premises or permit, hawkers permit, government bus ticket or health related transaction with government?

7. What date and time will be most suitable for the interview? (Care should be taken to suggest dates and time by the field coordinators. This is to enable them align dates of the other interview. Distance will be a determining factor for the time of interview.)

Date: Time:

8. Means of transportation to meet the participant and how far is the venue from the accommodation of the researcher.

9. RLPs remarks and Name:

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Appendix 3   Subjects Response Recording booklet

2 Sample of Subjects Response Recording Booklet: *Subject A*

Section B

08-32-09.02 Alalapa Idehot FC3

Appendisc 3

Pilot Study Note Taking Booklet

Section B

Que1. NO, It depends on Interese.

Que2. Anybody can do any jobs if that's

Que3. No it does not

Que4. yes

Que5. NO, it could be anybody.

Que6. No.

Que7. Social interaction is the last option

Que8. Very often

Que9. yes

Que10. yes, They can at the same time

Que11. It is dependent on The mgt of Cuber Cafes

11a. 7—8 yrs back
Cos of the use of the Cafe

3

11b. 7 - 8 yrs non

11c.

Que12. Anybody Can be the trainer but somebody I know will be preffered

Que13. Employment. will search for publications on employment

Que14. NO

Que15. Yes, my parents Consent. Becaus I'm still dependent.

Que16. ~Yes

Que17. Anybody Can lead the Campaign

Que18. Yes It will influence my decision.

Que19. NO I cannot affect it Cos I'll always plan ahead.

Que20. NO Special Sitting arrangement. There are some Social gatherings that women are restricted from attending.

Que21. YES NO

Que22. Yes

4

Que23. Not aware of any law now

Que24. Religious leaders (imams, pastors etc)

Que25. The Consult Some of the leaders under them b/4 taking a decision

Que26. yes

Que27. Most people will obey them.

Que28. NO

    28a

    28b

    28c

Que29. yes my family influences me a lot

Que30. yes, so long as the project is laudable

5

30a. yes

30b.

30c.

Que31. yes

Que32. No. I'll rather use it when it is Convenient and not when somebody is pushing

Que33 yes

Que34 yes i'll preffer Somebody that has used it before

Que35 NO

Que36 I'll preffer to learn and do it on my own.

6

Second Sample of Subjects Response Recording Booklet: *Subject B*

Appendix 3 M/c 3

J.1.0

Emmanuel apara **Pilot Study Note Taking Booklet**

Section B

Que1. No, the man get more opportunity, and due to the family pressures they handelle it better

Que2. Women tends to get more Jobs

Que3. It's only politicians—they get information about —the e information things

Que4. the use is frequently

Que5. Yes—they can chart together — NO

Que6. NO it doesn't limit anything eos I get all my information—through the mass media

Que7. Relating with people and new pappers

Que8. Rugasrally, one's or three in the day

Que9. Man is preferred, the reason men are mostly directors and men do it better

Que10. Yes of cource they can use it.

Que11. No, most of them is self owned by private organisation.

11a.

3

11b.

11c.

Que12. Yes, because I will learn it faster.

Que13. Yes, maybe for some political assignment

Que14. No, the approval is many because it is self decision.

Que15. No NO I can acquire it anytimes,

Que16. Yes, I will with the little exposure I have.

Que17. Yes, I prefer the men de leading the government because they are more serious in what they do

Que18. Yes

Que19. No Yes

Que20. No sitting arrangement the young sir together and older people sir together

Que21. No they are no specific places.

Que22. Yes they all can sir together.

4

Que23. NO

Que24. Eze, President community union, which is entitled to the a particular village, while the EFC controlled the entire community.

Que25. Yes they will be interested, but the financial aspect might be a problem

Que26. Yes it will be obeyed because they are the authorizing

Que27. Yes because it will affect them positively

Que28. NO

28a NO it has not happened before

28b

28c

Que29. NO Yes, its more comfortable and exclusive.

Que30. NO, I wont because I will really love to do so without being pushed by anybody, because it obviously my own benefits.

5

30a.

30b.

30c.

Que31. Yes he will be very comfortable.

Que32. Yes he will need to decide by himself

Que33. Yes I will like to be taught about it before using the computer

Que34. Yes he will prefer to be taught by someone that has used it before.

Que35

Que36

6

Appendix 4   Demographic Questionnaire
Section A

This section is to be completed by all Subjects

To what age group do you belong?

☐ Under 16   ☐ 17 - 24   ☐ 25 - 34   ☐ 35-44

☐ 45-49   ☐ 55-64   ☐ 65-74   ☐ 75-84   ☐ Over 85

☐ 50-54

Gender

☐ Male   ☐ Female

Highest level of education

☐ GCSE   ☐ A Levels   ☐ GNVQ / Diploma

☐ Degree   ☐ Postgraduate/Research   ☐ Others

Others (Please state)……………………………………………………………..

Please state your occupation…………………………………………………………..

Please state name of town/city and country that you live in …………........………………

What is your household's monthly income? (Local Currency/Naira)

☐ Less than 10,000   ☐ 10,000 - 19,000   ☐ 20,000 - 29,000   ☐ 30,000 - 39,000

☐ 40,000 - 49,000   ☐ 50,000 - 59,000   ☐ 60,000 - 69,000   ☐ Over 70,000

Do you have a computer (PC) at home?

No   yes

If you answered 'No' above, please tell us where do you mostly use a computer from?

   ☐ Office   ☐ School   ☐ University

   ☐ Internet Cafe   ☐ Others   If others is selected, please

state where………………

Do you have Internet access at home? (If the answer is yes, continue; if no jump to section B

☐ Yes   ☐ No

What type of connection do you have at home?

Broadband   dial-up

What do you use computer mostly for.

Ethics Number BS/R/004 07

Appendix 5   Main Questionnaire

Pilot case study questionnaire

For gender, the main research question is: How do gender elements influence awareness and acceptance of e-Government products and services within the indigenous regions?

To investigate this, the following pilot questions are formed to provide answers to the main questions. The questions are as follows.

Element 1: Gender division of labour.

Questions.

1Does the respondent think that there are jobs men handle better than women.

1a. Does the respondent think men stand more chances of getting jobs in e-Government fields? Why?

2.Does the type of job the respondent do as a woman or man influences his or her sources of information about government activities (like online voting, online civic registration, online licensing of vehicles or motorcycles and online birth registration) Or he or she is just not interested in government information? Why?

3. Does the respondent think that the type of job woman get as women and the type job men get as men determine his or her access to channel of communication? (example if the respondent job limits him or her chances of accessing, reading newspapers , listening to TV, Radio, reading newspapers, any form of social interaction or the use of internet.)

Element 2: Access to technology.

Questions

4. What technology does the respondent prefer to learn about new products especially if it involves Government (except social interactions)?

a. TV,

b. Radio,

c. Newspaper

d. The internet

e. The mobile phone

5. Does the respondent have access to the preferred means of communication?

Will the respondent have any reservation to the use of a public facility (no charge to use the facility and is provided in some way or the other, by the government) to use e-Government product and services.

6 Would this hold true if the facility was being operated or is managed by a man or woman? Why? (Example: If you are a woman, would you use a cyber café if it was managed or owned by a man?)

7. Will the respondent mind about the gender of the person in charge of any of the means of channels of communication for dissemination of information about e-Government products and services like Birth registration? Why?

8. If you are a woman and a woman is working in the e-Government one stop shop in your area, will you be more comfortable to learning about e-Government products and services and use them like civic registration.

9. Will the respondent's be interested in learning about e-Government products and services like online civic registration when the preferred means is used for the dissemination of information about e-Government products and services.

10. Can women and men use cyber cafes at the same time and period?

   d1. Is internet access being supervised or controlled by any authority?)?

   d1a. How do you know this?

   d1b. How long has this been continuing for?

11. Will the respondent be able to get training or learn about the e-Government product and services when the means is employed for educating and training him or her?

12. Will the respondent prefer a trainer known to him or her to provide training or assistance to her/him when using e-Government products and services? Why?

13. If the respondent is provided with personal computer and access to internet will he or she be interested to learn about the use of e-Government products and services.

Element 3: Control of Resources and Empowerment.

Questions

14 Does the respondent takes sole decisions on how to spend his or her financial earnings? Why? For Example: do you need the permission or the approval of your husband or anybody to make major expenses like buying TV. Computers.

