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Diffusion of E-Government in Nigeria:

A Qualitative study of Culture and Gender

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Research-in-Progress Paper

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Abstract

E-government failure is prevalent in developing countries, and of the varying reasons for this, adoption of online products and services by citizens is one strong factor. Using this reasoning, this research-in-progress paper explains how a qualitative approach involving interviews and observations as well as referring to archival documents was used to investigate the aim: *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. This research will also aim to examine gender influences within the subcultures when considering an e-Government awareness channel in Nigeria*. The conceptual analysis is framed by Rogers' (2003) diffusion theory, Hofstede's and Hofstede's (2005) cultural theory and Morgan et al's (2004) gender analysis framework. This research offers a rich and deep understanding of the impact of culture and gender upon the diffusion of e-government within Nigeria's indigenous ethnic groups. Further, this research applies aspects of diffusion, culture and gender in the context of a developing country. For industry, this research offers an understanding of the various cultural and gender aspects that can affect the diffusion of an innovation within ethnic groups of Nigeria. For policymakers, this research offers a snapshot of some contexts in Nigeria and offers insights unique to e-government.

Keywords: E-Government, Diffusion, Gender, Culture, Qualitative Research, Nigeria

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1 Introduction

Presently, ICTs[1], such as Broadband are viewed as critical tools for the future prosperity and growth of economies and there is a drive from both public and private sectors to have ICTs adopted and used in daily lives.

To ensure that all citizens adopt and use the provided online products and services, many governments have formed and implemented strategies and undertaken programmes to encourage internet awareness and usage amongst citizens. This relationship between government and citizens is also known as Government to citizens (G2C) e-government, which is being researched in this study.

Not all e-government projects and programmes across the globe are successful at encouraging adoption and use. This is particularly evident in the instance of developing countries where a United Nations (UN) global index for e-Government development report identified many developing countries e-government initiatives ranking below the benchmark success measure of 1.62. Also learnt is that 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). 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, 1974), 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).

Academic literature has also confirmed that an estimated 15% of e-government projects in developing and transitional countries are successful with the remaining 85% being either total failures or considered as partial failures (Heeks, 2002). This has been attributed partly to theories and policies designed in developed countries being employed in developing countries, or lessons from countries with policies and strategies completely diverse to those of developed countries being applied to form an understanding; thereby leading to diverse results (Stahl and Elbeltagi, 2004).

Of the continents suffering substantial rates of e-Government failure, Africa rates amongst the highest (Heeks, 2003), which is astounding despite the novel attempts made to provide internet connections. In East Africa broadband connectivity was made possible by the first undersea cable that brought high-speed internet access to Kenya in 2009 (Fildes, 2010). West Africa's Nigeria and Ghana have also acquired a 4,350 mile fiber optic submarine cable (Abell, 2010). Despite such efforts and the potential the continent proffers, Africa still ranks amongst the highest of failing e-government continents. Of the 10 leading global e-Government countries none emerged from Africa, where many developing countries are located. The only African country to be listed among the first twenty countries of the world and to achieve a significant level of e-Government success is South Africa (Bates et al, 2007; Ifinedo, 2005). This is also the case when e-government academic literature reviews are conducted where South Africa lists amongst the foremost leaders of e-government in Africa (Maumbe et al, 2007; Mutula and Mostert, 2010; Kaisara and Pather, 2011). With e-government application areas impacting all aspects of society, it becomes imperative for researchers and organisations to understand drivers and inhibitors of e-government distribution.

[1] UNDP Evaluation Office (2001) has classified ICTs into 2 categories: Old and New forms. Examples of new ICTs include, Computers, Broadband (the offering of a faster internet service), Mobile Phones and personal digital assistants, such as, blackberries and mobile telephones. Old forms are: Television, Radio and Fixed Line

Within Africa an area that is vastly pertinent to the world due to its major exports of gold, uranium, chrome, vanadium, antimony, coltan, bauxite, iron ore, copper and manganese (Holmberg, 2008) is Sub-Saharan Africa (SSA). SSA is an area of the African continent that lies south of the Sahara (UN, ESA, 2010). An influential country in SSA is Nigeria, which is the largest populous country of the area and the 5th largest oil producer of the world (Engdahl, 2012).

Despite the immense wealth and innovations, Nigeria's e-government status is still low. Nigeria's e-government status is determined by its e-Government development index of 1.02, an index measure below the UN's benchmark measure of 1.62 (Ifinedo, 2005; UN-ASPA, 2002). This can be verified by Nigeria's growth of Internet literacy, an important factor for e-government application being "very slow and the coverage, small" (Amalu, 2011). Internet penetration rates are very slow in Nigeria too with it being listed within the 120 low internet penetration countries. From recent statistics, Nigeria has 10,000,000 internet users, 500 broadband subscribers, 6.8 per cent internet penetration, and $2,300 GDP (Amalu, 2011).

The emergence of e-Government in Nigeria can be traced to the advent of democracy in 1999. The first real activity in this regard was the development of government websites. These efforts were uncoordinated and only a few agencies with resources could establish an online presence although government continues to seek policies and strategies that will accelerate the deployment of the necessary infrastructure. Challenges to Nigeria's e-Government efforts are well documented (Ifinedo, 2005), of which the socio-economic inadequacies that exist in countries belonging to the Sub-Sahara region are highlighted. Other identified challenges include, poor organizational skills, inadequate infrastructural support and poor or limited human capital resources (ibid). Local e-Government initiatives have also been examined, but from a macro level where identification of policies and initiatives has occurred and the impacts measured using surveys (Ogbomo, 2009).

With e-government existence being reliant upon a telecommunications infrastructure and despite supply provisions in Africa, it is still not being used. This can be attributed to economic factors such as, pricing and costs incurred by consumers and awareness (Fildes, 2010) and viewed as factors accounting for the slow diffusion of e-Government and ICT projects (Bagchi et al, 2007). Additional factors leading to e-government failure can be attributed to social factors such as, gender inequality and cultural issues (ibid; Schaap, 2009). "*Studies show that especially in Africa, the younger-educated classes and men, use the internet more frequently, so that the result could be a one-sided concentration leading to the further systematic exclusion from online services of women and of the lower social classes*" (Taken from Schaap, 2009, page 122; Nakafeero, 2005).

When researching culture, gender has also been viewed as important for understanding behaviour and thinking differences that account for underlying gender differences (Hofstede, 1980). As Gefen and Straub (1997) posit "both national/ethnic and gender differences constitute the socio-cultural factors that influence perception and behaviour" (Gefen and Straub, 1997, page 6).

A review of culture and gender factors in e-government literature revealed negligible research being conducted on these topics. In developing countries context even less. Within e-government, the role of culture was examined in e-government programmes established within vicinities in UK and USA, two developed countries. This was achieved using Hofstede and Hofstede (2005) theory (Carter and Weerakkody, 2008), with minimal identification of the cultural factors surrounding Hofstede and Hofstede (2005) theory.

Sub-Sahara Africa and the role of gender has been researched by measuring the role of gender by adopting a diverse approach in the form of considering the role of 'time poverty' (Bardasi and Wardon, 2006). Time poverty was identified as a constraint to development in SSA due to SSA women working especially long hours due in part, to a lack of access to basic infrastructure services such as water and electricity, but also due to the rising demands from the "care economy." In IS Trauth and Quesenberry (2006) considered the gender issue by questioning the role of women as an underserved community in IT. Their role as producers of IT has been researched by examining common discourses that women have received with respect to domestic responsibilities, career opportunities and IT as a masculine domain.

As e-government is paving the future and will impact countries around the globe, its implementation and success are matters of importance. For this, as identified, culture and gender could be two important factors of consideration. What has also been learnt is that Africa is a continent offering immense potential, yet is virtually forgotten. From our literature review of e-government research in Africa it was learnt that there is minimal research undertaken on

the role of gender and culture in e-government diffusion and treated very generally, which limits their exploratory and explanatory capabilities (Miles and Huberman, 1994; Yin, 2003).

