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An Appraisal of the Motivators for and Inhibitors to Information Communication Technology (ICT) Use and Adoption by SMEs in Nigeria

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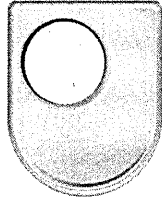
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**AN APPRAISAL OF THE MOTIVATORS FOR AND
INHIBITORS TO INFORMATION COMMUNICATION
TECHNOLOGY (ICT) USE AND ADOPTION BY SMEs IN
NIGERIA**

MASTER OF RESEARCH (MRes)

(BUSINESS AND MANAGEMENT)

AJOBO ROGHOKE TOM

SEPTEMBER 2015

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ABSTRACT

The use of Information and communication technology (ICT) to gain competitive advantage has become a key strategic issue amongst organisations in the fast globalizing environment. This research aims to identify and recommend strategies that would assist in stimulating and increasing ICT adoption and use by Nigerian SMEs.

This study on the appraisal of the motivators for and inhibitors to the use and adoption of ICT by SMEs in Nigeria. Present arguments suggests that for SMEs to survive and remain competitive in the current highly competitive business environment, there is the need to adopt and use ICT to attain some level of competitive advantage. To be able to achieve the above aim, this study adopted the qualitative research approach and a study of seven selected SMEs in Nigeria. Interviews were conducted with owner/managers with a view to get a better and deeper understanding of various level of government influence on ICT adoption. The research identified key factors that act as drivers of ICT adoption amongst SMEs in Nigeria. Summary of the factors that affect ICT adoption include;

- Electricity/Power Challenges.
- Finance and cost of High cost of hard/software.
- Lack of focused policies.
- Corruption.

Recommendations:

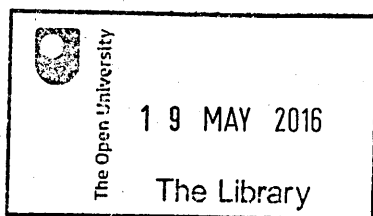
- As (SMEs) are among the greatest supplier of labour, there is the need for government to provide the necessary support and infrastructures.
- Government needs to create more awareness on ICT benefits and adoption.
- ICT should be introduced in all schools, colleges and universities and made compulsory.

DEDICATION

THIS THESIS IS DEDICATED TO MY BELOVED MOTHER

(LATE MRS FATTY REBECCA AJOBO- NEE GORY)

AND TO THE GLORY OF GOD ALMIGHTY



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ACKNOWLEDGEMENT

My deepest gratitude goes to God, for granting me the grace, strength and wisdom to undertake and complete this research work even when all hopes were almost lost.

I remain very grateful to my supervisors- Dr Richard Blundel and Dr Mike Ngoasong for their support, direction, objective comments and feedbacks. Above for all for their encouragements during the death of my mum. And to Dr Mathew Analogbei and Charles Mbalyohere, thanks for your kind spirit and support, my family, friends and my research participants who have in one way or the other supported the completion of this research.

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CHAPTER 1

INTRODUCTION

1.0 BACKGROUND OF THE STUDY

The modern economic environment which is dominated by globalization, hyper-competition, and knowledge and information revolution has revolutionized the way business is conducted (Pavic et al., 2007). Transactions over the internet has helped in linking-up SMEs to global competitiveness. According to (Olise et al, 2014), in the literature of ICT, its adoption as proxies by transaction over the internet has significantly improved the efficiency, performance and productivity of SMEs, however, ICT adoption by SMEs in Nigeria has been reported to be comparatively low.

In the literature (Adekunle and Teller, 2008; Apulu and Ige, 2011) amongst others, have identified one or more factors that affect the adoption and use of ICT in various sectors in Nigeria, including SMEs. These factors include: lack of infrastructural facilities, lack of funds, cost of implementation, lack of awareness, lack of appropriate policies, lack of skills and training, cultural factors, power and energy, corruption, low levels of education, illiteracy, lack of proper information, etc. Adenikinju (2005), advocates that problems relating to the SME sector in Nigeria and its development have been handled inappropriately by the government and highlight problems such as infrastructural and cultural factors, as acting against the effective development, exploitation, and implementation of ICT policies in Nigeria.

With regard to cultural values, many SMEs in Nigeria fail to nurture openness and knowledge sharing hence cannot provide the appropriate human input required for their ICT initiatives (Apulu and Latham, 2009). Also, Malik and Malik, (2008) stated that a lack of supportive organisational culture and structure may hamper technology initiatives in any

organisation, and that culture can influence actual behaviour through its influence on attitudes and subjective norms. The lack of infrastructural facilities is another factor that affects the adoption and effective utilisation of ICT in Nigeria SMEs. This results from the insufficient provision of facilities such network backbone and fibre-optic backbone for Wide Area Networks amongst others by government, which are essential for interconnectivity between and among SMEs (Apulu et al., 2011). Achimugu et al (2009), indicate that the limited availability of physical infrastructures in Nigeria is a major factor affecting SMEs development and that infrastructural inadequacies is a key constraint to private sector development.

As cited by Ghobakhloo, et al (2012), today's technological progression, the formulation, implementation and application of IT policies, is a significant driving force behind many socioeconomic changes, and Information and Communication Technology has been described as a catalyst for development in both developed and developing countries. As the utilization and commercialization of IT becomes more widespread throughout the world, the use and adoption of novel IT can generate new business opportunities and various benefits. Nowadays, both large and small organizations (SMEs) are seeking ways to reinforce their competitive positions and improve their productivity (Premkumar, 2003). Accordingly, there is an increasing consciousness of the necessity to derive profit through investment in IT within SMEs. IT tools can significantly assist SMEs by supplying the required infrastructure, which is necessary for providing appropriate types of information at the right time.(Benbasat and Barki, 2007). Many organisations of all types are currently utilizing Information and Communication Technology (ICT) around the globe, not only for cutting costs and improving efficiency, but also for providing better customer services. Also, Governments world over are adopting ICT to provide better services to their citizens (Irefin et al., 2012). As for Nigeria, *'participating in the emerging information society is contingent upon availability of adequate information infrastructure therefore; developing*

countries like Nigeria are making efforts towards building their national information infrastructure with the aim of enhancing their global participation and competitiveness' (Babalola, 2013).

Information and Communication Technology (ICT) can play a very important role because it can help SMEs create both business opportunities and combat pressures from competition. Kapurubandara et al (2006) have categorized internal and external barriers that impede adoption of ICT by SMEs in a developing country. The internal barriers include, owner/manager characteristics, firm characteristics, cost and return on investment, and external barriers include, infrastructure, social, cultural, political, legal and regulatory. Lal (2007) investigated the adoption and use of ICTs by SMEs in Nigeria and found that one of the major factors inhibiting ICT diffusion and intensive utilization is '*poor physical infrastructure*'. In other words, in developing countries some of the ICT challenges include legal and regulatory issues, weak ICT strategies, lack of research and development, excessive reliance on foreign technology and ongoing weaknesses in ICT implementation (Dutta et al 2003).

1.1 STATEMENT OF RESEARCH PROBLEM

The use of ICT is the major difference between the developing and developed worlds. In a globalized world, weak or inadequate ICT utilization widens the digital divide and promotes underdevelopment. Advances in technology, as well as the widespread deployment and exploitation created the global village that makes globalization possible. The implications are that there are no real national boundaries again. Adeyemi (2014) opined that apart from the unhelpful policies, there are unfortunately a number of other constraints that inhibit the growth of SMEs and the use of ICT in Nigeria, these include; lack of and/or poor access to credit facilities, unstable and uncondusive macro-economic environment heavily beclouded by uncertainties, poor

infrastructure, high cost of equipment's, lack of information on markets and widespread

Fraud that leaves little trust between stakeholders. Also, with regards to Nigeria, Azeez et al, (2012) investigated the threats to successful e-government implementation in the Nigerian Civil Service. Their study found that lack of IT experts, poor IT infrastructure, corruption among government officials and poor electricity supply were some of the major impediments to e-government in Nigeria.

According to (Apulu, 2012) in spite of the growing number of studies on the adoption of ICT by SMEs, (e.g. Harindranath et al., 2008; Olatokun & Kebonye, 2010; Ongori & Migoro, 2010) , there is still a lack of understanding especially with respect to key factors that affect its effective utilisation in different contexts around the world. Research in the area of ICT use and adoption in SMEs is still under-researched in developing countries and Nigeria is no exception. Aleke et al (2009) also state that the benefits brought about by the emergence of ICT applications have not been fully explored in the developing economies of the world. Heeks & Kenny (2002) suggested the need to understand the contextual setting of developing countries in order to effectively apply information technology developed in the west (Europe & North America) to these countries. Also, issues faced by SMEs are important as they drive the economies of many nations. Therefore, it is imperative to appraise the motivators for and inhibitors to the use and adoption of ICT by SMEs in Nigeria' and give recommendations based on the findings of the research.

1.2 RESEARCH AIM AND OBJECTIVES

Based on the issues raised above, the aim of this research is to identify and recommend strategies that would assist in stimulating or increasing the utilisation and adoption of ICT by Nigerian SMEs. Also, it is important to determine the strategies of government as it affects the use and adoption of ICTs by firms.