15 Can the respondent acquire or buys any means of channels of communication like (TV, Radio, newspapers, personal computer with internet, mobile Phones) whenever he or she likes.

16. Is the respondent likely to buy or pay for e-government products and services even when he/she is responsible for his or her financial income? Why? For example payment for online registration of business, business permits or birth certificate.

Element 4: Gender and technology

Questions

17. Can the respondent acquire training (formal or informal) to use e-Government if he or she desires it and is affordable? Why?

17a If a woman or man is leading e-Government product and services awareness campaign will it increase participant interest in the e-Government products and services?

18. Will the respondent want to use e-Government product or services like online birth registration if his friends and neighbours or her friends and neighbours are using the services.

Element 5: Gender role

Questions

19. Does the role of being a woman interfere in his or her time to interact with any form of communication channels like watching TV, reading newspaper, listing to radio or participating in social activities? Why?

If the respondent is a man does he think that watching TV, reading newspaper, listing to radio or participating in social activities disturbs his time to perform his manly role?

20. Has the respondent seen or listened to any e-government products and services adverts or campaign on any form of communication channels like watching TV, reading newspaper, listing to radio or in an interaction in social activities.

21. During social gathering for awareness campaigns are women given seats at the back of their male counterpart or are not allowed to attend.

22. As a woman do you think women will be more co-operative if the information regarding e-government products and services is distributed in their social circles-maybe groups where women meet?

Alternatively, will information regarding e-government be better received and distributed if men receive the information at their regular weekly meetings or the markets?

Element 6: Gender inequity

Question:

23. Can men and women learn about e-Government products and services together (Like online birth registration, online paying of Tax).

23a Can both genders use one common place for the use of e-Government products and services?

23b Are the laws regulating men from teaching the female gender about the use of technology like e-Government? How? Why?

Pilot Culture guide questions

For culture the main research question is: How does the element of culture influence e-Government awareness channels and e-Government decision processes within the indigenous society of the country.

Note: *The researcher will first try to find out the most respected local institution in the area and what it is called.*

Element 1: Power distance

24 Do the community leaders like village chiefs, Emir, Obas , Igwes ,clergy or Imams consult citizens when they want to undertake decisions involving their community and any government related activities regarding the community?

25. In case if any member of the respondent community want to go to enlightenment campaign function (like immunisation awareness campaign or political campaign rally) and the village chiefs or Emir or Obas or Igwes or clergy or Imams in their community directs against the attendance of such function must the indigenous person obey that directive.

26. Does the respondent think that the village chiefs, Emir, Obas , Igwes ,clergy or Imams have power to stop the community from listening to some programs on TV, radio and reading a newspaper.

26a. Has it happened before?

26b. How?

27. Will the respondent be influenced more by family and close friends to use online services like e-Government for the registration of a birth or application for business permit than when instructed by the community leaders, village chiefs, Emir, Obas or Igwes to use online government products and services?

Element 2: Individualism versus Collectivism

28. Will the respondent want to learn about online birth registration or online vehicles licensing or online application for business permit if he or she discovers that one of his or her friends or any of the neighbours and someone in his or her age groups within the same income level is using it for his or her applications?

29. Will the respondent learn about online civic registration, online voting, and online application for vehicle or motor cycle registration if his or her community takes up training and teaching of how to use such things as a community project?

29a. Has any related incident happened in the community before?

29b. Let the respondent give examples?

30. Will the neighbourhood or immediate social system (kindred, villages) decision to use online birth registration or online vehicles licensing or online application for business permit

be complied with than when the wider society (state, kingdoms, local authority) directs that? Why?

31. Will the participant choose to decide for him or herself when to use online birth registration or online vehicles licensing or online application for business permit than when the community is pushing him or her to use it?

32. Will the respondent prefer to learn about the use of online birth registration or online vehicles licensing or online application for business permit form someone that have used it before than through mass media like, TV, Radio, newspapers or internet or social interactive forums

Element 3: Uncertainty Avoidance (UA)

33. Will the respondent be able to learn how to use online birth registration or online vehicles licensing or online application for business permit even when he or she does not understand how it functions?

33aWill the respondent be interested in online birth registration or online vehicles licensing or online application for business permit products rather than how the technology behind it works?

34. Does the respondent think that he or she will be able to use online birth registration or online vehicles licensing or online application for business permit after watching it on TV, listing about it on radio, reading about it in the newspaper or even when discussed in any form of social interactions.

34 a. Why?

Element 4: Time orientation

35. Do you think how long it takes to learn about how to use online birth registration or online vehicles licensing or online application for business permit is more important than how fast and affordable the system is.

36. Does the participant think is a waste of time trying to learn how to use online birth registration or online vehicles licensing or online application for business permit through mass media like TV, radio, newspaper or social forum than keeping a worker at one stop shops to assist in doing that.

Contact details: Thank you very much for your time and patience!

Ethics Number obtained after approval from University of Hertfordshire Ethics Committee: BS/R/004 07

Appendix 6   Revised Questionnaire

This questionnaire is an example of the final questionnaire used for this research.

Case Study Questionnaire

Identify any government transaction he or she is familiar to and form questions based on that. Eg. registration of Examination or online company searches.

1 What type of work or profession do you thinks suits you.

1a Do you think that there are jobs women handle better than men?

1b Do men stand more chances of getting jobs involving the use of computer in Government departments? If so, why?

2. Can the type of employment women get influence the way they obtain information on government activities (like online voting, online civic registration, online licensing of vehicles or motorcycles and online birth registration) or they are just not interested in government information? Why?

3. Can you freely use a cyber cafe at no cost for the registration of your child birth or apply for your international passport

4a if you have a cyber cafe what gender will you prefer to manage it

4. Will you want a woman rather than a man to teach you how to use e-Government products and services like Birth registration? If so, why?

5. Do you think your job limits your access to reading newspapers, listening to TV, Radio or any form of social interaction or the use of internet?

6. Which method is the best way of getting information?

a. TV,

b. Radio,

c. Newspaper

d. The internet

d. The mobile phone

6a Do you use these methods regularly?

7. Will you want that method to be used to teach you about online voting, online civic registration, online licensing of vehicles or motorcycles and online birth registration.

8. Can women and men use cyber cafes at the same time and period?

9 Is internet access being supervised or controlled by any authority?

If the answer is yes, answer the questions below or continue to **10**

9a. How do you know this?

9b. How long has this been in operation?

10. Will you want someone you know as a trainer to provide training or assistance to you when using any government online products and services? Why?

11. If you were given a personal computer and access to internet will you want to use it for any form of government transaction and interactions?

11a. What government transaction and interaction would you use it for?

12. Do you need any family member(s) consent or approval to buy TV, Radio, newspapers, personal computer with internet, mobile Phones or other type of house hold equipment?

13. Can you acquire training (formal or informal) to use any of the e-Government services or product like, online voting, online civic registration, online licensing of vehicles or motorcycles and online birth registration if you desire it? If not, why?

14. If you have access to internet will you be able to register your child's birth online or apply for business permits or any such activities online?

15. Do you think the type of gender that leads e-Government product and services awareness campaign can influence your interest?

16. Will you want to use e-Government product or services like online birth registration if your friends and neighbours are using the services.

17. Do you think watching TV, reading newspaper, listing to radio or participating in social activities will disturb your gender role? If not,why?

18. Is the any pattern of sitting arrangement during social gathering?

18a. Can women and men attend all type of social gathering together?

19. Do you think women or men should have special places to discuss programs like using computer to register child birth and obtain certificates or vehicle registration? What places?

19a Can men and women sit together to learn about e-Government products and services together (like online birth registration, online paying of Tax).

20. Are you aware of any law(s) regulating the use of technology like e-Government?

20a. What laws?

20b. How did you become aware of the law(s)?

Before asking the question below the researcher will ask, What is the most respected traditional institution or authority in this area and what is it/he called? Has such a leader taken any leading role for the e-Government initiative or any government activities?

21. Do community leaders like village chiefs, Emir, Obas, and Igwes, clergy or Imams consult citizens when they want to undertake decisions involving their community and any government related activities regarding the community?

22. Must the directives of the local authority like village chiefs, Emir, Obas , Igwes ,clergy or Imams not to attend the enlightenment campaign function (like immunisation awareness campaign or political campaign rally) be obeyed.