Therefore, in this research we aim: *To explore and understand the roles of culture and gender on e-government diffusion in Nigeria.* By fulfilling the aim we foresee the following contributions:

Africa is a large and important continent of the world economy and e-government is as important for economic growth to Nigeria as it is to other countries; therefore researchers have argued for a rich and deep understanding of e-Government in Africa (Heeks, 2002). As such an envisaged contribution of this paper for academia is rich cultural and gender insights in understanding the diffusion of e-Government in this instance, Nigeria. By doing so, research findings focused upon e-government in a citizen centric manner will be proffered. This way we can enhance the limited understanding of the roles of culture and gender using knowledge from literature in other areas of the social sciences. This way, we can provide definitions of culture and gender as well as e-government diffusion specific to Nigeria, which can subsequently be applied in future research of e-government diffusion in Nigeria and other countries that consist of indigenous societies.

To date, minimal research focused upon citizen-centric e-Government efforts within Nigeria, and yet demand from citizens for e-government can drive the supply of e-government (Reddick, 2005). By obtaining a better understanding of pertinent diffusion, gender and cultural issues in Nigeria an improvement in e-government citizen centric efforts can occur.

Further, within e-Government research, policies and empirical analysis studies are evident, but this research differs from others as it employs parts of Rogers' (2003) theory, Hofstede's and Hofstede's (2005) cultural theory and the Association for Progressive Communications' (APC) Gender Evaluation Methodology (GEM) model as presented by Morgan et al (2004) that is novel for Nigeria's e-Government efforts research. For industry, this paper offers a better understanding of Nigeria's composition and possible challenges that they may face if considering business opportunities in Nigeria. For policymakers it provides an understanding of issues and strategies in the provision of e-Government.

To familiarise readers with the background to this research, a review of the literature on e-government diffusion, gender and culture is provided. This is followed by a description of the research method pursued in this research. A description of the findings and analysis in terms of the theoretical background is the offered. A discussion, followed by a concluding section draws the paper to a close.

2 Theoretical Frameworks

2.1 Diffusion of Innovations

Diffusion as defined as "the process by which an innovation is communicated through certain channels over time among the members of a social system" (Rogers, 2003: 5). To further examine this process, four vital elements are required: innovation, communication channels, time and a social system (Rogers, 2003). To ensure that the innovation is disseminated, a channel of communication within a time frame in a particular environment is essential.

Diffusion of e-government research is mainly investigated in terms of ICTs. Such research is largely empirical, that mainly comprises statistical analysis of the adoption and diffusion of ICTs using frameworks such as Technology Acceptance Model, Theory of Reasoned Action, Motivational Model, Theory of Planned Behaviour, Innovation Diffusion Theory, and Social Cognitive Theory, Unified Theory of Acceptance and Use of Technology (Venkatesh et al, 2003). In Nigeria, e-government research based more on secondary data has been undertaken to identify the challenges and impediments that e-government poses for Nigeria (Ifinedo, 2006).

When considering a rich and deep understanding of the diffusion of e-government, culture and gender are considered to be two important factors of consideration (Trauth and Quesenbury, 2006; Heeks and Bailur, 2006). Roger's theoretical understanding of the diffusion of innovations when applied to this research suggests the online products and services being used to offer e-Government in Nigeria are the innovations (As UNDP suggested, the new forms of ICTs, computers, internet, mobile phones). In terms of online products and services the Internet, for example will serve as communication channel. The social systems are the indigenous ethnic groups in Nigeria and the time element is the time taken for an individual to adopt the innovation.

Innovation is another term generally associated with diffusion research. Innovation is defined "as an idea, practice or object that is perceived as new by an individual or other unit of adoption" (Rogers, 2003: 12). The novelty shapes the reaction of an individual towards it. When considering diffusion, it has also been found that it may not be important to determine how long a product or service is provided for; but the process it will take to develop a favourable or unfavourable attitude towards it. That is, the decision to adopt or not adopt (Rogers, 2003). The time lag at which this decision is made is known as ***innovation decision process***. According to Rogers (2003) time and process must involve knowledge, persuasion or a decision to adopt. Innovation decision process is defined "as the process" of seeking information and information processing activity in which an individual is motivated to reduced uncertainty about the advantages and disadvantages of the innovation (Rogers, 2003). Therefore, for the purposes of this research, **innovation decision process** is referred to, in the context of e-Government as the "***e-Government decision process***." This is due to the innovation being viewed as e-Government.

Based on Roger's (2003) definition of diffusion cited above, the channels of communication that citizens use to obtain information concerning government related information is termed diffusion of e-Government in Nigeria. For example, using computers to obtain information regarding government related activities is the diffusion of e-government.

Communication channels refer to a process by which a message is communicated from one individual to another. Diffusion is a particular type of communication in which there are message exchanges concerning new ideas (Rogers 2003). In this case, the communication channels will examine the means by which an individual exchanges messages about e-Government products and services with another. According to Rogers (2003) the nature of the information exchange relationship in individuals determines the condition under which an individual exchanges or does not exchange information and the impacts of such transfers. Therefore, the nature of exchange of information regarding e-Government products and services in Nigeria will be between individuals knowledgeable or experienced in using e-Government and individuals who have no prior knowledge or experience of e-Government product and services. Nigerian communication channels are generally mass media channels (television, radio, newspapers- UNDPs 'old forms of ICTs'), interpersonal channels (social gatherings, one to one informal meetings) and recently, the newer forms of ICTs- interactive communication channels (internet). For the purpose of this paper channels for e-Government information transfer are referred to as **e-Government awareness channel**. Since culture and gender are factors of importance in this research, this research will ascertain how culture and gender affect e-Government awareness channels.

2.1.2 E-Government, Diffusion and Developing Countries

E-government diffusion is slow within developing countries due to the strategy of implementation (Heeks, 2002; Akther, 2007). This is attributed to 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 technologies emerge with diverse problems that normally vary with communities and environments. 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 use their technology and educational ability to create an e-government structure, while e-government development has been slow in other countries with the same resources due to citizens not trusting 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 (Kolsaker and Kelley, 2008). 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. In IS e-government diffusion research is mainly investigated in terms of ICTs. Such research is largely empirical, that mainly comprises statistical analysis of the adoption and diffusion of ICTs using frameworks such as TAM, Theory of Reasoned Action (TRA), Motivational Model, Theory of Planned Behaviour (TPB), Diffusion of Innovations (DoI) Theory, and Social Cognitive Theory, Unified Theory of Acceptance and Use of Technology (Venkatesh et al, 2003). To date, e-government research based on Nigeria is largely empirical and applies secondary data to identify the challenges and impediments that e-government and policies required for Nigeria's e-government efforts pose for Nigeria (Ifinedo, 2006).

2.2 E-Government: Culture and Gender

In e-Government research, gender and culture have been studied in many developing countries (Harrison and Huntington, 2001; Kasekende, 2006; Evans and Yen, 2005; Stedham and Yamamura, 2004; Hafkin and Taggart, 2001; Choudrie and Lee 2004). However, minimal research has been undertaken to highlight the importance of gender and culture in the African region (Hassan and Dista, 1999; Kasekende, 2006).

2.2.1 Information Systems (IS): A Gender perspective

In daily life the term "gender" is usually synonymously associated with the term "sex". Gender is defined as "a concept that refers to the social and cultural constructs that each society assigns to behaviours, characteristics and values attributed to men and women, reinforced by symbols, laws and regulations, institutions and perceptions" (APC WNSP, 2005). The concept of gender is not synonymous with "sex": it does not simply refer to the biological traits men and women are born with. Rather, gender is used to understand how the concepts of femininity and masculinity are constructed (APC WNSP, 2005; Gillard et al., 2008).