The fundamental objectives of this study therefore is to;

- Critically analyse the drivers and inhibitors to ICTs adoption and use among SMEs in Nigeria,
- Determine and consider the benefits of Information and Communication Technologies (ICTs) usage, and adoption by SMEs in Nigeria,
- Examine the challenges facing ICT use and adoption by SMEs in Nigeria.

1.3 RESEARCH QUESTIONS

The development of a research question is a process of looking at an issue that might be a problem and formulating a question about it. This study hopes to answer the following research questions:

1. What are the motivators for and inhibitors to ICT adoption and use in Nigerian SMEs?
2. What are the perceived benefits/cost of ICT use and adoption by SMEs in Nigeria?
3. How can the adoption and effective utilization of ICT be improved in Nigerian SMEs?

1.4 STRUCTURE OF THE THESIS

This research study consist of six chapters. Chapter one is the introductory chapter touching on the overview and background of the study, statement of problem, together with the aims, objectives and research questions. Chapter two focuses on a review of the theoretical and empirical literatures on the use and adoption of ICT by SMEs and provide a conceptual framework for drivers and inhibitors that influence ICT use and adoption. Chapter three discusses the research methodology and evaluates the selection of the research method adopted. Chapter four presents the method of data analysis and includes background information of the interview participants. Chapter five discusses the data interpretation and research findings and relates them to existing literature. While chapter six summarises the overall findings of the research. The chapter present the conclusion, limitations and recommendations for future research.

CHAPTER 2

REVIEW OF LITERATURE

2.0 Introduction

This literature review is intended to provide an insight on ICT use and adoption by SMEs and appraise the motivators for and the inhibitors to IT use in Nigeria, as this possess the potential for contributing significantly to economic growth and development. 'Nigeria is now Africa's leading economy, overtaking South Africa last year to become the continent's largest nation in terms of GDP (Odufuwa, 2014) yet to take its rightful place among the world's top emerging markets, the country must overcome a series of obstacles. Most pressing are economic diversification, job creation and a more effective conversion of growth into what matters most; rising incomes for the country's 170 million citizens. One change-maker for all three goals will be the country's vast network of micro, small and medium-sized enterprises (SMEs)' (Economist group, 2015). This literature review therefore is intended to justify the appropriateness of appraising the motivators for and inhibitors to ICT use and adoption by SMEs to stimulate economic growth and development through the use and adoption if ICT in Nigeria. Owing to differences in socio-economic development among countries, the literature on the topic is rife, with varying literally perspectives and insightful empirical findings.

2.1 ICT AND SMEs DEFINED

ICT is as an umbrella term that covers all technical means for processing and communicating information. The convergence of Information Technology and Telecom Technology gave birth to ICT (Akunyili, 2010). Information and communication are human needs. Without information decision making would be subjective. Communication is key and central to all forms of social and economic growth. Accordingly, Awe, (2015)

noted that, technology helps to overcome the barriers of time, cost and distance associated with these needs. The global knowledge economy depends on the purposeful and sustainable exploitation of knowledge by all sectors. Citing the Federal Republic of Nigeria (National Information and Communication Technology (ICT) final draft policy, 2015), *'ICT has been acknowledged to be one of the most critical tools underpinning socio economic development in the 21st century. Its global importance has led to numerous countries transforming their ICT sectors to lend support to other critical sectors in terms of efficiency, productivity and transparency, thus aiding job creation, better governance and overall socio economic development.'*

The importance of Small and Medium Sized Enterprises (SMEs) cannot be over emphasised in the economic development of any nation, since SMEs play a critical and pivotal role in every country's economic development (SMEDAN, 2005). Both in developed and developing countries, and Nigeria is no exception.

Not only do the definitions of SMEs vary, but there are wide ranging views on the characteristics of SMEs in various countries and contexts. In Nigeria, the National council of Industries refers to SMEs as business enterprises whose total costs, excluding land, are not more than two hundred million naira(N200,000,000)(Apulu,2011). However, the Small and Medium Sized Development Agency of Nigeria (SMEDAN) defines SMEs based on the following criteria: a micro enterprise as a business with less than 10 people with an annual turnover of less than, N5, 000,000:00), a small enterprise as a business with 10-49 people with an annual turnover of N5 to N49,000,000:00; and a medium enterprise as a business with 50-199 people with an annual turnover of N50 to N499,000,000:

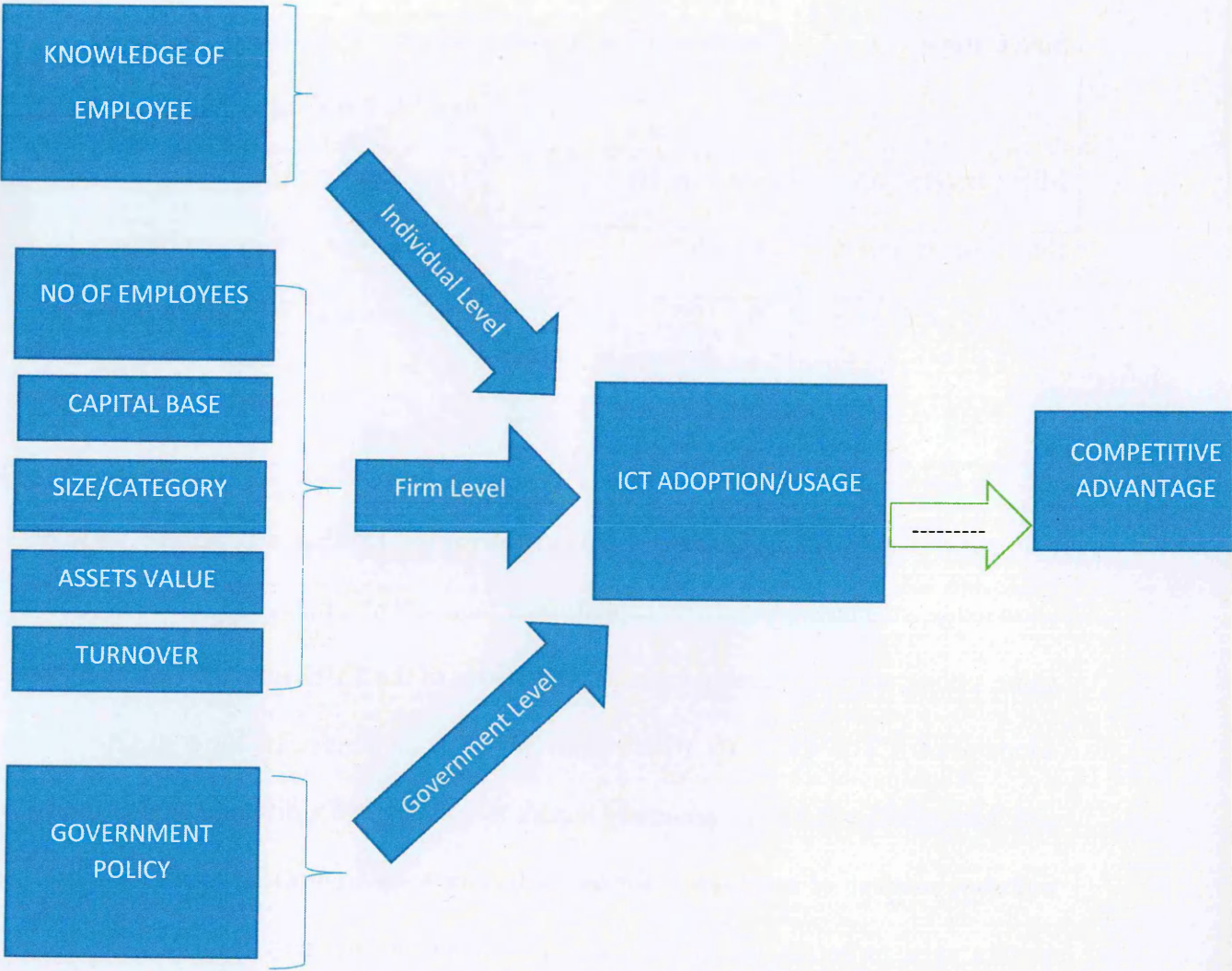
This research adopts the definition of SMEDAN (2005) as summarised in the table below;

Table 2.1: Definition of SMEs in Nigeria (SMEDAN, 2005)

Size/Category	Number of Employees	Assets (₦ million) excluding land & building
Micro Enterprises	Less than 10	Less than 5 million Naira
Small Enterprises	10 – 49	5 – Less than 50 million Naira
Medium Enterprises	50 – 199	50 – Less than 500 million Naira

Despite the varying perspectives in the above definitions, researchers are in agreement in indicating that Small and Medium Scale Enterprises (SMEs) are defined in terms of knowledge, size or market share; capital base; numbers of employees; turnover and assets value among others. Arguably these characteristics of the SMEs affect the use and level of adoption of ICT in the sector (Olise et al, 2014). Accordingly, Taylor et al (2012), agree and acknowledge that there are many factors that make SMEs different, such as turnover, industry, number of employees, format of business, environmental influence etc. These factors need to be studied in more detail to establish how they influence the adoption process. Taking a cue from the above definition of SMEs, a conceptual framework is developed to help establish how these factors help influence ICT adoption by SMEs.