23. Do you think most people in the community will also obey the directives? Why?

24. Do you think that the village chiefs, Emir, Obas , Igwes ,clergy or Imams can stop the community from listening to some programs on TV, radio and reading a newspaper.

24a. Has it happened before?

24b. How?

24c. Why?

25. Will you be influenced more by family and close friends to use computer for the registration of a birth or application for business permit than when instructed by the community leaders, village chiefs, Emir, Obas or Igwes to do so?

26. Will you be pushed to learn or use computer for civic registration, online voting, and online application for vehicle or motor cycle registration, if your community is in charge of training and management of the place where these services are offered?

26a. Has any related incident happened in the community before?

26b. Please provide an example?

26c. When did it happen?

27. Will you be more comfortable with the neighbourhood or villages' decision to use computer for birth registration, vehicles licensing, and online application for business permit, than when the state directs that? Why?

28. Will the participant choose to decide for him or herself when to use online birth registration or online vehicles licensing or online application for business permit than when the community is pushing him or her to use it?

29. Do you need to know how a computer works before you will want to use it?

30. Will you prefer to learn about how to use computer from someone that has used it before rather than through mass media like, TV, Radio, newspapers or internet or social interactive forums?

31. Do you think how long it takes to learn on how to use online birth registration or online vehicles licensing or online application for business permit, is more important than how fast and affordable the system is?.

32. Do you consider learning how to use online birth registration or online vehicles licensing or online application for business permit is more affective using mass media like TV, radio, newspaper or social forums than keeping a worker at one stop shops to assist in doing that?

33. How do you know this?

33b. Have you had any previous experiences that you can cite?

We are very grateful and once again we say thank you very much for your time and patience!

Respondent Contact details:

Ethics Number obtained after approval from University of Hertfordshire Ethics Committee:BS/R/004 07

Appendix 7   Subjects Responses Data record

Due to the size of this thesis I could not attach the responses of subjects but this could be made available in soft copy for your inspection. I regret the inconvenience.

(A single copy of subject's response from each of the indigenous ethnic society was attached.)

Except from the Yoruba subjects responses record

The questions pose to the respondents	**The category 1-** this category are the people that have used e-Government and are aware of it.	**The category 2-** this category are the people that have not used it and are aware of it.	**The category 3-** these categories are the people that have not used it or heard about it.	Researchers' remarks and conclusions.
Demographics Data.	**1**.Age Male 45-49 **2**. E/L= Diploma **3**. Income= 40,000-49,000 **4**. Internet Access= Pc at office with internet **5**. Internet Type = office, Broad band **6**. Office work	**1**. Age Female 45-49. **2**. E/L= Degree **3**. Income= 60,000-69,000 **4**. Internet Access= Pc at office and home with internet **5**. Internet Type = Broad band office, House Dial up.	**1**.Age Male 17-24 **2**. E/L=Others **3**. Income= 30,000-39,000 **4**. Internet Access= No Pc **6**. Don't know about it	Question 4 can be used to determine access or to test for division of labour
Que1 -4 Test for gender Division of labour (DL)	**Ans**. Professional Some job could be done better by women like typing. Men stand more chances of getting computer jobs I can read about anything i want to know. Basically I will like a man and anybody can teach me	**6**. Office work and house mostly reaching out to friends through email when at home **Ans**. Anybody can do any job if you set your mind to it. You learn more about your job than any other thing. A man will work for me. Anybody can teach me	**Ans.** Office work Yes, job discrepancies due to gender exist and it affects information flow to one. If it is the one they type something women will be more favourable to get that than men. A man will work for me	

Que 5-11 Test for Access to technology (AT)	Anybody. Yes if it is important. Anybody can teach me. Anyway my Boss is a woman. No restricted access to any source of information and he believes anybody can get any information. Definitely you will want someone you know. Yes I can use a Cyber cafe at any time	Anybody. Yes can use it for anything that is important like child registration. Anybody can teach me. No known restriction on access to information but can't always go to social gathering due to time. Like my work and domestic issues. Prefer Newspapers, Mobile phone. Can go to any cyber cafe but not at night. No restrictions to internet. Prefer some one I know.	I think a man. If I can use a computer why not? I don't like women teaching me. Free access to any source of information. But not in all cases of traditional information. I think Social interaction is the best way to inform most people here. Yes we are always informed through social gathering. Like during census. We were told clan by clan. Not all the time festive period and night period women are not allowed to go out. I wouldn't know if internet is supervised or not. Definitely if i know the trainer it will make things easier for me. Yes will use it for that once I can use it	
Que 12-14 Control of Resources (CR)	I am in charge of my resources and spending. Yes can get the training. Will like to do anything through there once is possible	I control my resources and spending. But will want my husband to buy those ones. Yes can get the training. Why not? It will save me a lot of time.	I am In charge of my resources and can acquire any medium of communications. Yes if I want the training. I don't know how to use that but will do it if it is good for me.	
Question 15-16 Test for the effect on Gender and	Anybody can be in charge. In case if I don't know	Not at all Anybody can. Yes friends can	I don't think I will like a woman teacher. Once my	

Technology (GT)	about it I will be force to use if my friends are using it	influence me to use a service like that.	friends are using it I will use it.	
Question 17-19 Test for Gender Role (GR)	I can go anywhere and watch anything. In social gatherings we sit according to your society status. In some traditional gathering women don't attend.	Thou I am not restricted to anything but at time domestic work could disturb me from doing that. I remember what happened to me in my school days. I was pregnant and was missing most of my lectures. Most times social status determines where you sit. Yes almost all the gathering. Yes we can learn together.	No. It Does not affect me. I think there is no sitting pattern unless social affiliations distinguished that. Not all social gathering. I will not be comfortable to sit with women to learn the same thing.	
Question 20 Gender inequity	Don't know	Don't' know	Don't know	
Question 21-24 Test for power distance (PD)	The Oba. I don't know of any but has led some other government initiative which was recorded to be successful. He has his cabinets that he consults with. Everybody will obey but it must be a good decision.	Oba is most respected. I can't think of any. I think he will be obeyed. They have a way of enforcing this type of laws.	Oba. I don't know. He consults only his allies and titled Chiefs which are also his allies. Everybody will obey. Our youth wing will enforce it. if you don't obey we will pay you a visit.	Paying a visit according to the category three of the 3rd stage means that Oba will send the youths to either collect you things or destroy it.
Question 25-28 Test for Individualism and collectivism	Nobody can do that even if he says that, how can he enforce that. I know what I want and what is good for me. The community is the Oba and the Cabinets (laugh). Thou if is a community thing is still ok.	Oba will not make such pronouncement because it is impossible to monitor. Friends and family will influence me more. If it is community I will take part but prefer to do it at my own time	If my people (Oba and his Cabinets) decide we will all abide by it? both friends and Oba can influence that. I will participate more if it is a community project.	

Question 29-30 Test for Uncertainty Avoidance	Yes I will like to know but it won't stop me from using it. People will learn from us. But someone you know to teach you is always good.	I need to know. Will prefer some one I know.	Will like to know how it works first. Someone I know.	
Question 31-33 Test for Time orantations	The value is more important. But won't mind anyway to learn but having a one stop shop is better	I Think how valuable the usage is, is important. Having a place to do that will be best.	Can't waste all day learning something that will not give me money. But will like to have a place I can go at my own time to learn.	

Excerpt from the Ibo subjects responses record

	Age= 34-44 Gender= Male E/L= Degree Occupation= Banker Town. Akpugo Income=Over 70,000 Home P/C= Yes Internet Access= Yes home Type of internet= Dial up. Usage= Office and personal business. Do chat and send emails	Age= 17-24 Gender= Male E/L= Diploma Occupation= Student Town. Agbani Income= Less 10,000 Home P/C= Yes Internet Access= Yes home Type of internet= Dial up. Usage Home=School work and emails and chatting.	Age= 50-54 Gender= Male E/L= Degree Occupation= Trader Town. Ozalla Income=Over 70,000 Home P/C= None Internet Access= Cyber cafe for personal business. Do chat and send emails Type of internet= None	
Que1 -4 Test for gender Division of labour (DL)	**Ans**. I like Telecommunication jobs. Yes we have jobs women do better than men. I don't think so. Duties and jobs have a way of effecting what we know. Will like a man and anybody. Yes I can use a cyber cafe. I don't care who teaches.	**Ans.** like to work for myself as an Engineer. I don't think so; it all depends on the individual interest. Job is on equal opportunity for both genders. Information is mostly sourced based on interest. A man. Anybody can teach.	**Ans.** Want to go into estate. There is before now but these days I don't think there is much job discrepancies. Anybody can get any job once you are qualified. Most things we know tend to revolve round what we do. Anybody can manage and teach.	