Gender analysis "asserts that power relations in class, race, ethnicity, age and geographic location interact with gender, producing complex and hidden inequalities that affect social change" (APC WNSP, 2005). Much diverse work has been done on gender and technology in IS. IS researchers typically examined the ways in which sex-based differences in IT use shape and are shaped by numerous practices such as the conceptualization and use of IT (Gefen and Straub 1997; Star 1995; Rowbotham, 1995), the design of IT artefacts (MacKenzie and Wajcman 1999; Woodfield 2002), and the persistence of students in science, math, engineering and technology related disciplines (Camp 1997; McGrath Cohoon, 2001). Gender-based disparities also occur in the mundane and the overt ways in which power and performance are enacted in organizational settings (Adam et al. 1994; Eriksson, Kitchenham, and Tijdens, 1991; Von Hellens, Nielsen, and Trauth 2001), in societal and cultural influences on IT careers choices (Nielsen et al. 1999; Trauth 2002) and in the continued under representation of women in the IT workforce (Freeman and Aspray 1999).

Earlier research in IS provided several insights into relationships between gender and IT, but the results are highly fragmented, patchy in their coverage, and inconsistent in their depth of theorizing on gender in order to provide a basis for explanation and prediction. Trauth et al (2005) found gender and IT being "under theorized in three ways. First, gender is seldom considered as an independent factor in socio-technical studies of IS in context" (Wajcman 2001). Rather than viewing gender as a socially constructed category as suggested in diffusion studies (Fichman, 1992), researchers seek to understand gender by fixating on differences between biological sexes. Second, much of the published research focuses on data analysis rather than theoretical implications that relate to the existing body of gender, and gender and IT literature (Adam, Howcroft, and Richardson 2001). Third, there exists an insufficient understanding of the underlying causes of sex-based under-representation in the IT profession that would inform educational policies and workplace human resource strategies to attract and retain more women." (Tapia, Kvasny, and Trauth 2004).

We have attempted to extend the gender issue with the position adopted in this paper being that of Gillard et al (2008). This *"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 marginalized"* (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 in national and international governance, business practices and concerns, and public and private employment configurations.

We also take the position that as with every global country there are diverse genders; therefore examining the gender perspective is important for understanding e-government development in Nigeria. ICT research can be examined from diverse gender perspectives depending on the focus of the investigation. Harding and O'Barr (1987) identified 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 knower (Webb, 2000). Standpoint theory views knowing as socially situated and rejects the goal of objectivity. It argues that some standpoints are better than others in revealing knowledge about certain issues

(Harding, 1998). However 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; therefore the uniqueness of the individual stories they tell about the knowledge they have (Harding and O'Barr, 1987). Further, these three main strands of a feminist approach to research are further complicated by the growing complexities of emergent strands relating to the writings 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 the gender dimensions of ICTs obscures the multilayered and versatile nature of gendered experience. A multifaceted feminist approach to a gender analysis of ICTs 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 multilayered nature of gendered experiences, any effective approach, they argue, must engage with the variety of women's roles in society, their practical and strategic needs, and the factors that direct the creation, utilization and distribution of and ICT 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).

To overcome the gap, Morgan et al (2004) proposed and applied the Association for Progressive Communications' (APC) Gender Evaluation Methodology (GEM) model. Since Nigerian communities are diverse and the intention of this research was to capture experiences, we adapted the APC's conceptual framework to the study of the relationship between gender and E-government diffusion in Nigeria. However, further refinement of this framework has been undertaken as this research is focused upon citizens and not policymakers; therefore, only certain gender practical needs are considered in this research. These are: Gender roles (GR), gender access to technology (GAT), gender division of labour (GDL) and gender inequities (GI).

2.3 E-Government and Culture

E-Government research has been criticised for minimal research 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 with it being 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 (Trompenaars and Hampden-Turner, 2005). Culture's theoretical foundation has been dominated by the works of Hofstede (1980, 1983, 1991); Schwartz (1994), Trompenaars and Hampden-Turner, 1997) and Hall and Hall (1979, 1990). It is also acknowledged that although there is immense 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 ICTs is pertinent for its provision. When considering ICTs and culture, there are three emerging categories: cultural values towards technology, culture in technology and, technology culture (Hasan and Dista, 1999). This paper addresses the area of *Cultural Values towards 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 are shaped when interacting with Information Technology (IT).

2.3.1 Culture and IS

IS research is dominated by Hofstede's (2003) model for cultural analysis based on national boundaries. Hofstede (1991), Hofstede and Hofstede (2005) analysed national culture along five dimensions: Power Distance (PD), Individualism versus Collectivism (IND vs CO), Masculinity versus Femininity (MAS vs FEM), Uncertainty Avoidance (UA), Long versus Short-term Orientation (LTO vs STO). In e-government research Hofstede's theory was used to investigate e-government and Maori culture where the emphasis was not on the technology, but the e-government readiness of various countries around the globe (Kovacic, 2005). Generally Hofstede's theory also led to the identification of national cultures (Sornes et al, 2004), which is a strategy similar to the one being pursued by this research.

Cultural dimensions have also been studied in the context of a transitional country, Kazakstan where secondary resources were employed, subsequently leading to the identification of challenges such as: a diverse political environment, corruption, digital divide, lack of customer focus, monitoring and evaluation and technological problems (Janenova, 2010). In developed countries, many e-government papers emphasise the adoption, usage and diffusion issues using empirical studies involving survey instruments (Shareef et al, 2009; Carter and Weerakkody, 2008). Whilst such studies are through and informative, what is amiss in such studies is the diversification of cultures and a rich and deep understanding of issues.

In terms of Hofstede (1991) and Hofstede and Hofstede (2005) five dimensions, Nigeria was categorised as a collectivist society where filial piety (respect for elders, financial support of parents), chastity in women and patriotism ranked highly (Hofstede and Hofstede, 2005). In other words, in collectivist societies individuals generally behave according to norms of their in-groups. In short, collectivists tend to do what they are expected to do whereas individualists tend to do what they enjoy doing (Triandis, 1995). Individualism had a low score and Power Distance Index scored high. (ibid). In a country with a high power distance score, there is a reliance of subordinates on superiors which can include superiors at work, at home or in the community.

Nigeria's MA and UA indices were mediocre (ibid) suggesting that Nigerians will take risks and innovate but also value and accept some structure in society. It also suggests that Nigerian society cherish both masculine and feminine values. Nigeria also scored very low LTO scores (ibid). In such societies, there is persistence with relationships ordered by status; an observation of the order, a sense of shame, thriftiness, respect for tradition and finally, a reciprocation of greetings, favours and gifts (ibid). LTO versus STO is a dimension not easily recognised by Western minds. Defined as: Standing for the fostering of virtues oriented towards future rewards; particularly, perseverance, truth and thrift. Its opposite pole STO stands for the fostering of *virtues* related to the past and the present, in particular, respect for tradition, and preservation of face and fulfilling social obligations (Hofstede, 2001, p.359).

Hofstede and Hofstede's (2005) dimensions are useful for this research due to their scope of coverage. However, apart from the fact that Hofstede study is now quite dated, critics have questioned his methodology (e.g. McSweeney, 2002) 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, within one nation there can be multiple cultures. 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'.

Returning to culture's theories in the context of this research, there is a tendency to classify all the indigenous ethnic groups in Nigeria in terms of each of these dimensions; however, when examined closely, the contrary may be true. Hofstede found substantial diversity within citizens in a country and similarities between people from different countries (Hofstede, 1980).

Despite criticism of Hofstede it is still most widely used in cultural studies and cited widely within the IS domain (Hasan and Dista, 1999). For this reason, this research conceptualises cultural influences in Nigeria using only certain dimensions of Hofstede and Hofstede (2005). These are: PD, CO, UA and Time orientations. Masculinity and femininity were not considered as a result of gender being studied as a research phenomenon in this study.

3 Research Method

A case study, snapshot, qualitative research approach was applied to this explanatory study that was undertaken in December 2010 for 3 months. The case study of this research is Nigeria, which is further researched using three embedded case studies, which are in the form of indigenous (ethnic groups) tribes (Yoruba, Ibo and Hausa). Selection occurred on the basis of contacts, logistics allowing accessibility and finally, the political situation that determined accessibility.