Figure 1: A Schematic Diagram of the Conceptual Framework



Source: Researcher Conceptualization

2.2 THE DRIVERS OF ICT USE AND ADOPTION BY SMEs

Over the years, the use of ICTs by SMEs have been recognised as helping to bring about these significant national contributions which the United Nations (2007) identified to include: increasing productivity in the production process, enhancing and increasing the efficiency of internal business operations, connecting SMEs more easily and cheaply to external contacts whether locally or globally, improving inventory management systems, decreasing wastage in production processes, improving communication between different departments within a firm, improving accounting and budgeting practices, reducing communication costs and geographic barriers with global suppliers and clients. Also, Taylor (2015), given their many benefits, SMEs are adopting ICTs to support their, competitiveness, productivity and profitability. ICTs support SMEs developments by facilitating more effective integration of business processes, lower transaction and communication costs (Davis, 2002). In this regard, it is important and better to appreciate the key drivers that have been found to influence the use of ICTs by SMEs in a developing country. There is significant consensus that ICTs have major effects and influence on individual capacity and knowledge, experience, productivity, firm's expansion and growth, profitability and competitiveness, but these effects will only be realised when ICT is widely adopted and use by SMEs (Martins & Oliveira, 2008). Presently, Bloom et al, (2009) ascertain that ICTs play a major role in networking and communication as firms use these technologies to facilitate communication among employees and reduce co-ordination costs. According to Hanna (2003), ICT enhances the production process in organisations monitoring technologies could be used to reduce the number of supervisors required in the process. Arvanitis and Loukis (2009) also advocate that the use of ICT has direct implications for firms, because ICT helps in areas such as information gathering and dissemination, inventory control and quality control.

Olugbenga (2006) argues that ICTs are being used for strategic management, communication and collaboration, customer's access, managerial decision making, data management and knowledge management, since it helps to provide an effective means of organizational productivity and service delivery.

2.3 FACTORS INHIBITING ICT USE AND ADOPTION BY SMEs

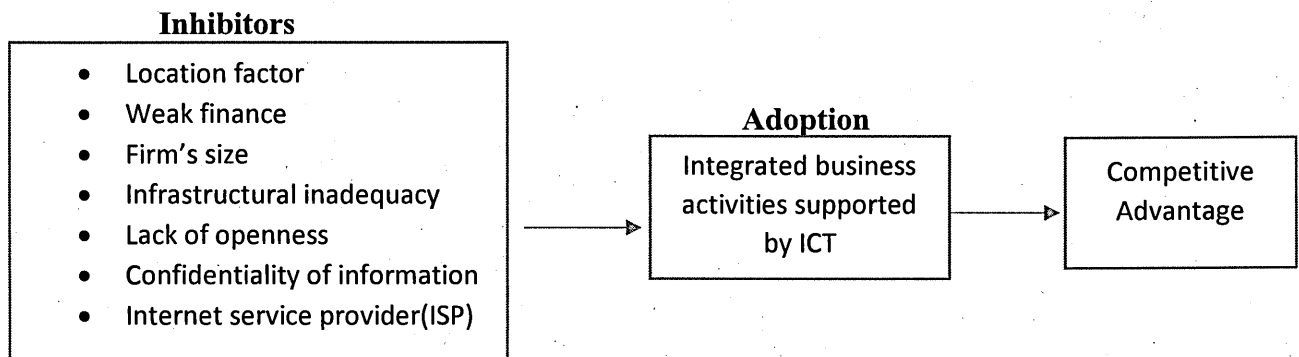
There are presently scarce literatures on the antecedents of firm's adoption and use of ICTs in the Nigerian context, though this is a country that is today ranked with exceptionally high internet adoption rate in Africa (Agwu and Murray, 2015). ICT adoption research has tremendously surged with interest spanning different systems and platforms in different contexts (Benbasat and Barki, 2007). The motivation for such studies as they relate to SMEs is critical because SMEs drive the informal sector of any economy (Scupola & Metaxiotis, 2009). Several studies (Houghton et al., 2003) assume that limited understanding of the adoption process exists often because the determinants of ICTs adoption and use are rarely understood clearly. Early studies on the adoption and use of ICTs by SMEs by Hamil and Gregory (1997) *proposed weak finance, lack of IT skills, and perceived risks as critical barriers.*

Consistent with these, other scholar's added lack of staff training, poor support from vendors, and unavailability of sound and proficient vendors (Caldeira and Ward, 2003); incompatibility and external pressure from customers, competitors, government, and suppliers. (Windrum and Berranger, 2003).

This research therefore, draws an insight from these studies to develop an inhibitor framework that spans: Location factor, weak finance and firm's size, infrastructural inadequacy, internet service provider, lack of openness and confidentiality of information. Aside the need to build, extend and complement literature; these elements have been

identified based on their significance on ICT uptakes, Nigeria's peculiarities and wide use by other scholars (Scupola, 2009; Voges & Pulakanam, 2011; Ongori & Migiro, 2010; Apulu, 2012).

Figure 2: Conceptual framework depicting the relationships.



2.4 The Benefits of ICT Use and Adoption by SMEs

Over the years, the use of ICTs by SMEs have been recognised as helping to bring about these significant national contributions which the United Nations (2007) identified to include: increasing productivity in the production process, enhancing and increasing the efficiency of internal business operations, connecting SMEs more easily and cheaply to external contacts whether locally or globally, improving inventory management systems, decreasing wastage in production processes, improving communication between different departments within a firm, improving accounting and budgeting practices, reducing communication costs and geographic barriers with global suppliers and clients. Also, Lal (2005) notes that web-enabled services increase the competitiveness of SMEs as ICT helps to change the relationship with customers by creating a stronger link between firms and clients. Golding et al (2008), highlight that local SMEs are able to participate in the digital economy via the use of ICT.

The European Commission (2008) states that ICT can assist SMEs to grow and become more innovative and hence suggests that the use of ICT in SMEs should be encouraged. It can help to improve technical and managerial skills making available e-business solutions for SMEs and addressing the high cost of ownership of ICT equipment. Furthermore, Love et al (2004) ascertain that the use of ICT provide many benefits to SMEs at different levels (operational, tactical, and strategic). In addition, Ongori (2009) infers that the adoption of ICT would change the way businesses operate in the present era of globalisation by changing business structures and increasing competition, thus creating competitive advantage for businesses and also changing business operations.

2.5 Nigerian Government ICT Support Initiatives for SMEs

According to (Odufuwa, 2014), ICT in Nigeria is currently administered under three main policy documents; the National Mass Communication Policy of 1990, the National Telecommunications Policy of 2000, and the National Policy for Information Technology 2010. These documents, as well as other disparate ICT policies and government pronouncements, will potentially be consolidated in terms of the new draft ICT Policy for Nigeria. Apulu and Ige (2011), policies and initiatives are meant to act as motivators for ICT usage and adoption in Nigeria, but are presently not in full support of SMEs in the country. Oyesanya (2005), suggest the need for restructuring of (NITDA) National information technology development agency for example, into an independent organization that would be capable of enhancing and fostering ICT growth and diffusion.

The developing use of Information and Communication Technologies in various areas has motivated the need for an IT or ICT policy in different countries. IT policies are built on reliable Human resources and infrastructures that constitute the fundamental tool and

means of assessing, planning, managing developmental change and for achieving sustainable growth (Adedoyin et al., 2008). In view of this, every progressive country need a national IT/ITC policy and an implementation strategy.

According to Apulu, (2012) many governments design programmes of assistance to enhance the developments of SMEs. These are usually in the areas of finance, extension and advisory services, training and provision of infrastructural facilities and so on. A number of international agencies have attempted to work towards the realisation of sustainable SME developments in Nigeria (Awe, 2015), especially in the area of access to institutional finance as it has remained a problem for the development of the Nigerian IT sub-sector. Also, the Nigerian government, in realisation of the vital contributions of SMEs to the attainment of the nation's economic development objectives, has created a number of schemes to support this sub-sector (Ayodeji & Balcioglu, 2010). Some of the schemes, policies and institutions, that have been established by the Nigerian government to support SMEs developments in Nigeria are geared towards improving accessibility, adoption of ICT and availability of credit to these SMEs (Apulu, 2012). Adewumi (2009) opined that apart from the unhelpful policies, there are unfortunately a number of other constraints that inhibit the growth and adoption ICTs by SMEs and entrepreneurship in Nigeria. These include;

- Lack of and/or poor access to credit facilities
- Unstable and largely uncondusive macro-economic environment heavily beclouded by uncertainties in the political and policies environments.
Poor infrastructure and lack of basic utilities - water, electricity, telecommunication etc.
- High cost of basic equipment due to low international value of the naira.
Near complete absence of advisory services
- Lack of support for the development of technical and managerial capabilities

- Lack of information on markets
- Lack of focused policies to promote and drive the patronage of local products by the government, its agencies, business organisations and citizens
- Widespread fraud that leaves little trust between persons and make simple small exchange of goods and services difficult and/or cumbersome.
- Widespread and all present corruption that makes the procurement of licenses, permits, goods and services from government agencies and even the payment of taxes and levies difficult without playing the game i.e. paying bribes and kickbacks.

According to Oghojafor et al, (2011) statistics show that Nigerians spend about N16.408 trillion annually on fuelling generators in the country. The breakdown shows that in the telecommunication sector N6.7 trillion is spent per annum to purchase diesel while filling stations spend N43.88 b, factories N191.085, banks N11.7, trillion and commercial enterprises N1.57 trillion. Even the federal government made a provision of N2b for purchase, fuelling and maintenance of generators for government offices in the 2009 budget.