Que 5-11 Test for Access to technology (AT)	My job helps improve my access to information. The internet and Newspaper. I use them very often and will prefer to get information through them. Yes we use cyber cafe together. Not sure. Training by a familiar person improves the learning ability. Yes I will use it mostly for application for international passport.	I can use it for anything if I know about that. Anyone can teach so long as you're good. Being a student it pushes you to read about many things. Internet and mobile phone. Yes all the time. Internet or social interactions. Yes both genders can use it together. I don't know about filtering of internet. Anybody can train me. I can use for any government transaction if I know about that. Apply for drivers licence.	I can use that. Anybody can teach. I do what I want do, my job does not affect my access to information. Social interaction and newspaper. I use them whenever I can. Yes it can be used to teach me. Anybody use the cafe anytime. Nobody censors the internet to the best of my knowledge. Anybody can so long as you are good. If I am aware of any one working why not. At least apply for national ID.	
Que 12-14 Control of Resources (CR)	I control my income and can acquire any training I want.	I control my resources and can get any type of training.	I control my resources and can get any training if I desire it. Registration of my children should be my wife's responsibility.	
Question 15-16 Test for the effect on Gender and Technolgy (GT)	Who leads the awareness campaign does not matter. Will want to be part of the trend.	Anybody can lead the campaign; if my friends are use it I will also like to use it.	Anybody can lead the awareness campaign. But mostly it will be my decision to use it.	
Question 17-19 Test for Gender Role (GR)	Not at all. Domestic work is mostly for women. Do you expect me to be babysitting where my wife is still alive? Most time you notice a kind of pattern but are normally done	No. I don't do much at home. Yes but I think is mostly by social status. Yes but some traditional gathering, women are barred from attending. Like Masquerade	I can watch TV or access any media whenever I like. Not really but most times is by social status and the type of gathering. Everybody can learn together.	

	unconsciously. Not all but most of them. No we can sit the same place.	Night show. No we can all learn together.		
Question 20 Gender inequity	No law	No law	No law discriminates against any gender	
Question 21-24 Test for power distance (PD)	Is called the Igwe. I can't remember him leading government programme. They consult but in most cases of issues involving the town is the town union that takes most of the decision although with Igwe's consent. Nobody will obey that unless the town union backs it.	Igwe. Yes the do that by involving the town union to discuses that. Unless if it is urgent the Igwe and his Council with the executives of town union can take decision immediately. Igwe can do that unless the Town Union supports that. If Igwe says that very few people will obey him.	Igwe. I don't think or can't remember any. Yes Igwe can't take decision involving the whole town by himself and council members. They must table it before the town union. Igwe is just a local ceremonial head the way you have it where you come from (Referring to Queen of England.)	Town union is an umbrella body of a particular community. Every male adult that reaches marriageable age automatically becomes a member. I discovered that whatever decisions the take will be binding to all citizens of the town even people living outside the community. I was lucky to attend one session of the meeting and discovered that women don't attend such function unless invited. This contradicts the claims that their Igwe is most respected authority in that community.
Question 25-28 Test for Individualism and collectivism	The Igwe can't do that. If the community through the town union set out to archive that they can, but family will influence me more. You know when u say community you	O! He can't even think about that. Friends and family will influence me more. Because is the community I will participate but will prefer my own time. The	He does not have the clout to do that. I take my decision by myself. Nobody can force me to do that when I don't want. Even the community	

	are talking about the town union, u are bound to be part of it either the union will make you pay levy or you work as labourer there. Yes both during construction of health centre, post office and may others. I don't I will care about who directs but more on how useful. I take my decisions.	state has not done any meaningful thing to this community rather most amenities you see here we provided by us, so why should I listen to them. (He favours the community). I will like to do it at my time but you know the community can push that and everybody will comply.	might even influence me somehow but not state.	
Question 29-30 Test for Uncertainty Avoidance	Yes will like to know. Will like to learn from someone who used it.	Yes I have to know how it works and the purpose to be able to use us. Definitely will like to learn from someone that has used it.		
Question 31-33 Test for Time orientations	In learning time is of essence. So in as much as it is useful I don't have to waste all the time in the world to learn it. One stop shop will improve awareness and usage	Think how affordable and available is important. Keeping someone in one stop shop and discussing e-government in a social gathering will be more effective.	I am particular about my time so I will mind. Discussing it in social gathering and have a local person to man the office will improve awareness and usage.	

Except from the Hausa subjects responses record

	1.Age Female 25-34 **2**. E/L= Degree **3**. Income= 50,000-59,000 **4**. Internet Access= Pc at home and office with internet **5**. Internet Type = office Broad band and House Dial up. **6**. Office work and chatting when at home	**1**. Age Female 17-24. **2**. E/L= Undergraduate **3**. Income= Less than 10,000 **4**. Internet Access= Pc at home with internet **5**. Internet Type = House Dial up. **6**. school work and mostly reaching out to friends through email and chatting when at home	**1**.Age Male 65-74 **2**. E/L=Others **3**. Income= Undisclosed **4**. Internet Access= No Pc **6**. Don't know about it
Que1 -4 Test for gender Division of labour (DL)	**Ans**. Some job could be done better by women. Men are more technical so can get that type of job easily. Jobs influence what you know most times.	**Ans**. Believe some jobs could be done better by women. There is no gender limit to what you know about government or the e type but women and men are not suppose to know the same thing. The subject believe it favours men due to the fact that men dominated the top level of management cadre that employs.	**Ans.** Yes, job discrepancies due to gender exist and it is the same to information flow. But most times information is a matter of interest.
Que 5-11 Test for Access to technology (AT)	No restricted access to any source of information and he believes anybody can get any information	No know restriction on access to information but gender duties could influence it.	Free access to any source of information regarding the government but not to all involving the

		religion or community.	
Que 12-14 Control of Resources (CR)	I am in charge of my resources and spending but not without my husband's approval	I control my resources and spending. But I consult husband.	In charge of resources and can acquire any medium of communications.	
Question 15-16 Test for the effect on Gender and Technology (GT)	Anybody can be in charge. In case if I don't know about it I will be force to use it if my friends are using it.	Anybody can teacher. Yes friends can influence me to use a service like that.	I don't think I will like a woman teacher. The teacher will be well known to me and I will trust him.	
Question 17-19 Test for Gender Role (GR)	It depends on the place but I can access any medium of dissemination of information. Men and women don't sit together everywhere. Is possible in school to sit together but not in mosque or community gathering. The domestic work will definitely effect you time.	Thou I am not restricted to anything but at time domestic work could disturb me from doing that. No I don't think the men can allows us to sit together and learn such thing unless is within the school.	No. It Does not affect me but I will not be comfortable to sit with women to learn the same thing.	All The respondents are Muslims and believe that men and women are not born equal.
Question 20 Gender inequity	I told you that it is just a religious thing not a law. But here such religious rules are treated like laws	Not aware but most times people say things like that but can't see how they will implement that. Although it is mostly a	Yes Allah prohibits the viewing of unworthy images and thing that can defile our body.	The 3rd respondent makes reference to Tv as being a means of corruption. "I can't look at that screen that shows naked

		religious thing.		women I only get my news through my radio".
Question 21-24 Test for power distance (PD)	Emir is the greatest, everybody will obey but it must be a good decision. He has his cabinets that he consults.	I know the Emir is respected. But I think some people will prefer the Imam and are more loyal to him.	The Emir. Nobody disrespects him even when you do it is an abomination not to obey him. He can't take a bad decision because he has his wise men (cabinet members) to consult. The Imam is a Man of God and directs people on the right thing to do.	
Question 25-28 Test for Individualism and collectivism	I don't think the Emir will want to do such a thing, even if he says that how can he monitor it. The Emir can do that and nobody will go contrary to that or the will deal with you. The community can put pressure on everybody to obey a particular decision. My friends and family can influence such interest.	Emir must be aware before you make it a community issue. Friends will influence me more. If they decide we will join but will be pushed more if it community project.	If my people decide we will all be part of it. But such decision is mostly discussed in the Emir's place. Look young man Emir takes a decision everybody must abide by it. it cannot be a bad decision against his people.	The 3rd respondents believes that women and men not be able to attend most community gathering is the making of God. (Allah). When asked why? "He said that, we are humans and we will try as much as we can to avoid temptations".
Question 29-30 Test for Uncertainty Avoidance	If it is good and can help me solve a lot of problems I won't mind. Will like one on one tutoring.	No don't need to know once is good for me. Will prefer some one I know.	Someone I know. And Comfortable with. when asked why? He said that, "I have to trust what he is going to tell me because we can commit sins by what we	

			hear".	
Question 31-33 Test for Time orientations	I don't mind how long it will take so long as I have a place I can always go at my time without hindrance to learn and use it.	Will not really mind how long it will take. It will be best to have a reserved place I can go and practice that at my own time.	I will like to know what is used for and how. Time might not be important in this case.	