As this research aims to provide a deeper understanding of the relationship between culture and gender in relation to understandings and perceptions of e-Government provision in Nigeria, a qualitative approach was considered suitable for the investigation of the complex relationship (Rubin and Rubin, 1995) and exploration leading of explanations of participants' understandings and interpretations within the given context was pursued (Stroh, 2000).

Within each embedded case study the participants were categorised into three. According to Rogers (2003) information exchange in most cases happens between the same classifications of people. Therefore, the classification of subjects was conducted in consideration of e-Government awareness. Three categories were also formed to conduct the research, which were: Category 1: those who have been exposed to the use of e-Government; Category 2: those who have not used e-Government, but are aware of it; Category 3: those who lack knowledge about e-Government.

3.1 Sample population

Due to minimal local literature and lack of statistical datasets for population groups in developing countries, an appropriate sample size could not be calculated. Further, owing to time consuming sampling techniques that are more applicable to quantitative research and this being an explanatory study, a non-probability, purposive convenience based sample method resulted in 153 participants. Each of the indigenous ethnic societies was treated as an embedded case study that led to data being analysed separately, but compared together. Therefore, the replies of the subjects were analysed and reported separately and a cross case analysis was drawn to form the final results. The collection process began with approaching friends and family for initial participants, which led to the exclusion of friends and family from this research. This was to prevent interviewer bias or any possible influence of the subject. The Ibo and Yoruba societies are larger in population numbers; hence providing more choice when selecting participants and led to the self-selection approach. Further, once trust was established with some participants, a snowball sampling approach was used to obtain more participants. However, this was not the case with the Hausa society. For this region the research team had to make several brief visits and spend time within the society to build an element of trust. This was also achieved by seeking the assistance of an academic based in the Hausa region. For this purpose, an ethical protocol involving informed consent and protection of individuals and approved by the research team's academic institution was pursued. Once trust was established, a random selection of participants using the snowball sampling approach could occur. Such challenges inhibited the numbers of participants that is also evident in Tables 2 and 3.

The interview protocol pursued in this research encompassed interviewing householders. The researcher contacted locals within the village using personal networks and arranged the visits. The contacted participants were viewed to be representative of the population of the region, which explains reasons for various age ranges and occupations. Then, visits were made to households in the three regions and interviews were conducted after an initial welcome by householders. The researcher explained the purpose of the research, obtained consent to conduct and record the interviews. This norm was prevalent within the Yoruba and Ibo. Among the Hausa, this posed to be more difficult where some female participants did not allow the researcher entry into their houses due to religious observances towards interacting with a male visitor. The established contact with a Hausa region academic assisted in overcoming the aforementioned barrier. In other cases the researcher asked individuals at bus stops or petty traders to participate in the research by inviting them to some refreshments and speaking to them at such locations. Whilst the interviewing was continuing the other researcher would make notes and maintain a more distant, objective view, which is something Eisenhardt (1989) also suggested.

The majority of the participants were from the second largest Nigerian society, Ibo. In this society, the majority of participants belonged to a younger age group that was willing to assist this research for curiosity reasons. The survey

questionnaire consisted of 2 sections with the first seeking demographics details and the second consisting of 34 questions associated with the theoretical concepts of this research. To ensure that responses were unbiased and non-leading open ended questions were used. To frame the questions, queries were outlined linked to participants' daily activities and individuals participants were familiar with. This measure was taken to ensure that all participants could provide replies, rather than restricting them to certain educational, or occupational categories.

3.2 Demographic Details

In the case study, 76 female and 77 males were interviewed thereby leading to an overall total of 153 subjects. Table 1 below displays the gender combination of the subjects in the diverse indigenous societies.

Table 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 2.

Table 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.

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 were also attained that are provided below. 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 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.

From table 2 it can be learnt that the age range of 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, but generally, there is not considerable variation amongst the subjects.

3.3 Data Collection and Analysis Technique

Since this research involved examining gender aspects, it was not appropriate and suitable for the researcher to undertake the research on his own. The areas and ethnic groups used for this research are traditional and some consider it inappropriate, and in some instances taboo, for unknown males to speak to womenfolk. To overcome such issues, the researcher recruited and paid 2 local university graduates to be research assistants (RAs) for the purposes of conducting the fieldwork. Remuneration was paid to the RAs to cover their travel and meals and expenses. Further, due to the magnitude of the project and to prevent any subjective bias the researcher enlisted the 2 RAs as friends and families members involvement would have led to subjective bias; hence such members were discounted. Further benefits of the 2 RAs included providing local and ethnic knowledge that the researcher did not have.

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 required 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) 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 were grouped in the best short phrases without losing the sense of the sentence. Although such coding can also be made prior to data collection and analysis (Strauss, 1987; Strauss and Corbin 1998), this research did not pursue that route. Instead the researcher followed the understanding that important phrases can still be developed or changed during data analysis or could 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).

Theoretical propositions were also formed to provide 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. A sample example is provided in Table 4.

Table 4 Example of Themes used in the data analysis

First level themes	Second level themes	Third level themes	Categories
Egovernment 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
		Surfing the web	Web interactive channels

In this case study care was also 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. Further, the researcher provided codes to help relate the findings to the prepositional statement being used to validate the conceptual framework formed in this research. This process of data conceptualising, reducing, elaborating and relating it to prepositional statements is referred to as coding (Strauss and Corbin, 1998). Such a process can be used for theory development or preposition testing for validation of conceptual framework. Therefore this research is concerned with the later statement.

4 Findings and Analysis

4.1 Embedded Case study 1: Ethnic Society 1: Yoruba

The Yoruba live in Western Nigeria. A total of 57 Yoruba participants were interviewed that included 27 females and 30 males and the results are shown in Table 5 below.

Table 5: Diffusion Findings

Diffusion	***Yoruba***
Modes of Communication	Previous research found that many respondents preferred social interaction and believed this communication channel would increase use of e-Government products and services (Choudrie et al, 2010). It was mentioned that this way, information regarding good experiences would be rapidly diffused, something that Rogers (2003) also identified in Peru. It appeared that technology diffusion could be expedited by promoting technology use amongst women. With a larger sample size it was discovered that about 46 of the 153 (approximately 80%) of the subjects preferred social interaction as a form of channel of communication when learning of an innovation such as e-government. There were a low number (5) who preferred the internet when compared to the other forms of communication 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 of e-government products and services. 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.
E-Government's awareness process	When considering diffusion's e-Government awareness process, the Yoruba paid attention to word of mouth and social interaction, more than functionality, usability and usefulness of an innovation when adopting an innovation. Additionally, time was not a matter of consideration to the ethnic group. Citizens were indifferent in reply when questions regarding the time taken to adopt an innovation or the duration taken for the results of e-Government initiatives. Most subjects from the Yoruba indigenous society mentioned that they learnt of government programmes by participating, through someone they know or their colleagues.

Table 6: Gender findings

Gender categories of interest	***Yoruba***
Gender roles (GR): "Gender roles are the 'social definition' of women and men".	Although not clearly evident there are gender roles in society, with women citing their roles at home and men external roles. It was also very apparent that there are clear gender roles in the types of information that the genders access and when seeking answers regarding social activities. 41 of the 57 subjects affirmed the gender distribution of labour, which amounts to 82%. Judging responses of the Yoruba participants 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 it 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. 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. ***For GR phrases such as: "Do you think that women need and use government information?" "Do you think that the type of job that you do influences your source of information on government activities (like online voting, online civic registration, online licensing of vehicles or motorcycles and online birth registration)?"Are you or not interested in government information? Why?***
Gender Inequities (GI): "Means fairness of treatment for women and men, according to their respective needs. This may include equal treatment or treatment that is different but which is considered equivalent in terms of rights, benefits, obligations and opportunities." (Women and Equality Unit, 2000).	Both genders of the Yoruba subjects have total control over how they spend their resources. However, cultural barriers imposed by their 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. This led us to conclude that within the Yoruba females are treated equally. Socially females tend to be much more active than males and do not view government related information as pertinent to their current needs or lifestyles. For this, females rely on husbands for their required government related information. This led us to conclude that there is no gender inequity. We also sought to understand whether women and men were treated equally during social events and posed the question to a 45-49 years old, diploma holding male. *"I can go anywhere and watch anything. In social gatherings we sit according to our society status, but in some traditional gatherings women don't attend."* 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 etc. 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. 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. 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. ***For GI phrases such as were used: "During social gathering for awareness campaigns are women given seats at the back of their male counterpart or are not allowed to attend?" "As a woman do you think women will be more co-operative if the government information is distributed in their social circles-maybe groups where women meet?"***

Table 7: Culture's Findings

Hofstede and Hofstede's (2005) selected categories: Yoruba	
Power distance (PD) **"*This dimension relates to the degree of equality/inequality between people in a particular society." A country with a high Power Distance score both accepts and perpetuates inequalities between people. An example of such a society would be one that follows a caste system and in which upward mobility is very limited.***	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). A 25-34 year old female university undergraduate a 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. A 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.