In the same vain (MAN) manufacturers association of Nigeria, reported that electricity supply to industries had remained abysmally poor. “Industries in the Lagos branch areas had an average supply of 6.3 hrs per day and 17.30hrs outage in that first quarter of 2009. Private power generation accounted for 30 percent of cost of production and the inadequacy of supply is mainly responsible for the 35.24 percentage average capacity utilisation recorded in the same period (Oghojafor et al 2011).

Imohonlele, (2009), the major impact areas for manufacturers in terms of the performance of relevant government agencies and local governments include “numerous, multiple and

duplication of taxes and the unconventional drive for revenue generation”. For example, manufacturing companies individually have paid an average of “47 different taxes, levies, fees permits and licenses to the coffers of the state governments through its agencies, ministries, its development and local government areas. Alozie-Erondu (2009) reported that multiplicity of duties and levies are paid at Nigerian ports. For instance, the Nigerian customs services (NCS) alone collect “12 different levies and taxes, including import duty for the federal government and other agencies. In addition, there are 15 different agencies working at the ports. In Enugu, a female school leaver running a mobile telephone business in the form of an umbrella-table arrangement with a N100 daily profit was made to cough out N7,000 as taxes and levies to various organs of government ranging from local council to state government agencies (Anukwuji, 2009).

The Nigerian business environment is characterised by weak institutional and legal support systems, and policy inconsistencies resulting in several reversal. According to Momoh (2009), inconsistencies in policies, lack of protection of home industry due to globalisation and liberalisation policies have led to sharp rise in cost of production. These policy recesses have sent the government abandoning privatisation and the removal of certain items from the import prohibition lists. Equally, the lukewarm attitude of government toward the fight against corruption, lack of established and enforceable property and contracted rights, bureaucratic public sector, lack of capacity in key ministries and the resultant slow and poor policy implementation have negative consequence for business operation in Nigeria. It is reported that over 355 companies in Imo and Abia states were lost in the last few years due to poor policy implementation as reported by MAN Abia branch (Oghojafor et al 2011)

2.6 Theoretical Literature

Taylor (2015), a number of theories on technology adoption have been used in ICT research. The most widely used theories include the technology acceptance model (TAM) developed by Davis (1989), the theory of planned behaviour (TPB) proposed by Ajzen, (1985 & 1991), and the unified theory of acceptance and use of technology (UTAUT) conceptualised by Venkatesh, Morris, Davis, & Davis (2003). These theories explain individual's attitude towards ICTs, in their intentions to use, and their acceptance and adoption of ICTs (Chen, Li & Li 2011). Worthy of note however, is that there is no apparent agreement in the literature on or critical analysis of which theories (independently or in combination) best explain ICT theories and adoption (Grandon & Pearson, 2004). TPB and UTAUT are both criticized because they do not capture the complexity in which the actor's perspectives are forged and they take no account of the idiosyncrasies of individual small firms (Bradley, 2010).

At the level of the firm, the most popular theories on ICT adoption are, the diffusion of innovation theory (DOI) by (Rogers, 1995), and the technology acceptance model (TAM) by, (Davis, 1989). These theories have been used on their own in combination with other theories to explain ICT use and adoption by SMEs (Ghobakhlo, 2012). ICT adoption by SMEs differs from larger organisations and from countries because of their specific characteristics, such as resources constraints, and in many instances, limited access to technology and required skills and capabilities (Apulu & Latham, 2012). Understanding the theoretical models that have been used to explain ICT adoption by SMEs is therefore important to enable better understanding and appreciation of the key factors that have been found to determine the adoption of ICTs in developed and developing countries.

2.6.1 Diffusion of Innovation (DOI) theory

The Diffusion of Innovation theory is one theoretical model of ICT that has been found to be relevant for e-government (Rana et al. 2012). The theory was proposed by Rogers (1995) and is used in information system research to explain users' adoption of new technology. According to the theory, the rate of diffusion is affected by three factors: an innovation's relative advantage; compatibility; and complexity.

- Relative advantage is the degree to which an innovation is perceived to be better than the idea it supersedes (Rogers, 1995). In the e-government context, it is the degree to which citizens perceive interaction with government through e-government websites as superior to traditional methods of transaction (i.e. face-to-face encounters). In their study,
- Compatibility is the degree to which an innovation is perceived as being consistent with the existing values, past experiences, and needs of potential adopters (i.e. as being necessary for some activities in peoples' lives) (Rogers, 1995). In the e-government context, it is the way in which citizens perceive e-government as consistent with their work and lifestyle.
- Complexity is the degree to which an innovation is perceived as difficult to understand and use (Rogers, 1995). Van Slyke et al. (2004) found that complexity was a significant predictor of citizens' intention to purchase goods or services online.

2.6.2 Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) was proposed by Davis (1989) and is widely used to study user acceptance of technology. The model posits that if a technology is

relatively easy to use and helpful, it will have a positive influence on a person's attitudes and intention towards using such technology (Davis, 1989). According to the model, there are two determinants of an individual's attitudes towards usage intention, namely, perceived usefulness and perceived ease of use.

Several studies of innovation adoption have explored the role of TAM constructs in system acceptance (Walczucha et al., 2007). Some studies suggest that perceived usefulness and perceived ease of use alone explain a significant percentage of the variance in intention to use a system, while Benbasat and Barki (2007) suggest that perceived usefulness may be the most salient of all the adoption constructs. A few studies have extended the TAM by associating it with new variables or other theories to study e-government adoption.

Against this backdrop, this research appraises the motivators for and inhibitors to ICT use and adoption by SMEs in Nigeria. Among the theories, this study is built on two, the (TAM & DOI) models. The 'technology acceptance model' which has been described to stem from the theory of reasoned action and aims at predicting the attitude of potential users towards a new technology by focusing on the individual perception in evaluating costs and benefits (Olise et al, 2014). This can be related to the conceptual framework on the knowledge of the individual, number of employees, capital base, size/category, asset value and turnover, influence the ICT adoption process.

2.7 Empirical Literature

According to Olise et al, (2014) a number of related empirical and theoretical literatures have probed into the subject of ICT adoption, use and challenges in relation to SMEs with varying opinions and divergent views. Mutua & Wasike (2009) reviewed literature on ICT adoption and its impacts on firms in both developing and developed countries and analyses the determinants and effects of policies on their performance. By use of an additional

survey on ICT service providers, they unearth and provided challenges facing ICT providers in Kenya and how these challenges can be dealt with.

Ghobakhloo et al (2012) equally conducted a research which was aimed at providing a better and clearer understanding of IT adoption within SMEs by reviewing current IT literature. In their research, the review of literature includes theories, perspectives, empirical research and case studies related to IT use and adoption, in particular within SMEs from various data bases.

Alam and Noor (2009) examines the relationship between ICT adoption and its five factors which are perceived benefits, perceived cost, ICT knowledge, external pressure and government support. The results of this study show that three factors examined are significantly important to the adoption of ICT whereas perceived cost and external pressures are found to be insignificant in determining its adoption. With regards to Nigeria, Azeez et al (2012) investigated the threats to successful e-government implementation in the Nigerian Civil Service. Their study found out that lack of IT experts, poor IT infrastructure, corruption among government officials and poor electricity supply were some of the major impediments to e- government and IT adoption in Nigeria. In another study, Adeyemi et al (2014) examined the role of government and the private sector in facilitating information diffusion in Nigeria. The study found that the challenges of information diffusion in Nigeria include: lack of adequate infrastructure and connectivity; low proficiency in ICT among the population; and lack of adequate local content in ICT development. The study also found that the private sector does not sufficiently collaborate with the government in developing a comprehensive a comprehensive ICT policy for Nigeria.

Yemisi (2013) while developed countries have been able to take advantage of ICTs to build formidable National Information Infrastructure to increase their international competitiveness and economic dominance, developing countries are still struggling to join the bandwagon. In spite of the impressive report of the United Nations Conference on

Trade and Development that access to the internet and other ICTs such as mobile telephone has significantly increased globally, many people still lack access to ICTs (Muir & Oppenheim, 2012). This is particularly true of Africa where almost all the countries apart from South Africa are grossly deficient of infrastructural facilities. This study provides a greater understanding of government's and SMEs perception about ICT adoption in their activities.

According to (Budde Commission (2013): cited in Broadband Commission Report, (2013), 'Africa is the region with largest remaining growth potential in the world and it is estimated that the market in the telecom services will grow by 1.5 billion people, almost half the remaining market worldwide, by 2050' (ITU website, 2014). The report also indicated that much of the growth in fixed broadband subscriptions globally is located in developing economies. However, it is stated the overall fixed broadband penetration rates still remain low at 6.1% in developing countries, compared with 27.2% in industrialised nations in 2013 (Ibrahim, 2014).

In another study, Adeyemi et al (2014) examined the role of government and the private sector in facilitating information diffusion in Nigeria. The study found that the challenges of information diffusion in Nigeria include: lack of adequate infrastructure and connectivity; low proficiency in ICT among the population; and lack of adequate local content in ICT development. The study also found that the private sector does not sufficiently collaborate with the government in developing a comprehensive ICT policy for the country. Based on these studies, the relevant issue therefore becomes how some of these factors, in conjunction with theoretical models of innovation diffusion, can be used to explain e- government and ICT adoption by SMEs in Nigeria.