Appendix 8   Result Validation Notes

 (*Note: the validation questionnaire was designed according to the findings of the three indigenous societies) one example for each of the indigenous society was attached and their comments are marked in red*).

One sample of the Yoruba findings validation questionnaire.

This case study research finding provided insights into the influence of culture and gender on the diffusion of e-government products and services like the use of computer to apply for international passport through the internet, or application for drivers licence. The section below discusses the different elements and influence on medium of communicating such e-government products.

NB: Please the researcher requires your views and suggestions on the findings of the research. Please reply to <ins>emekaeleos@yahoo.com</ins>

Name: Ogunmuko Babatunde O.

Profession: Civil Servant

Average Age: 52 Years

Income: N1,800,000 per annum

First language: Yoruba

Findings on mode of communication:

From the findings of the research interpersonal interactions regarded as social interaction are the most common means and the most used means of information transfer amongst most people from your indigenous community. However few subjects indentified other means like media (Tv, radio and newspaper) and internet based communication channels (world wide web) but provided views there was an emphasis on the stronger influence of families, friends, community and their traditional leaders opinions on their ability to make decisions.

Some gave examples to show how such influences have pressured them against their opinion and embark on some activities they consider unimportant.

A subject told the researcher that he was forced to purchase a personal computer and install internet connectivity to it because his children came back from his neighbours house one day and told him how his neighbour bought computer and installed internet connection to it. The children told him that everybody in the house was happy because of that. In other to bring such happiness his house he followed suit but did not want the children to know that it was because of what they told him. He told the researcher that he owe his advance knowledge about computer to that.

In the above case, it was as a result of interpersonal interaction with his children that triggered his interest in PC.

However it was noted from most of the subjects that they have either heard about some government programmes through other medium like media (TV, radio and newspaper) and internet based communication channels but mostly interpersonal interaction assert more persuasive influence on citizens ability to participate in such government programmes within your community.

Comment: True. It is a product of poor infrastructure and literacy level.

Findings on gender divisions of labour:

 It was discovered that most times the type of Job one does influences what one knows. As an example, social interaction involves inter personal discussions. From the subjects responses considering the fact that most jobs are believed to be held by men, and the type of job women take up and seem comfortable with within the societies places them at a lower level of knowledge and unlikely to talk about e-government during interpersonal discussions.

Therefore, the gender division of labour will impact the level of interpersonal discussion amongst the female subjects from your indigenous community.

Comment: Fairly true; but neither of the genders is totally excluded in jobs. Both sexes interact freely.

Findings on gender equal access to interpersonal interactions:

It was generally noted among the subjects that the society frown at the interaction of women with people outside their families. The burden of gender roles, like catering of children by mothers and the society regard for women that freely interact with opposite gender are all part of the social norms and observance within the societies. Such society traits will influences the attitude of women towards social interaction when it is employed as e-government communication means.

Comment: Such norms are fast disappearing giving women more freedom to interact and share information with men.

Findings on gender resource control:

Most women control their resources (control for money earned). Most women in your indigenous community can freely make decision about what they want to spend their money e.g. like purchase of personal computer or enrolment into short courses to improve their knowledge. The women's decision to acquire any type of knowledge through inter personal discussions is dependent on the personal opinion both for married and unmarried.

Comment: Yes women do control their resources but not in the way it would affect the family adversely.

Findings of gender in technology:

Almost all the subjects from your indigenous community prefers a well known (familiar to them) trainer or someone they know who has experience of using the technology to teach then about the use of such technology.

A subject said that his first computer experience was because his friend told him about it and taught him how to use it, if not he would not have gone there to sit down with small children and learn about it.

This shows that there will be an improved interpersonal interactions between citizen and e-government trainers from your indigenous community then when the trainers are not known to you community.

Therefore, familiarities of e-government trainers will influence inter personal discussion the subjects will have with the trainer/s.

Comment: Naturally true but not when there is substantial reason or need for involvement e-government.

Findings on gender role:

There is a clear role of women and men within your indigenous society. Women mostly take care of the children and cook for the family. Men, on the other hand tend to be responsible for the household expenses. Therefore, most times in comparison to women, men have more time and opportunity to have access to a medium of communication than the women. The role places women at a disadvantage to fully employ social interaction as a means of learning about government products and services.

Comment: True

Findings on Gender inequity:

There is a social stigma attached to a female interacting often with a stranger. This is especially true when the stranger is of the opposite gender. In such cases, your community frowns at women displaying such behaviour.

A subject told the researcher that she can't attend all social gathering especially if it concedes with her family work. She said that she used to head an organisation and due to the commitment involved her husband was complaining and it nearly cost her marriage.

In your community such behaviour was discovered to influence the level of social participation and involvement of women in such activities.

Comment: True A result of biodiversity of nature; that sustains the perfect stability of human nature.

Findings on the social regard for traditional and religious leaders:

To a large extent the traditional or religious leaders are highly respected within your community and most times their words or directives are treated with seriousness. The

decisions of theses authorities are most times seen as unbiased and good for the development of the community.

Most citizens from your community are more likely to participate and get involved in a community based projects been supervised and mange by them than the one brought in and manage by the unknown government workers.

So if the traditional or religious leaders support the use of e-government products and services, it will improve interpersonal discussion among citizens in your community to know about such innovation.

Comment: True

Finding on community decisions:

Majority of the members of your communities would like to manage and support their social network groups rather than letting a stranger manage such networks. For example, the management of local corporative societies or post office support officers within your communities will improve patronage by citizens of your community.

Most citizens within your community will like to work as a community to resolve common issues than working as individuals to resolve it.

The coming together for such discussion will improve interpersonal interaction among the citizens of your area if it involves e-government products and services.

Comment: True

Findings on uncertainty avoidance:

From the research most people from your communities shy away from any government program where they do not understand the purpose, advantage or aim of using the system or participating in the program.

However the research shows that most of them will use it if the support officers are well known and familiar to them.

Comment: True

Findings on result expectancy:

Most people from your community will be so interested in the immediate outcomes or personal result from most programmes and initiatives introduced by the government.

Second from research it is evident that most people from your community will exercise patience and wait for the result of most activities embarked on especially if they are the directives of the Traditional or religious leaders in the community.

Comment: True

One sample of the Ibo findings validation questionnaire.

This case study research finding provided insights into the influence of culture and gender on the diffusion of e-government products and services like the use of computer to apply for international passport through the internet, or application for drivers licence. The section below discusses the different elements and influence on medium of communicating such e-government products.

NB: Please the researcher requires your views and suggestions on the findings of the research. Please you can send you reply to emekaeleos@yahoo.com

Name: Emodi Chidinma

Profession: business management

Average Age: 25

Income: ....

First language: Ibo

Findings on mode of communication:

From the findings of the research interpersonal interactions regarded as social interaction are the most common means and the most used means of information transfer amongst most people from your indigenous community. However few subjects indentified other means like media (Tv, radio and newspaper) and internet based communication channels (world wide web) but provided views there was an emphasis on the stronger influence of families, friends, community and their traditional leaders opinions on their ability to make decisions.

Some gave examples to show how such influences have pressured them against their opinion and embark on some activities they consider unimportant.

A subject told the researcher that he was forced to purchase a personal computer and install internet connectivity to it because his children came back from his neighbours house one day and told him how his neighbour bought computer and installed internet connection to it. The children told him that everybody in the house was happy because of that. In other to bring such happiness his house he followed suit but did not want the children to know that it was because of what they told him. He told the researcher that he owe his advance knowledge about computer to that.