Collectivist (CO) ***"Collectivist societies are societies in which people from birth onwards are integrated into strong, cohesive in-groups, often extended families (with uncles, aunts and grandparents) which continue protecting them in exchange for unquestioning loyalty." Example of individualism is: People emphasizing their success/achievements in jobs or private wealth and aiming up to reach more and/or a better job position. Collectivist example: Thinking more in terms of "we".***	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.
Uncertainty Avoidance (UA): This dimension concerns the level of acceptance for uncertainty and ambiguity within a society.A country with a high Uncertainty Avoidance score will have a low tolerance towards uncertainty and ambiguity. As a result it is usually a very rule-orientated society and follows well defined and established laws, regulations and controls.	Most of the Yoruba participants displayed 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 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. ***Phrases used were: "Will you be able to learn how to use online birth registration or online vehicles licensing or online application for business permit even though you do not understand how it functions?" "Will you be interested in online birth registration or online vehicles licensing or online application for business permit products rather than how the computer or internet works?"***
Long term orientation versus Short term Orientation (LTO vs STO): ***"Long- term oriented societies foster pragmatic virtues oriented towards future rewards, in particular saving, persistence, and adapting to changing circumstances. Short-term oriented societies foster virtues related to the past and present such as national pride, respect for tradition, preservation of "face", and fulfilling social obligations.***	Within the Yoruba we did identify STO. Citizens expressed an interest in adoption and use of e-government only if e-government catered to their immediate needs. 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, and what would be considered 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 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 of 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.***Phrases used were: "Does you think that it will be useful to know how to learn using online birth registration or online vehicles licensing or online application for business permit using for example, TV, radio, newspaper or social forum more than keeping a worker at one stop shops when one has any trouble using the computer or internet?"***

4.2 Embedded Case Study 2: Ethnic Society 2: Ibo

The Ibo ethnic group is located in eastern Nigeria. The researchers interviewed 12 participants (5 females, 7 males). 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.

Table 8:Diffusion Findings

Diffusion categories	***Ibo***

Modes of Communication	Once again, as within the Yorubas, participants were of the view that e-Government awareness could be promoted faster and better by females than males. As with the Yorubas, this is due to the perception that operating a computer is like employing a keyboard and since many females sought secretarial training skills, they could utilise and understand a computer better. However, there was no preference to the modes of communication. Some favoured technology usage but others considered social interactions and word-of-mouth as crucial to diffuse e-government's products and services.
E-Government Awareness process	Although some subjects were interested in the functionality of the e-Government products and services, a large number were interested in the outcomes and security of the process. However, others who did not agree with this view displayed interests in technology's function and future consequences of using the innovations. Finally, time was a matter of importance to the subjects from this area; therefore, time orientation might have some significant impact on the e-Government awareness process.

Table 9: Gender Findings: Ibo

Gender Categories of interest	***Ibo***
Gender roles: What are women's use & understanding/meaning of E-Government (e.g. what are their perceptions of E-Government provision	When determining which one of the sexes is likely to have more, or need more e-Government information, it was found that women were in a stronger position than men. In this region, women displayed interest in more women orientated topics such as, fashion than anything else. A woman was asked about whether she considered knowledge pertaining to education or current affairs being important. She replied: "*I can't remember the last time I read newspaper or watched any educating programme on television outside of reading fashion magazines and watching soap operas".* As such, the use of traditional or older forms of ICTS for the diffusion of e-Government provision, at least among women, would face challenges. As in the instance of Yoruba, it was found that there was no gender restriction to accessibility and participation within and of, e-government products and services. The women's own choices shaped their use of such products and services. Gender role is the most visible factor affecting access to information. Most male subjects did not face obstacles when accessing communication channels. However, women used such facilities more for family duties matters. In the Ibos there are no known noticeable society norms or observances that discriminate against any gender unless some traditional rituals and rites, which is beyond the scope of this research.
Gender Inequities: What is the interaction between E-Government and women's triple gender roles (e.g. how have their roles been affected)	The results found that there is consciousness in society with regards to gender difference; however, in practice not many subjects showed any regard for the issue. In this region, social stratification based on wealth and class was prevalent. Therefore, the opinion of a wealthy individual would be considered important and count as 'the word' when considering adopting technology. Gendered perceptions differed based on class. When lower educated individuals were asked whether gender would have any role in their decision making, they agreed that it would. As an example, when visiting the house of a participant who was invited to participate on the basis that the expressed views would be disseminated around the world and was not very well off in comparison to others, the researcher pointed to a female team member. Then the researcher asked whether her promoting a novel product, service or device would attract more or less attention and promote the innovation more. There was a nod of agreement from the respondent. To clarify whether this acceptance is based on gender, the researcher asked him if the item is expensive and the woman was promoting it, would the item still be

	accepted. The reply stated that if the item was only within his means would he purchase it. Accepting that answer, the respondent further probed that if the item was acquired and difficulties in usage were encountered, whom would he go to, a man or woman. The example then used was a laptop. The researcher asked if a man or woman both approached him to show him how to use the laptop, which he would prefer. He replied to say that it would be the woman because women use such things and have more experience of them. In the instance of highly educated and wealthy citizens, gender was less of an issue.

Table 10: Culture Findings: Ibo

Hofstede and Hofstede (2005) selected categories: Ibo	
Power distance	Hofstede and Hofstede (2005) Power distance is high. The differences in collectivism and power distance were more apparent in this ethnic group. A lesser educated male participant was asked if government assistance should be increased in daily life. He replied: "*Of what value is my manhood if I cannot feed my family*".
Collectivist	High collectivism (Hofstede and Hofstede, 2005). Contradiction to Hofstede and Hofstede (2005). Citizens seemed to have more respect for the family rather than overall larger society. A participant was asked the importance of recommendations by the local leader called the 'Igwe' on how to make an e-Government project a community project. He insisted *'nothing'*. He said that the *"Igwe' does not feed me or my family, so why have him dictate over us?"* However, it was learnt that information and knowledge regarding other government activities, such as voting registration, were adopted after religious leaders recommended them to the citizens. Also held in high esteem is a town union leader. Asked whether the town leader's 'word' would be followed, the reply was: "*When it is the decision of the town union, everybody must obey or else you face the consequences."*
Long term orientation	Hofstede and Hofstede (2005) Low long term orientation. High long term orientation as there was more respect for gender than reverence to religious leaders.

4.3 Embedded Case Study 3: Ethnic Society 3: Hausa

The Hausa ethnic group in Northern Nigeria is an Islamic one. This part of the research faced several obstacles, the major one being rescheduling due to the occurrence of riots. Riots occurred between an Islamic fundamentalist group known as Boko Haram ("Education is sin") and the police force, which led to the death of 150 people (www.thisdayonline.com, 2009). Due to this, the research team spent over three weeks waiting for thing to return to normality. This caused the research team's timing to run overtime and the loss of one RA team. Eventually, a replacement team was employed and the time spent in the region was drastically reduced. In this region, six participants were interviewed. Three men and three women were interviewed. Two of the women were economically active and one was a student. Both working women had no access to computers or the internet but the student did. Conversely, two men had access to hardware and Internet and one did not.