2.8 Conceptual Framework

ICT adoption research has tremendously surged with interest spanning different systems and platforms in different contexts (Benbasat and Barki, 2007). The motivation for such studies as they relate to SMEs is critical because SMEs drive the informal sector of any economy (Scupola, 2009). However, the adoption pattern of ICT in some parts of Africa is slower relative to other continents (Olise, 2014) and that of Nigeria when compared with many other economies, including (South Africa, India, Belgium and Finland) is rather very slow though steady and follows more of imitative approach.

Against this backdrop, this research appraises the motivators for and inhibitors to ICT use and adoption by SMEs in Nigeria. Among the theories of technology innovation models, this study is built on two, the (TAM & DOI) models. TAM has been described to stem from the theory of reasoned action and aims at predicting the attitude of potential users towards a new technology by focusing on individual perceptions in evaluating costs and benefits (Olise et al, 2014). According to (Taylor, 2015) the Diffusion of Innovation (DOI) theory posits that, individual characteristics, internal characteristics of organizational, and external characteristics of the organization are the important antecedents to organizational innovativeness (Rogers, 1995).

Based on the DOI theory, at the firm level, innovativeness is related to such independent variables as, Individual level or (leader) factors; Internal Organisational -or (firms) structural factors; and external factors of the organisation. Accordingly, individual factors here, describe leader's attitude towards change and perception. And the, internal factors of organisational structure include, ICT knowledge and expertise of staff, organisational culture, financial slack, firm size, and industry type. While, the external factors include the extent to which the organisation relates to and is affected by the external environment. Such factors include competitive pressures, policies, as well as the availability of and access to external support.

Relating these to the conceptual framework on knowledge of employee, the number of employees, capital base, market share/turnover, size, category of business and policies, influence the ICT adoption process by SMEs. It is on the basis of this framework that this research is developed. It is arguable to state that adopting a technology may inform the decision of the adopter to cut down the number of employees in the organisation in an attempt to minimise cost (Olise et al 2014). Again considering the capital and the market share/turnover of a firm if they are small will inhibit adoption and so does asset value. Accordingly, Ghobakhloo et al (2012), identified that limited financial resources compel SMEs to be cautious about their investment and capital spending and that financial resources are one of the most crucial requirement for success. While this study is restricted to the conceptual model, it is not ignorant of the many factors not captured in the framework, for example Ghobakhloo et al (2012) noted among others that due to the SMEs unique characteristics, their financial resources, technical and managerial resources, information resources accessibility, internal and external expertise, market accessibility, in-house IT knowledge and experience can hinder or simplify the adoption and use of ICT in SMEs.

2.8.1 Individual Level-Factors.

The entrepreneurs or top management constitute one of the key factors in the adoption of ICT by SMEs (Barba-Sanchez., et al 2007). A number of studies have shown that in SMEs, the role of CEOs/Top managers/Owners/Manager is central to the firm since their decision influences all the firm's operation (Fuller-love, 2006). In fact, the decision to adopt ICTs in SMEs is often determined by the entrepreneur or top management (Matlay & Addis, 2003). Top management often provides the forward motion for the initiation of technology

projects (Payton, 2000). This also relates to ICT adoption decisions from planning stage to the implementation, and post-implementation (Fuller-love, 2006).

Prior research revealed that a number of factors such as management attitude towards ICT, IT knowledge and experience, innovativeness and desire for growth impact the process of ICT adoption in SMEs (Lal, 2007). If the entrepreneur or CEO perceives that the benefits of ICT adoption outweigh its risks, then the business is more likely to adopt IT (Fuller-love, 2006). The CEO's ICT knowledge and experience has been found to affect ICT adoption in SMEs (Matlay & Addis, 2003).

2.8.2 Internal Organizational Factors (Firms-Level)

Numerous studies, carried out on the adoption of ICT within SMEs, have revealed a number of organizational factors that affect ICT adoption. These factors include, organizational culture, organizational change, business size, financial slack, firm size and industry type (Love et al, 2004).

- **Organizational Culture**

Jones & Leidner (2005), organisational culture affects SMEs adoption of ICT, and they found that success of ICT in organizations, as measured by user satisfaction and system usage is significantly affected by the types (human relations, open systems, internal processes, and rational goals) and dimensions (character, leadership, cohesion, emphases, and rewards) of organizational culture. Therefore, SMEs which possess more adaptable organizational cultures and are quite open to change will be more apt and prepared to accept ICT-related changes, which often result in ICT project success (Ghobakhloo.,et al 2012).

- Organizational Change

In recognizing the inevitability of change, Fried & Linss (2005) noted that it was important that firms develop differentiated capabilities (including those related to ICT) to proactively respond in an integrated manner to unanticipated change. Organizational change is a significant influencing factor on ICT adoption, (Fried & Linss , 2005).

- Financial Slack

In general, most SMEs, particularly those in developing countries, suffer from lack of financial resources or insufficient financial slack (Fuller-Love, 2006, and Taylor, 2014) and such SMEs have to be cautious about their ICT investments. Apulu & Latham (2009) argue that the availability of resources enhances the adoption of ICT within SMEs. Arendt (2008) noted that factors such as the cost of ICT equipment and networks software, and re-organization are barriers to ICT adoption in most SMEs.

- Firm Size

According to (Taylor,2015) prior literatures on ICT adoption in SMEs, firm size, defined by turnover and/or number of employees, is one of the most important determinants of ICT adoption. Poon (1999) indicated that the size of SMEs is correlated with ICT use, such that larger SMEs are more likely to adopt ICTs than smaller ones. The importance of firm size is partly because of its role as the source of a firm's capabilities (Mole et al., 2004). Another reason however is the fact that firm's resources including financial and human capital might be an approximation of firm size (Taylor, 2015).

2.8.3 External Level-Factors of the Organization.

- Competitive Pressure

For many firms, pressure to keep up with the competition by managing changes, improving customer services, and enhancing innovative abilities have forced SMEs to adopt ICTs (Mole et al., 2007). According to (De Burca et al., 2005) clients and suppliers pressure to adopt ICT is a significant factor influencing the level of ICT adoption and success.

- External ICT Support- *Consultants, Vendors and Government.*

According to (Ahuja et al., 2009), a significant positive relationship could be found between ICT adoption and government support, because of their size and lack of resources, SMEs are generally more dependent than other companies on external resources and supports. Indeed, government support for facilitating information transfers to SMEs has been increasing (Fink, 1998). Such transfers are being facilitated through networks such as small business associations. Public policies and macroeconomic costs (which relates to government actions) have also been found to influence ICT adoption (Olise et al, 2014) such that the more ICT support provided by government to SMEs, the more likely are such SMEs to adopt ICTs.

2.9 Summary/Gap in Literature

The literature review have provided insights and have also identified various motivators and inhibitors that influence and inhibits ICT adoption by SMEs from various standpoint and with varying literally perspectives and insightful empirical findings. This study fills the gap by appraising motivators and inhibitors of ICTs by SMEs in Nigeria which is an important linkage that is found missing in the literature in this part of Africa.

CHAPTER 3

RESEARCH METHODOLOGY

3.0 Introduction

This chapter discusses and describes the rationale behind the research methodology from the research design to choice of methods employed, the data collection techniques used. It discusses the suitability of the research design employed.

3.1 Research Design

This is going to be an exploratory and descriptive study as such; qualitative approach is deemed suitable. Due to the exploratory nature of the research, the research adopts an interpretivist epistemological stance which is consistent with the qualitative research mode chosen. According to Cresswell (2003), before explaining the detailed research

methodology it is important to explain the philosophical foundation of the research design. Research design is concerned with organising research activity, including the collection of data, in ways that are most likely to achieve the research aims. Easterby-Smith et al (2008) argue that understanding the philosophical issues of research design is of central importance for three reasons. First, knowledge of research design philosophy can enable the researcher to clarify what kind of evidence is required and how it is to be gathered, as well as providing answers to the basic questions being investigated in the research. Second, this knowledge can help the researcher to recognise which research designs will work and which will not. Thirdly, the knowledge can help the researcher to identify, and even create research designs which may be beyond the researcher's experience.

The research philosophy represents the researcher's guiding assumptions about the nature of the world (Easterby-Smith et al, 2008). *Epistemology* concerns what constitutes an acceptable knowledge in a field of study (Sanders et al., 2009). While *Interpretivism* is also referred to as social constructionism and is described as a research philosophy that views the social world as socially constructed (Orange, 2010). Denzin & Lincoln (1994) states that the interpretivist epistemological stance emphasises the need to understand the social world through examination of the interpretation of that world by its participants. Easterby-Smith et al (2002) suggest that a researcher must determine the research design at an early stage of the research project. It is a strategic choice and must play a central role in critical activities which have significant effects on the research as a whole. Adopting the quantitative (positivist) paradigm leads the researcher to employ the methodologies of experimental studies, longitudinal studies, cross-sectional studies, and survey.