In the above case, it was as a result of interpersonal interaction with his children that triggered his interest in PC.

However it was noted from most of the subjects that they have either heard about some government programmes through other medium like media (TV, radio and newspaper) and internet based communication channels but mostly interpersonal interaction assert more persuasive influence on citizens ability to participate in such government programmes within your community.

Comment:

I think interpersonal interaction can be said to be more persuasive because people value information's that are based on personal testimony a lot, once a person comes forward to say that a particular service or programme that he has tested has been very beneficial to him with good results, people tends to go ahead and use that same service so as to get same benefit since it yielded a good result for the other person.

Because most citizens of indigenous communities are illiterates, they can neither read or write, they don't know how to use the internet and some doesn't have access to T.V s ,radios and newspaper, they rely and believe in information gotten from personal interaction especially the ones that the results are visible, however the few literate ones in as much as they have access to internet T.V s and all, they still believe that T Vs radios and newspapers are being paid to paint and decorate information's so they also prefer the ones that has been tested and confirmed.

Findings on gender divisions of labour:

It was discovered that most times the type of Job one does influences what one knows. As an example, social interaction involves inter personal discussions. From the subjects responses considering the fact that most jobs are believed to be held by men, and the type of job women take up and seem comfortable with within the societies places them at a lower level of knowledge and unlikely to talk about e-government during interpersonal discussions.

Therefore, the gender division of labour will impact the level of interpersonal discussion amongst the female subjects from your indigenous community.

Comment:

In most indigenous community, the olden ways are still the way of life and they still believe that a woman's place is in the kitchen and taking care of the home therefore limiting them to a particular level of job and that places them at a lower level of knowledge acquisition and their interaction with outsiders limited.

It is believed that since a woman's role is to take care of the children, cook and do house chores that it is a man's place to know about information, except the man decides to share the information with the woman, they can never be aware because they believe that the information will be useless to her since her duty is the home front. And most indigenous society frowns at women mixing with other men/strangers to get information. And since women are meant to be seen not heard, anyone that goes out of her way to get information is considered as being too forward and disrespectful and dabbling in matters that doesn't concern her.

However in modern society, most women especially the educated ones have a good job and interacts with both sexes in the course of their jobs and opinions and information's are being shared likewise, giving them access to information's that men know as well.

Therefore when it comes to indigenous community i believe that division of labour affects the level of interpersonal discussion amongst female because men believe that women with highly placed jobs in the community doesn't have time for their family and aren't good

mothers and wives, and that which is their number one duty. So therefore their job should be limited to their families and that makes interactions with outsiders difficult and likewise acquiring information's difficult as well

Findings on gender equal access to interpersonal interactions:

It was generally noted among the subjects that the society frown at the interaction of women with people outside their families. The burden of gender roles, like catering of children by mothers and the society regard for women that freely interact with opposite gender are all part of the social norms and observance within the societies. Such society traits will influences the attitude of women towards social interaction when it is employed as e-government communication means.

Comment:

Most indigenous society frown at women interacting with people outside their families especially when it comes to men, the married men believe that their wives are their personal property and aren't meant to mix freely with other men ,while some families believe that a woman has no business interacting with other people because their role is mainly taking care of her family therefore what else would she be searching for outside .the few ones interact with their fellow women which has equal knowledge as themselves, how else will they gain that extra information aside from the ones they know already. The men will always say such information's and discussions are not meant for a woman because it is useless to them as they will spend probably the rest of their life catering for their families and being in the kitchen.

Whereas in the modern society, the women that are educated has jobs as well as the men and also do their duty that is expected of them at the home front and information's are generally shared amongst the both sexes.

Therefore it will definitely influence the attitudes of women in indigenous community towards social interaction if they are not allowed to interact with the male folks that have access to informations.how else would they get to know about the information's/ discussions.

Findings on gender resource control:

Most women control their resources (control for money earned). Most women in your indigenous community can freely make decision about what they want to spend their money e.g. like purchase of personal computer or enrolment into short courses to improve their knowledge. The women's decision to acquire any type of knowledge through inter personal discussions is dependent on the personal opinion both for married and unmarried.

Comment:

I can agree with that because once one is able to generate ones personal income, one can decide to improve one's knowledge or decide to do something else with the income.

However in most indigenous community, most men especially the married ones believe that any income being earned by their wives are meant to be brought home and be channelled towards the family needs. While the unmarried ones can always use their income as it pleases them, although most will feel it will be a wasteful venture if they don't have the interest so therefore getting them to develop interest is very crucial here.

Findings of gender in technology:

Almost all the subjects from your indigenous community prefers a well known (familiar to them) trainer or someone they know who has experience of using the technology to teach them about the use of such technology.

A subject said that his first computer experience was because his friend told him about it and taught him how to use it, if not he would not have gone there to sit down with small children and learn about it.

This shows that there will be an improved interpersonal interactions between citizen and e-government trainers from your indigenous community then when the trainers are not known to you community.

Therefore, familiarities of e-government trainers will influence inter personal discussion the subjects will have with the trainer/s.

Comment:

I think that being familiar with trainers or teachers will go a long way in this issue because it will help subjects that are being trained to be able to feel free and interact and ask questions where they are confused. That is why I believe it is very important that teachers/trainers be friendly with their pupils so as to enable them talk about what they feel and what they don't understand and what is confusing to them, because when one is not free with their teacher one will not feel free to ask questions and be clear on any confusing aspect thereby leading to loss of interest.

Once a trainer/teacher are familiar with their pupil I believe it goes a long way in helping the pupil be interested in the training and also in helping them to want to be knowledgeable like their trainer and also to be interested in the programme or discussion.

Findings on gender role:

There is a clear role of women and men within your indigenous society. Women mostly take care of the children and cook for the family. Men, on the other hand tend to be responsible for the household expenses. Therefore, most times in comparison to women, men have more time and opportunity to have access to a medium of communication than the women. The role places women at a disadvantage to fully employ social interaction as a means of learning about government products and services.

Comment:

Like I mentioned earlier, because it is believed that women's role in the society is taking care of the family and being in the kitchen, men are most likely to have access to information's because (i)they always get the formal education (ii)they are believed to be the head of the family and women the weaker forms so if there is any information to be dispensed, the men should be the ones to know about it and take necessary action and they also will now consider whether the information will be useful to the women or not, which in most cases they believe women are in no better position to make decisions so what is the need of giving her an information that she will never utilise.

Findings on Gender inequity:

There is a social stigma attached to a female interacting often with a stranger. This is especially true when the stranger is of the opposite gender. In such cases, your community frowns at women displaying such behaviour.

There is social stigma attached to a female interacting with a stranger, especially if the person is a man. Society frowns at women displaying such behaviour.

A subject told the researcher that she can't attend all social gathering especially if it concedes with her family work. She said that she used to head an organisation and due to the commitment involved her husband was complaining and it nearly cost her marriage.

In your community such behaviour was discovered to influence the level of social participation and involvement of women in such activities.

Comment:

Such behaviour influences the level of social participation and involvement of women because most indigenous community sees a woman that interacts freely with men and strangers especially strangers of the opposite sex as a loose woman and one that doesn't know her boundaries, therefore no woman wants to be seen as such it therefore makes them not to participate fully. And also when a woman holds a top political office in the community either as head of a meeting or an organisation that involves full commitment, the men will always complain especially when it coincides with the family work, they always believe that the family should be her first duty, so therefore since it causes problem between husband and wife and since no one wants problem in her marriage they tend to choose their marriage first and shy away from being involved in such programmes.

Findings on the social regard for traditional and religious leaders:

Most citizens view traditional rulers as a ceremonial head and his directives are not treated with severity. Individual opinions matter a lot within the community when compared to the traditional ruler's directives.

Also from the finding the community decisions are respected more by the citizens from your indigenous community and weigh more than the Igwe's directives.

The researcher asked a subject about citizen's obedience to the directives of Igwe or the directives of town union. He told the researcher that Igwe does not feed him and cannot direct him on what to do. Unless such directives are decisions of the town union that in as much as he respect the Igwe he has no such powers to force that unless backed by the town union.

So traditional rulers directives might not influence the opinion of citizens in your community but the decisions of the town union or likes association e,g Age Grades will influence social interaction if they are favourable to it.