The first observation reflecting the divisions in 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 Principal Researcher (PR), a male, offered his seat to a female who was standing, she politely declined the offer and retreated to the back of the bus where the other females were seated. During the interview two of the female subjects did not allow the only male RA and PR to enter their houses. For

this reason there was greater reliance upon female RAs to conduct the interviews in this region. This was considered to be a huge limitation for this research, but has led the PR to consider involving other qualified female RAs for the next phases of this research.

Table 11: Diffusion Findings: Hausa

Diffusion categories	*Hausa*
Modes of Communication	To obtain access to the internet, most working class individuals require the use of computers, which are mostly located in internet cafes. A large majority of the internet (cyber) cafes are used by men, and their presence dominates the cafes. This makes it very difficult for women to walk into and make use of the computer. This does pose to be a barrier to access as access is restricted by the presence of men. When considering e-Government awareness among the Hausas, class and background have major roles to play in terms of access to resources and reasons leading to adoption a barrier to access as access is restricted by the presence of men.
E-Government Awareness process	When considering e-Government awareness among the Hausas, class and background have major roles to play in terms of access to resources and reasons leading to adoption. In this region, gender has an important role in diffusing and considering adoption of technology. For instance, if a man leads the development of e-Government awareness it will affect the female participation rate. Restrictions related to the gender divide could hamper the diffusion of e-Government in the Hausa region, which is a result different from the other two ethnic groups. Therefore, it can be concluded that among the Hausas, there are known and noticeable society norms and observances that will definitely affect e-Government channels of communications. Also, when considering adoption, it was observed that in this region some subjects were very interested in how the e-Government system functions and who controls it; but there was immense interest in the advantages offered by such systems. Again, such interest could lead to the identification of a key application, which could lead to adoption. In terms of time taken for an innovation to be adopted, it was learnt that the duration taken to use a technology was not an issue of importance. This is a result similar to Yoruba, but different from the Ibo.

Table 12: Gender Findings: Hausa

Gender Categories of interest	*Hausa*
Gender roles: What are women's use & understanding/meaning of E-Government (e.g. what are their perceptions of E-Government provision	In this region, gender has an important role in diffusing and considering adoption of technology. For instance, if a man leads the development of e-Government awareness it will affect the female participation rate. Restrictions related to the gender divide could hamper the diffusion of e-Government in the Hausa region, which is a result different from the other two ethnic groups.
Gender Inequities: What is the interaction between E-Government and women's triple gender roles (e.g. how	Among the Hausa, 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 that in comparison to men, females were less informed in many general knowledge topics, let alone, e-Government. We were also told that it is not proper for married women to seek information from sources outside their immediate families. A participant told us, "W*hatever I want to know, I will ask my husband if I*

have their roles been affected)	*don't know it*".

Table 13: Culture's Findings: Hausa

Hofstede and Hofstede (2005) selected categories: Hausa	
Power distance	Power distance is high. Religious leaders' views and opinions were highly revered, considered powerful and could not be questioned. Most subjects believed that the local king called the 'Emir' knows what is good for them and will always listen to and obey him. This suggests there is a high power distance, a result also identified within the other ethnic groups, but to varying degrees. It was also found that although the 'Emir' may not consult citizens, they rely upon him for protection and directions. It was also learnt that no e-Government activities have been executed by the 'Emir'; however, other e-Government activities, such as, registration for voting have been implemented by other religious leaders (known as 'Imams') and such initiatives are adopted by the citizens. To determine the roles of each of these leaders, the participants were asked whom the citizens would obey more, the Emir or Imam? A male respondent stated: "*Imam consult with 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*".
Collectivist	High collectivism (Hofstede and Hofstede (2005). The reply provided above displayed citizens compliance with an authority figure, was evident within the region and also, apparent from other informal conversations held with other citizens. This suggested a high collectivist attitude.
Long term orientation	Hofstede and Hofstede (2005) Low long term orientation. Low long term orientation as there was respect for the priest's or king's word and for traditions.

4.4 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 prefer 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 in figure 1 below.

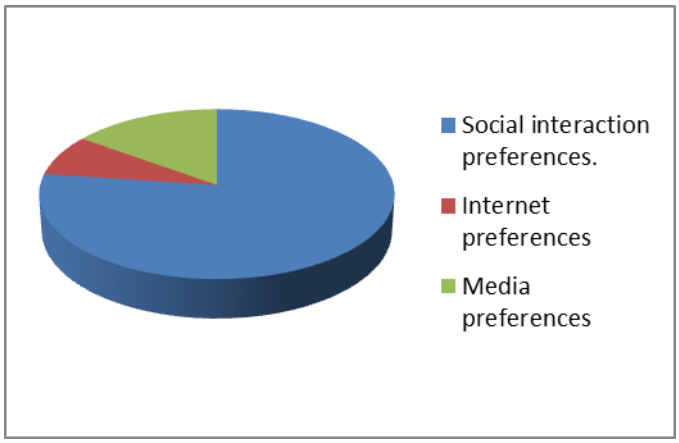

Figure 1: Cumulative preference chart for e-government awareness channels

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.

4.4.1 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 jobs are 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.

4.4.2 Equal 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.

4.4.3 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.

4.4.4 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.

4.4.5 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.

4.4.6 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.

4.4.7 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.

4.4.8 Collectivism

Hofstede et al. (2010) also found a collectivist attitude within the country they used as a case study. 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.

4.4.9 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.

4.4.10 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 Discussion

Heeks and Bailur (2006) have argued that a more textured understanding of e-Government diffusion can be attained through theory development and application. This paper has attempted to offer insights into the influence of culture and gender on e-Government diffusion by examining their influence on citizens' perceptions and understandings of e-Government in three ethnic groups in Nigeria. It was discovered that even within the same country some of the theoretical foundations can be applied in certain regions and cultures but not to others. For instance, when examining diffusion, within the Hausa interpersonal roles of men was more prominent, but within the Ibo and Yoruba females were considered pertinent for the diffusion of e-government as women were viewed to be the ones with keyboard skills. Further, within the Ibo and Yoruba social interaction more than anything else would lead to more adoption and usage than novel forms of technology. What was also learnt is that the social interaction occurs due to religion in Hausa, and Yoruba, but within the Ibo, it was due to the leading figure in the household, in their instance the men of the household. These findings concur with Roger's (2003) findings suggesting that interpersonal communication is essential within less privileged classes of society. It was also found that leaders do make an impact upon diffusion and this is evident in the Yoruba and Hausa, which correspond to Pea's (1987) results.

The paper attempts to examine gendered attitudes influence perceptions and understandings of e-Government diffusion within a framework that addresses women's practical as well as strategic needs. The study provided insights into how gendered cultural norms shape perceptions and awareness of, e-Government provision. They also determine access to information about, and use of such provision. This had diverse manifestations in the three ethnic groups. For instance, the gender division of labour is prevalent within all three ethnic groups, but the extent to which this impacts women's decision-making varies. For instance, in the Yoruba and Ibo, women are decision makers with regard to adoption, accessibility and usage of technology; therefore, can assist in e-government diffusion awareness channels. Contrarily, the Hausa has a gender divide such that women cannot access technology and obtain information of interest to them. In this situation, e-government awareness could be problematic and difficult to achieve without specific strategies that take into account these cultural norms.

The results indicate that e-Government awareness can be increased within all three ethnic groups but this needs to be executed taking into account the gendered cultural norms that shape the adoption of e-Government. Further in-depth

research needs to be conducted using the gender analysis framework to assist in obtaining a better understanding and identification of e-government awareness channels. From the gender framework of Morgan et al (2004) it was possible to Further, the greater divide between the roles and status of men and women among the Hausa led to perceptions of awareness channels that differed from that of the Yoruba or Ibos. Whilst the greater independence demonstrated by the Ibo and Yoruba women suggests that they sought information for themselves, religious traditions of the Hausa dictated that women seek information from their husband and family members.