Taylor and Bogdan (1998) also state that, 'interpretivists think it is necessary to capture the process of human interpretation, where qualitative research is a better method'. Moreover, Collis and Hussey (2003) indicate that, interpretivism requires a qualitative approach, which refers back to 'How' and 'What' research questions. In addition, Walsham (1995)

states that the interpretive research methods in IT are aimed at producing an understanding of both the context of IS and the process. The interpretivist approach is adopted since more explorations are required on the research topic/questions, in order to put forward recommendations that will assist in dealing with key motivating/inhibiting factors associated with ICT use and adoption by SMEs in Nigeria. Besides, the research is not guided by theory that has to be tested objectively during the research process, rather it is aimed at identifying and understanding problems confronting Nigerian SMEs, and further providing recommendations on how to solve them based on empirical data.

3.2 Research Approach and Rational

Bell (2005) suggests a need for the research approach to be effective in order to resolve the problem. In the case of this research dissertation, research in the area of ICT adoption and use by SMEs is still under-researched in developing countries and Nigeria is no exception. Data collection was carried out through a wide variety of techniques including documentation, observations, and interviews, in order to identify and allow a detailed understanding of the research topic.

Guest et al (2006), “ although numerous works we reviewed explain how to select participants or provide readers with factors to consider when determining non probabilistic sample sizes, we found only seven sources that provided guidelines for actual sample sizes”. Bernard (2000:178) observed that most ethnographic studies are based on thirty-sixty interviews, while Bertaux (1981) argued that fifteen is the smallest acceptable sample size in qualitative research. Morse (1994:225) outlined more detailed guidelines. She recommended at least six participants for phenomenological studies. Creswell’s (1998) ranges are a little different. He recommended between five and twenty-five interviews for a phenomenological study and twenty-thirty for a grounded theory study. Kuzel (1992:41) tied his recommendations to sample heterogeneity and research objectives, recommending six to eight interviews for a homogeneous sample and twelve to twenty data sources when looking for disconfirming evidence or trying to achieve maximum variation. None of these

works present evidence for their recommendations, they suggest a pre-meditated approach that is not wholly congruent with the principles of qualitative research (Guest et al, 2006). This therefore justifies the sample size of this research.

3.3 Methods of Data Collection

In general, this study used information from relevant primary and secondary sources of data.

3.3.1 Primary Data

This research uses primary data as the main data component. Primary data was gathered through structured interviews and field notes. A total of 23(SMES) were contacted by sending formal introductory letters/notifications to owners/managers, Managing Directors, Heads of departments across different sectors in Nigeria. But unfortunately only (15) of the respondents which comprised SMEs across a wide range of business sectors cooperated and responded to the letters. Of this number also, (8) potential SMEs were rejected as they were not ready to share and disclose the detailed in-depth discussion of their firm's ICT operations. However, interviews were then finally conducted with the remaining (7) based on their type, size/ No of employees and turnover. A number of issues can affect sample size in a qualitative research; however, the guiding principle should be the concept of saturation (Mason, 2010). Samples for qualitative studies are generally much smaller than those used in quantitative studies (Ritchie et al, 2003), there is a point of diminishing return to a qualitative sample-as the study goes on more data does not necessarily lead to more information. This is because one occurrence of a piece of data, or a code, is all that is necessary to ensure that it becomes part of the analysis framework (Ritchie et al, 2003).

3.3.2 Semi-Structured Interviews

According to Boyce and Neal (2006), interviews are useful when the researcher wants detailed information about a person's thoughts and behaviours or wants to explore new issues in depth. The primary advantage of interviews is that they provide much more detailed information than is available through other data collection methods, such as surveys.

This study aimed to appraise the motivators and inhibitors to the use and adoption of ICT by SMEs in Nigeria. The interviews began with the researcher introducing himself and also giving a brief description of the objectives of the study. Questions related to the background details of each participants as well as that of the firms were among the first set of questions asked. Also some questions were focused on the types of software applications that were in use in the different SMEs (e.g. spreadsheet, databases, software used for internet, email and so on) and the use of other ICT applications amongst others. A section of the interview concentrated on questions regarding ICT adoption and utilization, such as the benefits of the use of ICTs, and then the effects of policies on ICT use and adoption by SMEs amongst others, so as to obtain respondent's views on the extent to which a number of factors inhibits or motivate the adoption and effective utilization of ICT applications. Again, a section of the interview determine whether or not the SMEs/firms were willing to adopt more sophisticated and modern ICT applications.

The interview questions were open-ended, hence respondents were given the opportunity to offer their views in their own terms. According to Bells (1993), semi-structured interviews with open-ended questions assist in collecting field data regarding organizational issues in ICT. The use of semi-structured interviews not only assisted in presenting the participant's perceptions of the issues under investigation, but also provided an opportunity for the interviewer to ask for further clarification and elaboration of answers. Bells (1993) affirms that the use of semi-structured interviews enables the

collection of rich data as they are regarded as a useful method of encouraging the discussion of issues that may have otherwise not have been identified in the literature.

The interviews were conducted with 23 owners-managers of selected SMEs, IT managers/personnel. And 5 government ministries/parastatals were visited to obtain documents and information's. Since multiple interviews can help to achieve a broader perspective and further assist in achieving data triangulation (Brun, 2006). This also helped to provide a holistic view of the research topic. Because the respondents were selected based on the belief that they were familiar with the use of ICT and the also have an idea of policies on IT, and thus were capable of competently responding to questions in the interview checklist.

The interviews were tape-recorded and transcribed afterwards. Recording the interviews did not present any major challenges from the participants as they were asked to indicate their willingness to participate in the exercise by signing and returning a consent form. According to Miles and Huberman (1994) tape recording of interviews is often suggested as a means of providing a complete description of interviews, responses and comments. This enabled the researcher to clarify the information acquired and also to decide what information was required in the write up.

3.3.3 Secondary Data Collection Methods

Secondary sources consulted include published articles in academic journals and reports, policy documents published by international organisations and the Nigerian government on its IT policy initiatives. Other documents consulted include; United Nations E-Government Survey (2012-2014), Federal Government of Nigeria NDICT final draft ITC Policy report 2014, Nigerian Communication Commission Data Report 2014, Annual financial Report of

Bank of Industry 2014, Ministry of Science and Technology Mission statement and Report. In addition to so many websites of private and government institutions. This approach is particularly suited to 'unpacking' phenomenon of interest because it encompasses a diverse set of 'interpretive techniques' that can provide a deeper and richer understanding of the issue under investigation (Sapsford, 2006). Bells (2002) equally mention this approach is appropriate when the phenomenon under investigation is context-dependent and when it seem necessary to enrich and reconfigure the elements derived from literature review to define a model. The research seeks to appraise the motivators and inhibitors to ICT use by SMEs in Nigeria, especially in cities like Lagos, Warri and Abuja. These cities are selected for the research because they are considered to be commercial nerve centres/cities in Nigeria, unique demographic and contribution to national Gross Domestic Product (GDP). This documentary evidence assisted the researcher as a rich source of additional evidence to the interview conversation with the participants.

3.4 Ethical Consideration

The data for this study which was wholly based in Nigeria, was collected over a period of six weeks between May and June 2015. Due to the nature of the research, data gathering was always likely to include sensitive information of the kind which requires ethical

consideration. Cognisance of the ethical requirements guiding research at the Open University, high and strict ethical principles were observed at each stage of the study in order to preserve the reliability and integrity of the study and the researcher maintained professionalism at every stage of the research. The researcher adhered to all The Open University's Human Research Ethics Committee (HREC) ethical guidelines by collaborating with the supervisors. Ethical approval was sought from the Human Research Ethics Committee via the OU website; www.open.ac.uk/research/ethics/human.shtml , and a favourable response was granted. See details as attached in appendix C.

3.5 Limitations of the Research.

There can be no research without limitations. There were several limitations to this research. First, the research was conducted as part of a one-year *Masters in Research degree* programme. The number of participants (Sample size) were few and limited due to time and logistic constraints. Another limitation of the research is the fact that the collection of empirical data depended mainly on the level of access that was granted to the researcher. Therefore, the participants could have hidden some vital information from the researcher, which could possibly have improved the research outcome, without the researcher's knowledge.

The study was limited also to SMEs in selected commercial cities of Lagos, Abuja and Port Harcourt, the most commercial cities in Nigeria. It is the researcher's belief that, nevertheless, some of the research findings are likely to be similar to those in other parts of the Nigeria. However, the present research findings cannot be generalised without additional research. Similarly, despite the fact that issues concerning SMEs in Nigeria are homogenous, it is still difficult to generalise Nigeria's results to other developing countries of the world without conducting additional research.

However, this study benefited from the use of interviews, filed notes and documentary data to enrich the study.

CHAPTER 4

METHOD OF DATA ANALYSIS

4.0 Introduction

Data analysis is the process of bringing order, structure and meaning to the mass of collected data (Vos et al., 2002). A structured literature review was conducted in order to provide the academic foundations of the research, which is mainly to appraise the motivators of and inhibitors to ICT use and adoption by SMEs in Nigeria. The data analysis began with a full word verbatim transcription of interview data into textual data for easy interpretation. The researcher manually transcribed the interviews recording so as to satisfactorily be acquainted with the data. This method was chosen because it allowed the researcher to identify, analyse and report patterns or themes within the interview and field note data collected (Braun, 2006). In addition, thematic analysis does not require detailed theoretical and technological knowledge of approaches such as grounded theory and discourse analysis, it can offer a more accessible form of analysis, particularly for those with limited experience in qualitative research (Braun, 2006).