Comment:

Most youth believes that the traditional rulers are old and their ways old as well, so they rather go with decisions by their age grades because they believe that since they are of the same age group that they think alike and the ones of the same association believes that they have same mutual interest in an issue. Most people believe that a traditional ruler being a ceremonial head will not attend to issues that affects them directly as the case will be if it was in their age grades or associations, rather they will be more interested in what that will be beneficial to the whole community. But in their age grades and association they will make a better decision that will benefit them directly.

Finding on community decisions:

Majority of the members of your communities would like to manage and support their social network groups rather than letting a stranger manage such networks. For example, the management of local corporative societies or post office support officers within your communities will improve patronage by citizens of your community.

Most citizens within your community will like to work as a community to resolve common issues than working as individuals to resolve it.

The coming together for such discussion will improve interpersonal interaction among the citizens of your area if it involves e-government products and services.

Comment:

Once a community puts one of their own as a leader especially to support their own social network they feel more comfortable because he person is one of them and they believe the persons decisions will benefit them and also they believe that the person will put their interest first, also they will feel a lot freer to express their views than letting a stranger that they don't know very well which also they believe may not really understand them and have their best interest at heart.

Once a community has their own as their leader, it convinces them easily because they trust that person as one of their own than a stranger which they believe can mislead them or not tell them the truth in the whole entirety.

Coming together to work as a community goes a long way to improve interpersonal interaction amongst citizens of a community because members of indigenous community believes so much in working together as one and anyone that is usually not in agreement with a collective decisions or tries to stir troubles are usually seen as being uncooperative and most worse an outcast, and since no one wants to be treated as an outcast everybody wants to be seen as helping to promote peace and cooperation in the community by coming together to work as one. Also working together is a more effective way of resolving issues than individually because according to the saying that goes thus 'two heads are better than one', every citizen will be able to contribute their suggestion and together an agreement will be reached.

Findings on uncertainty avoidance:

From the research most people from your communities shy away from any government program where they do not understand the purpose, advantage or aim of using the system or participating in the program.

However the research shows that most of them will use it if the support officers are well known and familiar to them.

Comment:

Like I mentioned earlier, people prefer one of their own that they can trust and one they believes that understands them. Such person will convince them easily because they believe that that person being one of them will not mislead them once such person is very knowledgeable about what he does and is able to enumerate the advantages and they are made to see how it will help them largely.

Findings on result expectancy:

Most people from your community will be so interested in the immediate outcomes or personal result from most programmes and initiatives introduced by the government.

Second from research it is evident that most people from your community will exercise patience and wait for the result of most activities embarked on especially if they are the directives of the town union or likes associations like Age grade.

Comment:

People like to see the outcome from most programmes especially when it is a new one that they are not so familiar with because no one wants to embark on a wasteful venture so instead of jumping headlong into it they prefer to wait and see the outcome of that activity and once it is positive everybody will jump into it.

People also don't like the risk of experimenting new ideas and programmes so they prefer to sit back and watch for the outcome, know if it is effective before going into it themselves.

One sample of the Hausa findings validation questionnaire.

This case study research finding provided insights into the influence of culture and gender on the diffusion of e-government products and services like the use of computer to apply for international passport through the internet, or application for drivers licence. The section below discusses the different elements and influence on medium of communicating such e-government products.

NB: Please the researcher requires your views and suggestions on the findings of the research. Please you can send your reply to emekaeleos@yahoo.com

Name: Hauwa Abubakar

Profession: Lawyer

Average Age: 35 Years

Income: N600,000 per annum

First language: Hausa

Findings on mode of communication:

From the findings of the research interpersonal interactions regarded as social interaction are the most common means and the most used means of information transfer amongst most people from your indigenous community. However few subjects indentified other means like media (Tv, radio and newspaper) and internet based communication channels (world wide web) but provided views there was an emphasis on the stronger influence of families, friends, community and their traditional leaders opinions on their ability to make decisions.

Some gave examples to show how such influences have pressured them against their opinion and embark on some activities they consider unimportant.

A subject told the researcher that he was forced to purchase a personal computer and install internet connectivity to it because his children came back from his neighbours house one day and told him how his neighbour bought computer and installed internet connection to it. The children told him that everybody in the house was happy because of that. In other to bring such happiness his house he followed suit but did not want the children to know that it was because of what they told him. He told the researcher that he owe his advance knowledge about computer to that.

In the above case, it was as a result of interpersonal interaction with his children that triggered his interest in PC.

However it was noted from most of the subjects that they have either heard about some government programmes through other medium like media (TV, radio and newspaper) and internet based communication channels but mostly interpersonal interaction assert more persuasive influence on citizens ability to participate in such government programmes within your community.

Comment: I quite agree with the concept of inter-personal interactions in this regard, but it does not really bring out fruitful outcome like in the example above due to financial constraint.

Findings on gender divisions of labour:

It was discovered that most times the type of Job one does influences what one knows. As an example, social interaction involves inter personal discussions. From the subjects responses considering the fact that most jobs are believed to be held by men, and the type of job women take up and seem comfortable with within the societies places them at a lower level of knowledge and unlikely to talk about egovernment during interpersonal discussions.

Therefore, the gender division of labour will impact the level of interpersonal discussion amongst the female subjects from your indigenous community.

Comment: With aggressive campaign by women activist, the gap on gender division of labour is breached almost to the grass root level.

Findings on gender equal access to interpersonal interactions:

In your community women are treated with so much respect that the community normally provided special places for women's' education or learning of new programmes introduced in the community.

It was noted from the Hausa subjects that there is gender divide such that women will find it difficult to use public places to access egovernment products and obtain information of interest to them. The greater divide between the status of men and women within the indigenous society, the greater the influence on interpersonal interaction between female and male in your community.

Comment: Once a woman is properly attired, (covered/dressed decently) she can access egovernment products and obtain information even in hausa community.

Findings on gender resource control:

From the research findings it was noted that most married women in the your community always seek the opinion of their husbands before embarking on any major expenses from their income or earnings.

It was also discovered that most decisions to acquire any type of knowledge through inter personal discussions like mothers educating their children on an issue concerning the government activities, cannot easily be controlled or limited by any law or policies within your community.

Comment: It depends on the degree of understanding but a woman's wealth is her own and can be spent the way she want though she can seek advise from her husband if she wants to.

Findings of gender in technology:

In your indigenous community women are normally given the honour of being taught by fellow women to facilitate easy and comfortable learning amongst them.

A subject told the researcher that most times when she wants to use the cyber cafe she does not because of constant presence of men in the cafe.

Therefore, gender in the e-government delivery system will influence the level of inter personal discussions in your community. If a man teaches e-government women might be discouraged to participate in such programmes.

Second, Subjects will prefer to have trainers or user support officers from within their indigenous societies as egovernment delivery officer. It was discovered that they will be more comfortable and trust them more to handle such training or programme in their locality.

A subject said that his first computer experience was because his friend told him about it and taught him how to use it, if not he would not have gone there to sit down with small children and learn about it.

This shows that the familiarity of the people responsible for the delivery of egovernment products and services was considered important by the subject.

Therefore, familiarities of e-government trainers will influence inter personal discussion the subjects will have with the trainer/s.

Comment: As I stated above once a woman is properly/decently dressed, well covered from head to toe she can go on with normal business amidst men. However, I share your view on the above.

Findings on gender role:

There is a clear role of women and men within your indigenous society. Women mostly take care of the children and cook for the family. Men, on the other hand tend to be responsible for the household expenses. Therefore, most times in comparison to women, men have more time and opportunity to have access to a medium of communication than the women. The role places women at a disadvantage to fully employ social interaction as a means of learning about government products and services.

Comment: Yes this has been the practice but both literate and illiterate women are now involved in government activities both locally and internationally.

Findings on Gender inequity:

Due to religious and societal observances women and men do not publicly sit and interact together and this is particularly true when a man is a stranger. This extends to the places of worship where women and men have separate places of worships.

Secondly there is a social stigma attached to a female interacting often with a stranger. This is especially true when the stranger is of the opposite gender. In such cases, your community frowns at women displaying such behaviour.

There is social stigma attached to a female interacting with a stranger, especially if the person is a man. Society frowns at women displaying such behaviour.

A subject told the researcher that she can't attend all social gathering especially if it concedes with her family work. She said that she used to head an organisation and due to the commitment involved her husband was complaining and it nearly cost her marriage.

In your community such behaviour was discovered to influence the level of social participation and involvement of women in such activities.