Further perceptions of the gender of the technology itself (technology as culture perspective) also shaped people's ideas about how e-Government awareness could be achieved. An association of ICTs with women's work (secretarial and administrative roles) led to the view of e-Government provision as a female arena. Such views an have an impact on the acceptance of e-Government provision.

Culture is a complex issue to consider. This research paper has attempted to identify whether Hofstede and Hofstede's (2005) work would be applicable in practice. For this we also considered that at the time e-Government was emerging; therefore, determining its position within the various indigenous ethnic groups would be of benefit. E-Government was viewed to be the innovation and its role in citizens' life was examined using diffusion theory.

Using Hofstede and Hofstede's (2005) findings we found that power distance was high and there was a collectivist attitude in all groups, but again exhibited differently between the groups with implications for e-government awareness channels For example, among the Yorubas civic leaders seemed to be revered, whilst among the more entrepreneurial Ibos, people with high status and wealth, as well as family members were given high respect. Finally the religious Hausa respect and revere religious leaders In the Ibo, power distance was lower than Yoruba. A common characteristic within all three ethnic groups was uncertainty avoidance, which was mediocre in all three regions. Of the three ethnic groups, the Ibo displayed more individualism and high long term orientation but generally they were all collectivist in nature, with inferences for the diffusion of e-Government. For example among the Ibos, the lower masculinity index would suggest that any e-Government awareness training could be done on a mixed gender basis whilst such training among the Hausa would have to be done in a segregated form. However, the influence of the social nature of all the ethnic groups, particularly the women, in terms of lifestyle, would make it important to give consideration to using women's social groups as channels for e-Government awareness.

An analysis of 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 and Yoruba religious traditions indicate that the reverence given to religious leaders would be useful in employing these leaders as the communications channels for the 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.

In terms of how this research addresses the area of *Cultural Values towards Technology* (Hasan and Dista, 1999) it can be learnt that in particularly 2 of the ethnic societies, Yoruba and Hausa, cultural values acquired from higher religious leaders' impact citizens adoption and usage patterns. In the Ibo it is less evident; therefore, cultural values also need to be considered when diffusing innovative forms of technology.

It also emerged from the findings that barriers existent in other developing countries, for example as found by Janenova (2010) in Kazakhstan (political environment being diverse, corruption, digital divide, lack of customer focus, monitoring and evaluation and technological problems) can also be identified in Nigeria. In the instance of Nigeria the political environment being diverse, lack of customer focus and monitoring and evaluating and technological problems would be challenges to be encountered and overcome.

Clearly this exploratory study has only begun to uncover the relationship between culture, gender and e-Government diffusion and more research is required. However, the research has confirmed that using models developed for developed countries with a high level of resources, high literacy rates and more uniform gendered and cultural norms without modification to suit the research context is inadequate to explain the experiences of citizens in other societies. For example, the study found that theoretical or academic explanations of e-Government were not understood by the participants; therefore, some questions and terms were rephrased to make them understandable for the subjects. More textured approaches to cultural models and a gender analysis framework that considers the macro, meso and micro levels of experience is required to assess the complexity of the relationship between culture, gender and e-Government diffusion.

Further, what was also learnt from this research for the next, larger phase of study is that contact with participants is required much earlier on and an incentive to ensure participant numbers and interest in the research is required.

For policy makers the findings of this exploratory study suggests a different policy approach to e-Government diffusion. This implies a limitation on the use of traditional mass communication media to raise awareness. A more nuanced approach to e-Government diffusion that reflects that culture and gendered norms of different groups is required. Particularly for women, consideration needs to be given to the effectiveness of their ownership of such awareness-raising. From our findings we learnt that for e-Government awareness, the behaviour and attitude of suppliers could be a major factor upon the consumption of e-Government product and services. During one of the interviews, one of the participants gave examples of where suppliers or rather instructors made her leave a training session due to her attitude. She concluded she would only go to training if *"it [would] 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 becomes 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 people teaching us are corrupt themselves. Will the computer not help them perpetuate their evil act?"* Such remarks confirmed that there is interaction between the providers of e-Government and the consumers of e-Government-the citizens. In our view the next phase of this research should consider the providers as a form of communication channel, although clearly there are challenges to a top-down approach to training.

For practitioners and industry, the insights provided by this study, point challenges that might be involved in managing e-Government diffusion processes in developing countries. Further research is required in this regard.

6 Conclusions

The aim of this research is 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. This research will also aim to examine gender influences within the subcultures when considering an e-Government awareness channel in Nigeria*. What was concluded from this research-in-progress exploratory study is that despite a small sample number of participants it could be concluded that theorists such as, Hofstede and Hofstede (2005) classifications can be related to certain indigenous ethnic societies of a country. There is always variation and they can cause diversification in results, which we have attempted to illustrate in this small, exploratory study. Further, gender frameworks can assist in providing a diverse understanding that can be categorised, which some researchers can find beneficial for future developments of theories. However, we did learn that diffusion findings that Roger (2003) found in developing countries such as, Peru are also evident in Nigeria. Further, diffusion is affected by culture and gender in Nigeria, which is certainly something to consider in the future for a larger sample population in Nigeria and/or other developing countries. We acknowledge that these discussions are early results and anticipate that future research will address some of these identified issues.

What was also found is that it is not an easy prospect examining various factors for e-government diffusion in developing countries using qualitative studies; albeit using only interviews, observation and reference to archival documents. For one, distances are large when covering large countries like Nigeria. Second 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. Third, in a developing country like Nigeria it was found that the formation and co-operation of a network is critical. If this is not prevalent and well developed, there is a substantial danger of failure. What has also been learnt and critical for future research is that huge challenges exist if quantitative studies without any a pre-prepared network of contacts are undertaken.

For this research the future directions lie in acquiring a larger sample population and comparing to determine whether variations in the findings occur. Further, it is hoped that a longer time frame will be used to learn more of how diffusion occurs and to obtain a richer and deeper understanding of the culture, gender and diffusion issues.

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References

APC-WNSP (Association for Progressive Communications - Women's Networking Support Program) (2002a) Gender Evaluation Methodology for Internet and ICTs: Gender Analysis. http://www.apcwomen.org/gem/gend_analysis.htm (accessed 26/4/2010)

Avgerou, C. (1998), "How can IT Enable Economic Growth in Developing Countries?"*Information Technology for Development* , vol.8, no.1, pp.1 - 14.

Bagchi, K., Udo, G. and Peeter, K. (2007). GLOBAL DIFFUSION OF THE INTERNET XI: THE INTERNET GROWTH IN AFRICA: SOME EMPIRICAL RESULTS. Communications of the Association of information Systems, 19:325-51.

Bardasi, E. and Wodon, Q. (2006). "Measuring Time Poverty and Analyzing Its Determinants: Concepts and Application to Guinea" in Mark C. Blackden, & Quentin Wodon, (eds.) *Gender, Time Use, and Poverty in Sub-Saharan Africa Gender, Time Use and Poverty in Sub-Saharan Africa*, World Bank Working Paper No. 73, pp. 71-95.

Barth, R.S. (2002). **Beyond Instructional Leadership. 59, (8):6-11.**

Bates, G., Chin-Hao, H., and Morrison, J.S. (2007). Assessing China's Growing Influence in Africa. **China Security, Vol. 3 No. 3 Summer 2007, pp. 3 – 21.**

Carter, L. and Weerakkody, V. (2008). E-government adoption: A cultural comparison. Information Systems Frontiers. 10: 473-82.

CIA:WorldFactBook (2004). Nigeria.

CIA:WorldFactBook (2010). Nigeria, April, Available at: https://www.cia.gov/library/publications/the-world-factbook/geos/ni.html

Choudrie, J. and Lee, H.J. (2004). Broadband Development in South Korea: Institutional and Cultural factors. European Journal of Information Systems, 13 (2), 103-114.

D'Iribarne P. (1997)). "The Usefulness of Ethnography In international Comparison of organisation" International Study for Management and Organisations" 26(4) 30-47.