Data were coded into different themes, in order to help analyse the data obtained from the interviews. According to Ryan (2000), identifying themes is an important step before analysis. According to Holliday (2002), the themes can come from what the researcher sees during data collection and the researcher's mind through the process of the research. In this research themes were identified by looking across the entire data set and identifying a repeated pattern of responses, as suggested by Braun (2006). For this study, the themes will be developed from the focus of the study, the conceptual understanding of the researcher, guided by the interview checklist used for the primary data collection.

The broad focus is to appraise the motivators for and the inhibitors to the use of ICT by SMEs in Nigeria. Some of the other themes coming from this include:

1. Ascertaining the individual current level of knowledge and experience - The aim will be to establish the current status of ICT usage/skills among (individuals) within the SMEs and to establish whether basic or sophisticated technologies are in use.

2. Looking at management attitude and decision making process - The aim will be to gain an understanding of the ICT decision making process among (firms) within the SMEs. Who makes the decisions and who also maintains the ICT infrastructures?

3. Innovativeness and desire for growth- The aim will be to appreciate the important role ICT can play in creating business opportunities and combat pressures from competition.

4. Cost-Benefit Analysis- The aim is to weigh the benefits of ICT against risk and cost.

5. Determining ICT barriers/drivers - The aim will be to establish the internal and external barriers/drivers that influence SMEs from further adopting or implementing ICT applications or systems in their various organisations.

For analyses of the interviews data, three main steps of data analysis, as suggested by Miles and Huberman (1994) will be employed. These are: data reduction, data display and conclusion drawing/verification.

4.1 Overview of Interview Participants Background/Profile

. Consent forms were given to every participants that was interviewed and details of the research explained to them, assuring them of their anonymity of any information provided.

For the purpose of anonymity the names of the firms have been disguised as FA, FB, FC, FD, FE, FF, and FG. The interview participants assisted in providing an in-depth understanding of fundamental issues pertaining to the research.

Table 4. FIRMS/SMEs

Firms	Type of Business	No of Employees	Years in Business	Annual Turnover (N)Million
A	Restaurant	18(Small)	7	N14.2
B	Online Retailing	40(Small)	2	N21
C	Transportation	84(Medium)	14	N50
D	Telecommunications	37(Small)	5	N25.5
E	Manufacturing	85(Medium)	85	N90
F	Investments	30(Small)	9	N27
G	Advertising	33(Small)	18	N45

CHAPTER 5

DATA INTERPRETATION

5.0 Introduction

Consistent with its objectives, the research reports the live experiences with individuals, employees, managers, and government officials in the Nigerian business environment and context. Other themes related to influence on the use and adoption of ICT by SMEs in Nigeria such as; management and acquisition of ICT, management perception of ICT, competitive pressure, systems openness, external support, future direction of ICT use, impact and evaluation of ICT, challenges and benefits etc., emerged from the interviews, however because of the scope of the scope of this study, the researcher narrowed the themes to be presented in the research to fit the research objectives. Therefore, those themes which are not directly related to answer the research questions are not part of this report.

5.1 Motivators for ICT Use & Adoption by SMEs.

The respondents were asked to comment on the drivers/motivators behind their decisions to use and adopt ICT. The participants gave a wide range of reasons that led to their decisions to adopt ICT.

5.1.1 Information Management & Attitude

A firm identified the need for information availability as a driver for the use and adoption of some forms of ICT in their firm. According to one respondent:

".....Presently, the extensive use of ICT is changing the way people and companies work. We [the SMEs] use ICT to obtain and manage information especially with regards to our

[firms] products and services...There is the need for information availability and positive-management attitude towards ICT usage at all times” (IT Mgr-FB)

Similarly, another respondent from the same firm comments:

“With the current developments in the area of technology, it is important to adapt to the new environment as company..... There is need for information management at all times and for us [as a company] to remain focused and resolute in our efforts to remain competitive. So we have decided to embrace and adopt ICT” (M/D-FB).

Two SMEs (FB & FD) reasons for adopting ICT are mainly for strategic management and communicating with clients. FB for example, decided to invest in a new on-line computer system because the company realised communicating with suppliers all over the world was usually done by post which causes delays. The company understood the need to build an effective communication channels.

5.1.2 ICT Knowledge & Skill

The role of CEOs/Managers-Owners/Entrepreneurs is central to a firm, since their knowledge, experience, skills and decisions influences the firm operation.

Efficiency and speed was also identified as a driver and motivator for ICT adoption. Five SMEs (FB, FC, FD, FF, and FG) all decided to adopt ICT in order for them to become efficient in their business activities. ICT enables easy analysis of data and it brings about development.

Company G comments that:

“ICT makes our job easy and efficient, it helps our firm to retrieve and send information quick. Before now, we usually searched our shelves for documents and files, which were always time wasting and consuming. But with ICT, customers records are now stored in

the computer, making information retrieval less stress-free. Also, we no longer embark on travels to deliver vital documents to our clients or spend money via courier services, documents are now sent via emails with the help of the internet” (Manager FG)

Another respondent comments that; *“people require timely and accurate information nowadays to enable them make immediate decisions. Therefore, the company decided to use some form of ICT, such as the internet to stay competitive” (FG-IT Mgr).*

“Ever since we started using the accounting package, all we need to do is to key in the right information and it gives us the right financial statement”. (FB-Head of IT).

5.1.3 Innovativeness & Competitive Advantage

The need to have some form of competitive advantage in an industry was identified as by a respondent as their main reason for adopting and deploying ICT .This was described by a Branch-Head below:

“.....Information and communication Technologies (ICTs) possess the potential to contribute significantly to economic growth. Given their many benefits, we are now adopting ICTs to support our competitiveness, skills, productivity and profitability in this our deregulated and globalised economy.

Also, for a firm to maintain its competitive advantage and have value, it must keep pace with what is happening in the world and must be innovative. The world is now a global village” (FD-M/D).

5.1.4 Organisational Culture/Change

Based on the respondent’s experiences and their challenges with the use of ICT, they were asked if they would like to further adopt more advanced and sophisticated ICT applications in the future. All the respondent’s indicated their intention to embrace change notwithstanding the challenges they face.

A respondent from FB comments:

“This is a medium sized company which wants to expand to a large scale company. But this company cannot reach that level until we [firm] improve and expand our ICT infrastructures. There is the need for us as a company to have a sophisticated IT system in place that can stand the test of time and present day industrial revolution” (MD/FB)

5.1.5 Industry Type/Firm Size

Also, a respondent thought it was necessary to adopt ICT due to the nature of their business. As a telecom firm, they need to position themselves and rely on latest technology in order to successfully compete with their competitors in the industry. According to the (FD) Managing Director:

“However, not all SMEs need to use ICT to the same degree of complexities. The first ICT tool that most SMEs adopt is having basic communications with a fixed line or mobile phone, whichever is more economical or most convenient for your business. Like any other firm, an SME decides which type of ICT products to adopt based on the concrete benefits they can bring to its core business, the ICT capacity of its employees, and financial resources available. But for a firm like ours, we need new advanced/sophisticated communication technologies which are more complex and very expensive to install and manage”.

“.....Also, being an IT professional was an added advantage. The company did not get any major support or grant from the government. The company has to initiate and come up with new ideas and strategies that will guarantee growth and survival” (FD-IT Manager)

5.2 Inhibitors to ICT Adoption by SMEs

Participants were requested to comment on the disadvantages or setbacks they have experienced with regards to adopting ICT in their various companies.

5.2.1 Location Factor

The managing director of FE states that:

“.....Lack of infrastructure, poor service from internet service providers (ISP), lack of IT education, and lack of government support among others are some of the major hindrance to ICT use and adoption among SMEs in the rural area in Nigeria”.(MD-FE).

Also, in FB and FD, issues regarding manpower, skilled labour, infrastructures in rural areas were raised, for example, the IT manager for FB, said they have been running on generator for more than two months now to keep them in business and build customers trust and confidence, but this is at a cost and burden to the company.

5.2.2 Internet Service Providers (ISP)

FD's general manager stated that the company had no regret adopting and using ICT, because they cannot operate without IT, but the activities of ISP are frustrating their efforts and operations. 'Also, most of the ISPs are located in the urban areas/cities, this poses a major challenge and difficulties for SMEs located in the rural areas to access them in terms of better service delivery.'(MD-FD)

“Poor service provided by ISP providers is estimated to be about 65%. The poor services provided by ISPs in Nigeria possess a great hindrance to our effective utilization of ICT due to low bandwidths characterised by very low speed, high subscription costs, together with frequent disconnections of the networks”. (IT-OFFICER/FD)

Also....."Hence, in order to create an enabling environment for the utilization of ICT in Nigeria by us the [SMEs], there is the need by government to put some form of policies and initiatives in place, which will assist in addressing some of these challenges, which may include having the right telecommunication policies and infrastructures in place to assist SMEs located in rural areas to support stable internet connectivity" (FD-G/M).