Comment: It is quite true that a woman is to be in charge of the home front doing all the domestic work or supervising and that is why she can work in an environment that can give her enough time to attend to her household work which can actually affect her role as a mother and a wife.

Findings on the social regard for traditional and religious leaders:

To a large extent the traditional or religious leaders are highly respected within your community and most times their words or directives are treated with seriousness. The decisions of theses authorities are most times seen as unbiased and good for the development of the community.

Most citizens from your community are more likely to participate and get involved in a community based projects been supervised and mange by them than the one brought in and manage by the unknown government workers.

So if the traditional or religious leaders support the use of egovernment products and services, it will improve interpersonal discussion among citizens in your community to know about such innovation.

Comment: This finding is quite true.

Finding on community decisions:

Majority of the members of your communities would like to manage and support their social network groups rather than letting a stranger manage such networks. For example, the management of local corporative societies or post office support officers within your communities will improve patronage by citizens of your community.

Most citizens within your community will like to work as a community to resolve common issues than working as individuals to resolve it.

The coming together for such discussion will improve interpersonal interaction among the citizens of your area if it involves egovernment products and services.

Comment: I agree.

Findings on uncertainty avoidance:

From the research most people from your communities shy away from any government program where they do not understand the purpose, advantage or aim of using the system or participating in the program.

However the research shows that most of them will use it if the support officers are well known and familiar to them.

Comment: In the communities they are ever ready to embrace government services so letting them know the purpose and importance is key.

Findings on result expectancy:

Most people from your community will not be so interested in the immediate outcomes or personal result from most programmes and initiatives introduced by the government.

Second from research it is evident that most people from your community will exercise patience and wait for the result of most activities embarked on especially if they are the directives of the Traditional or religious leaders in the community.

Comment: Quite true because of the respect they have for the traditional and religious leaders.

Appendix 9   Further Examples of Explanation Building

To show further analysis of data collected an example is shown below. Below is the analysis for the test of Power Distance influence within the Yoruba indigenous society. For instance from the below discussion the reader can deduce what type of influence the traditional authority could have on the perception of the subjects by applying the rule of explanation building as shown in chapter 5. An excerpt is taken from appendix 7, the Yoruba indigenous table. Question 21-24 was developed to test for this phenomenon during the interviews.

The researcher: Who is the most respected traditional authority?

The subject: Oba.

The researcher: Does the Oba discus community issues with member of the community.

The subject: Eh!! (Made a sound before answering the question, such exclamation is used within the community to describe something that looks impossible to perform.) The subject said that the Oba only consult his cabinets members.

The researcher: if he gives a directive with or without the cabinets will they people obey the directives.

The subject: Yes, but must be a good decision.

The research: Will the directive of the Oba about a government program be obeyed, even if it is for or against it.

The subject: Yes but it must be a good directives.

The researcher: Has the Oba supported any government program and did the Oba support change the way people participated?

The subject: Yes, the last time Oba did a thing like that was during voter's registration period. It witnessed a massive turn out because he ordered the closure of shops and market for people to take part in the registration.

The researcher: What of if he gives bad directives?

The subjects: (Laughed) He asked why would Oba give a bad directive against his people? He reminded the researcher that he is the Oba and will always want the best for his people.

From the discussion if I apply the principle of explanation building. 'How' and 'why'

How does Oba relate with his community on issues involving the community on community matters = no consultation

How does the subject view the directive of the Oba? = that he cannot give a bad directives.

Why does the subject view the directives as revered? = Must be obeyed.

No consultations = communication gap.

He cannot give a bad directive = trust in Oba.

His directive must be obeyed= respect for the Oba.

Form the following analysis, it shows that the Oba does not consult the citizens but the citizen's trust and expect him to take the right decision. Considering the elements of Power Distance it can be deduced that Power distance exist among the traditional leaders of Yoruba and their subordinates.

2.   Another example from the Ibo indigenous society: Test for the Uncertainty Avoidance. (The researcher will identify any government transaction that had been done by the subject; or any personal needs that the subject requires the government to provide services for). In this instance the researcher uses provisions of online Land registration.

The Excerpt:

The researcher: if the government provide means of applying for land certificates using computer; will you like to use that means to apply for it?

The subject: Yes if they will even treat the application.

The researcher: Do you mean that the government workers will not attend to the application even if you are able to apply for your land certificates using the computer?

The subject: Yes, you wouldn't want to know what will happen to it if they even have that service and you use it to make such application.(in this sentence the subject was sarcastic about the way the government workers will treat online land application for printing of land certificates).

The researcher: will you want ot know what will happen to the application after you have applied for it.

The subject: Yes. Because they will not even touch it and it might not even get to them due to one type of failure or the other. (Means technical or human failure)

The researcher: Do you think you have to know about all these processes whether technical or human process involve before you make the application?

The subject: Yes. I have to. In this country if you are not sharp people including the government can do things that will make you regret your life.

The researcher: What if those people you referred to are using it.

The subjects: Even at that; I won't use it unless I know the people at the office or someone very close to me have used it.

The researcher: What if the Igwe (the traditional ruler) or the community decides that all the land registration within their community must be done through the use of computer.

The researcher: Who is Igwe to take that type of decision, nobody will listen to the Igwe unless you want to (the subject shows disrespect for the traditional ruler) . But if the community decides, may be they we will operate it ourselves and that way we know our problems and how to handle it (Confidence in the community decisions).

Form the discussion; if you apply the principle of explanation building with reference to the propositional construct of Uncertainty Avoidance. Then using 'how 'and 'why' questions to the above discussion.

How does the subject understands the process of the application= that it will not work due to one type of failure or the other. (Apprehensiveness)

Why did the subject hold such belief= does not trust the providers. (Doubt)

Why will the subject change the initial belief = due to intervention of the community or someone the subjects knows (familiarity of the personnel and community loyalty).

The subject shows apprehension to the process (Uncertainty Avoidance) but will change such feeling when familiar personnel get involved with the process of online land registrations within their community(improved social interaction and trust of personnel). In this case, improved social interaction which involves the introduction of the familiar personnel will influence the subject's attitude of Uncertainty Avoidance displayed by the subject s

Appendix 10 Themes used for data conceptualisation and data reduction

Except of themes used in the data analysis

First level themes	Second level themes	Third level themes	Categories
Egovernment awareness channels	People Technology type	Word of mouth Subjective influences Reading of print media Listing and observation of radio and TV Surfing the web	Social interaction Media channels Web interactive channels
Choices of jobs and jobs available to man or woman	Types of job women and men like. Type of jobs available What jobs women think they can do and what jobs they cannot do.	Gender job restrictions. Not being disposed to do a particular job. Employment data	Gender division of labour
Access to means of information dissemination. Access to use such means	Human imposed restriction. Self imposed restrictions Job imposed restriction	Human insulations. Time schedules. Individual Choices. Society rules and regulations	Equal gender access
Control of personal income. Control of information resources (like use of Radio or access to internet)	Decisions to spend such income. Decisions to use information dissemination medium	Personal choice Other people's choice	Resource control
Men and women participation in trainings and discussions involving government programmes.	Participation restriction due to gender. Restriction due to stranger's involvement.	Gender sensitivity. Familiarity of delivery personnel.	Gender in technology
Type of duties that men and women do	Personal assumed choice of duties and	Role and duties due to gender type.	Gender role

at home and within their society.	roles. Natural assigned roles. Roles expected to be performed. Being disposed to such duties	Society duty expectation as a result of gender.	
Laws both written and unwritten favouring or discriminating against any gender	Written laws. Socially imposed restrictions. Personal restriction on ability to perform or not to perform a job.	Physiological believe. Laws. Society rules	Gender inequity
Traditional authority's involvement of their subordinates in decision involving their communities.	Level of relationships of traditional authorities to decisions. Expected expectations of such authorities,	Acceptance to traditional authority directives. No Consultation, Loyalty to directives	High power distance
Personal involvement in the decision involving the community.	Level of personal involvement in decision involving the communities.	Acceptance to community decisions.	Collectivism
Views about egovernment and other government programmes.	Level of Comfort with a new technology. Like. Individual tolerance to such new technology.	Show anxiety to unclear variables.	uncertainty avoidance
Individual ability to support government programmes. Their individual ability to explore egovernment advantages over other considerations	Individual immediate expectations of benefits. Individual In ability to exercise patience to try our government process.	Fast result expectancy	short term orientation