Elson, D. (1995). Gender Awareness in Modeling Structural Adjustment. World Deveopment, 11: 1851-68.

Evans D. and Yen C D (2005). E-government : An analysis for the implementation : Framework for understanding culture and social impact. Government information Quarterly, 22, (354-373).

Garson, D. (2007) Case Study. Online publication www2.chass.ncsu.edu/garson/pa765/cases.htm (Accessed on 12th May 2008)

Gillard , H., Howcroft, D., Mitev, N. and Richardson, H. (2008). Missing women": Gender, ICTs, and the shaping of the global economy. Information Technology for Development. 14, (4).

Hafkin N. and Taggart N, (2001) Gender, information Technology and developing countries: An Analytic Study. Washington, DC: USAID

Hall E. and Hall M. (1990). Understanding Culture Differences. Yarmouth, ME: Intercultural Press

Harding, S. (1998). The Case For Strategic Realism: A Response To Lawson. Feminist Economics. 5, (3): 127-133

Harding, S. and O'Barr., J.F. (1987). Sex and Scientific Inquiry. University of Chicago Press, Chicago

Harrison and Huntington,(2001) Culture Matter: How values shape Human Progress, Basic Books, New York

Hasan H. & Ditsa G. (1999) The impact of Culture On The Adoption of IT: An Interpretive Study. Journal of Global information Management. 7, (1)

Heeks, R. and Bailur, S. (2006). Analyzing e-Government research: Perspectives, philosophies, theories, methods, and practice. *Government Information Quarterly*, 24,(2):243-265.

Heeks, R. (2003). **Most e-Government-for-Development Projects Fail: How Can Risks be Reduced? IDPM. Available at:**
http://unpan1.un.org/intradoc/groups/public/documents/CAFRAD/UNPAN011226.pdf

Heeks R. (2002) e-Government in Africa: Promises and Practice. iGovernment working paper series. Institute for Development Policy and Management, University of Manchester, precinct Centre Manchester.

Henwood F. (1993) establishing Gender perspectives on IT: problems ,Issues and Opportunities in Green E, Owen J.and Pain D 9(eds) (1993) Gendered Design? IT and Office Systems. London : Taylor & Francis

Hofstede,G (1980). Culture's consequences: International differences in work related values. Beverly Hills, CA: Sage publication

Hofstede, G. (1983), "Dimensions of national cultures in fifty countries and three regions", in Deregowski, J.B., Dziurawiec, S., Annis, R.C. (Eds),*Explications in Cross-cultural Psychology*, Swets & Zeitlinger, Lisse, pp.335-55.

Hofstede,G (1991) Culture and Organizations: software of the Min. London, McGraw-Hill.

Hofstede, G. and Hofstede, G.J. (2005). Cultures and Organisations: Software of the Mind. McGraw-Hill, USA.

Ifinedo, P. (2005). **Measuring Africa's e-readiness in the global networked economy: A nine-country data analysis International Journal of Education and Development using ICT. Available at:** http://ijedict.dec.uwi.edu/viewarticle.php?id=12..

Ifinedo, P. (2006). Towards e-government in a Sub-Saharan African Country: Impediments and Initiatives in Nigeria. ***Journal of e-Government.***
Janenova, S.A. (2010). E-GOVERNMENT IN KAZAKHSTAN: CHALLENGES FOR A TRANSITIONAL COUNTRY. 18th NISPAcee Annual Conference "Public Administration in Times of Crisis", Warsaw, Poland.

Kasekende L. A., Oshikoya T. W., Ondiege P. O., Dasah Z. B.(2006) Competitiveness and Investiment Climate in SENE Economies. African development bank.

Jovacic, Z.J. (2005). The impact of National Culture on Worldwide eGovernmetn Redainess. Informing Scince Journal, 8: 143-158.

Lemert, c. (1993). **Social Theory**: The **Multicultural** and **Classic Readings**. Boulder, CO: Westview Press.

McSweeney, B. (2002). 'Hofstede's Model of National Cultural Differences and Their Consequences: A Triumph of Faith - A Failure of Analysis', *Human Relations*, 55(1): 89-118

Morgan, S., Heeks, R. and Arun, S. (2004) *Researching ICT-Based Enterprise for Women in Developing Countries: A Gender Perspective*, IDPM, University of Manchester, UK . Available at: http://www.womenictenterprise.org/GenderResearch.doc

Muir, A. and Oppenheim, C. (2002) "National Information Policy developments worldwide in electronic government", *Journal of Information Science*, 28(3), 173-186.

Myers, M. D. and Tan, F. (2002). 'Beyond Models of National Culture in Information Systems Research', Journal of Global Information Management, 10(1): 24-32.

Ogbomo, M.O. (2009). **Information and Communication Technology (ICT) in Local Government Administration: The Case of Oshimili North Local Government Area of Delta State.** Library Philosophy and Practice July.

Olsen V.L. (2000) 'Feminisms and Qualitative Research at and into the Millennium'. In Denzin, N.K. and Lincoln, Y.S. (eds) Handbook of Qualitative Research. London: Sage Publications.

Pea, R. D. (1987). Socializing the knowledge transfer problem. **International Journal of Educational Researc**h. 11, (6): 639-63.

Rogers, M. E. (2003) Diffusion of Innovations. Fifth Edition Free Press New York.

Sornes, J-O, Stephens, K.K., Saetre, A.S. and Browning, L. D. (2004). The Reflexivity between ICTs and Business Culture: Applying Hofstede's theory to compare Norway and the United States. *Informing Science Journal*, **7**, 1-30

Shareef, M. A., Kumar, U., Kumar, V., Dwivedi, Y.K. (2009). Identifying critical factors for adoption of e-government. Electronic Government, an International Journal. 6, (1): 70-96.

Rowbotham S. (1995). Feminist Approaches to Technology: Women's Values or Gender Lens? in Mitter S. and Rowbotham S. (eds) Women Encounter Technology: Changing Patterns of Employment in the Third World. London & New York: Routledge

Rubin, H. & Rubin, I. (1995) Qualitative Interviewing: The Art of Hearing Data, London, Sage.

Scholz, R. W. & Tietje, O. (2002). Embedded Case Study Methods: Integrating Quantitative and Qualitative Knowledge. London: Sage Publications Inc. ISBN 0-7619-1946-5

Schwartz, S. H. (1994). Beyond individualism/collectivism: New cultural dimensions of values. In U. Kim, H. C. Triandis, C. Kagitcibasi, S. C. Choi, & G. Yoon (Eds.), *Individualism and collectivism: Theory, methods, and applications* (pp. 85–119). Thousand Oaks: Sage Publications.

Stahl B.C and Elbeltagi (2004) Cultural Universality Versus Particularity in CMC. Journal of Global Information Technology Management; 7,4,ABI/ INFORM Global Page 47.

Stedham E.Y and Yamamura H. J,(2004) Measuring national culture: does gender matter? Journal of Women in Management Review, Volume 19, Number 5, page 233-243.

Stroh, M. (2000) Qualitative Interviewing. IN BURTON, D. (Ed.) Research Training for Social Scientists : A Handbook for Postgraduate Researchers. London, Sage, 196-214.

Trauth, E.M. and Quesenberry, J.L. (2006) "Gender and Information Technology Workforce: Issues for Theory and Practice." In P. Yoong and S. Huff (Eds.), Managing IT Professionals in the Internet Age. Idea Group, Inc.: Hershey, Pennsylvania.

Trauth E., M. (2001), The Choice of Qualitative Methods in IS Research, Article in Qualitative Research in IS: Issues and Trend. Idea Group Publishing

Trompenaars, F. and Hampden-Turner, C. (1997). Riding the Waves of Culture. Nicholas Brealey Publishing, London.

UN-ASPA (2002) *Benchmarking E-government: A global Perspective; Assessing the progress of the UN member States*. (United Nations, Division for Public Economics and Public Administration, and the American Society for Public Administration), New York, May

UNDP Evaluation Office, 2001. Information Communications Technology for Development, Essentials 5, September.

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, (27:3), 425-478.