5.2.3 Lack of Openness/Advanced Software Packages

In FG, FB, FE and FA, issues relating to modern and new software packages were highlighted, for example the resort manager of FA complained bitterly about the frustration and difficulties of using certain software:

"I think, lack of proper education and illiteracy, technical skills/knowledge accounts as some of the reasons and factors that hinders our inability [SMEs] to adopt new and complex IT software. ICT is growing by seconds and it is good that new software should be developed in such a way that people like us [Bar-manager] who are not IT experts can easily understand and operate By using the manual of the software without too much supervision" (FA-Resort Manager).

5.2.4 Financial Challenges/Weak Finance

In general, most SMEs, particularly those in developing economies and Nigeria in particular, suffer from lack of financial resources and constraints, and such they have to be very careful about their IT investments.

All the firms (FA, FB, FC, FD, FE, FF and FG) identified inflation, price of equipment's, return on investment and running cost associated with power generation and supply as a major challenge and hindrance facing SMEs in Nigeria.

Participants from (FE):

“We have to most of the time depend entirely on our own generator for source of power supply to run our equipment’s and machines in our factory... the high cost of diesel and petrol to power the generators are equally high and most times scarce” (MD-FE & Factory Manager)

Similarly, another respondent comments:

“Another issue is high cost of new equipment’s, software and installations with the attendant government import duties and tariffs... most of us [SMEs] cannot cope and afford them. Again ICT infrastructures are energy consuming and sensitive to handle and manage to avoid damage and loss” (MD-FD).

5.2.5 Infrastructural Inadequacies

Participants were requested to comment on the level of infrastructures in the country as it affects their business and operations. All the firms were unanimous in their responses.

“Lack of infrastructural facilities is a major problem and barrier affecting our effective utilisation of ICT in this firm. This is as a result of the insufficient provision of some major infrastructures needed for the proper implementation of ICT, such as bad roads, network backbone, poor internet connectivity, power supply, lack of fixed telephone etc”.(MD-FG).

5.3 Factors Affecting the Effective Utilisation of ICT BY SMEs

Interviews which were conducted in the various SMEs enabled the researcher to elicit respondents’ views and experiences regarding the use of ICT. Every participant was given the opportunity to comment on the use of ICT in their respective firm. Although all the SMEs highlighted some positive impacts associated with the utilisation of ICT, and with

the government backbone infrastructure improving significantly over the last decade, nevertheless the participants still identified some problems that have continually hindered them from effectively using ICT in Nigeria.

5.3.1 Electricity/Power Challenges

Seven SMEs (FA, FB, FC, FD, FE, FF & FG) all identified the lack of steady power supply as a major challenge to the effective utilisation of ICT in their individual firms.

According to a respondent:

“.....Due to frequent power outage and disruptions we [firm] are unable to use our [company] computers in most cases.....There are times and days when [the company] do not even open to the public for business” (IT MGR-FA).

Also, another respondent comments:

“The major setback with respect to effective utilisation of ICT is the continuous power outage from our major source of power supply, which adversely affect us [the company] as an SME. The issue of lack power and energy is a major challenge to SME growth in Nigeria” (Admin MGR-FE).

5.3.2 Cost/Finance

Three SMEs (FA, FD & FF) identified capital, high cost of equipment's and cost of finance as major hindrance to effective use of ICT

Similarly, the other respondent comments:

“Cost and finance are big issues.....The high cost of fuel is seriously affecting our business we consume a lot of [diesel] due to lack of electricity....and diesel is very expensive. Again high cost of borrowing and interest rate affects our profit level” (MD-FF).

Obviously, the comments from the respondents suggest that SMEs are struggling with high running cost which in turn may hinder them from effectively utilising ICT.

5.3.3 Lack of focused Policies/Regulations

Three SMEs (FB, FD & FE) identified problems with government policies and regulations and also the lack of support from the government as factors militating against their effective utilisation of ICT in their respective SMEs. According to one respondent:

“The lack of appropriate government policies is a major factor and issue affecting us [SMEs]. If the government decides to create and formulate an enabling ICT friendly policy/environment, it will encourage many firms like ours [SMEs] to increase our use of ICT systems in our daily operations and business activities. But if the government do not provide the enabling environment, it becomes difficult for many SMEs to adopt ICT....The government should leave up to expectation”.....(MD-FC).

5.3.4 Corruption

“Doing business in Nigeria is not an easy task. Too many taxes and levies collectors, e.g. Local council tax, state tax, federal tax, police levy, custom levy etc....they all extort money from us [SMEs] illegally. They arrest our drivers mainly to collect tips. Corruption causes a lot of delays and setbacks in our [firm] businesses”(MD-FC).

“Corruption....In Nigeria today, there are so many factors affecting the use and adoption of ICT. We [SMEs] need to tackle and fight the issues of bribery and corruption, especially the high rate of cybercrimes. When the culprits are caught, they are not prosecuted, they bribe their way out of the law enforcement agencies. We [SMEs] need to acquire sophisticated/advance software to protect our business, but this is expensive which many SMEs cannot afford”(MD-FB).

Themes	Description	Codes
Drivers/Motivators	Identifies drivers, motivators and Reasons for the use and adoption of ICT by individuals and SMEs in Nigeria	1.DM Information Management/Attitude 2.DM ICT Knowledge and Experience 3.DM Innovativeness/Skills 4.DM Organisational culture/change 5.DM Industry Type/Firm Size
Inhibitors	Provides reasons and justification For non-adoption/use of ICT among Individuals and SMEs in Nigeria	6.IH Location Factor 9.IH Internet Service Providers (ISP) 10 IH Lack of Openness/Software 11. IH Financial Challenges/Weak Finance 12. IH Infrastructural Inadequacies
Factors	Provides Information about the factors affecting the effective utilisation of ICT by Nigerian SMEs.	13.FA Electricity/Power Challenges 14.FA Cost/Finance 15.FA Lack of focused government Policy 16.FA Corruption
Government Institutions	Provides Information about the extent to which government policies and strategies influence ICT adoption by SMEs.	17.GP NCC Data Report, 2013 18.GP NITDA (Final-Draft Policy, 2015) 19.GP MSMEDF-Policy Guidelines, 2014 20.GP Central Bank of Nigeria, 2014

5.4 Summary of Research Findings

A summary of the research findings from the interviews is given in the tables below:

Table 5.2

Drivers/Motivators	Firms
Information Management & Attitude	B, and D
ICT Knowledge and Experience	B, C, D, F and G
Innovativeness/Skills	D
Organisational Culture & Change	B
Industry Type/Firm Size	B and D

Table 5.3

Inhibitors	Firms
Location Factor	B, D, E
Internet Service Providers	D
Lack of Openness/Software	A, B, E & G
Financial Challenges/Weak Finance	A, B, C, D, E, F & G
Infrastructural Inadequacies	A,B, C, D, E & G

Table 5.4

Factors	Firms
Electricity/Power Challenges	A, B, C, D, E, F & G
Cost/Finance	A, D, F
Lack of Focused government Policies	B, C, D & E
Corruption	B & C

Table 5.5

Government Policies	Institutions
NCC Data Report, 2013	National Communication Commissions
NITDA (Final Draft Policy, 2015)	Nigerian Information Technology Development Agency
MSMEDF-Policy Guidelines, 2014	Micro, Small and Medium Enterprises Development Agency
CBN Journal Report	Central Bank of Nigeria

This chapter has presented the findings of the data obtained from the interviews conducted among the 7 SMEs, employees, managers-owners and government institutions and identified driver and factors motivating and inhibiting the adoption of ICT, as well as the effects of government policies on ICT use by SMEs in Nigeria. The research further identified factors affecting the effective utilisation of ICT usage and adoption by SMEs in Nigeria. Recommendations and advice were suggested by a number of participants who took part in the interviews in order to assist SMEs that are yet to adopt ICT to start doing so, because the world is now a global village.

CHAPTER 6

SUMMARY OF FINDINGS AND CONCLUSIONS

6.0 Introduction

This purpose of this chapter is to summarise the research findings in relation to the research objectives. This research has played a role in appraising the motivators for and inhibitors to ICT use and adoption of by SMEs in Nigeria. The chapter discusses the findings presented in chapter 5 and link them with the literature review. Insights from the interviews have assisted in providing a robust view on issues relating to the subject under consideration. It will also present the conclusions arrived at in relation to the research questions established in the introductory chapter of this research.

6.1 Summary of Findings

According to the World Economic Forum (2010), governments around the world are recognising the importance of ICTs to their economic development. In this regard, Tanzania has provided tax relief on hardware to SMEs; the Venezuelan Government has provided national government grant schemes; the Governments of Ghana and India have established donor schemes to promote ICT adoption; and the Philippine and Canadian Governments have provided training in website development for SMEs (Mathews, 2007). The key objective of the research was to identify and recommend strategies that could assist in stimulating or increase the utilisation and adoption of ICT by SMEs, thereby resolving some of the challenges faced by these SMEs, with respect to the motivating and inhibiting factors.

The research found out that some factors that affect ICT adoption/use amongst Nigerian SMEs are similar to those identified in existing literature, whereas others are based

specifically on the Nigerian context. Although, from the analyses of literatures, an overall understanding on ICT adoption by individuals and SMEs was gained.

It is evident from the findings of this study that ICT, especially the internet is not yet a universally accessible resource in developing countries in general and Nigeria in particular. It was discovered that drivers/motivators to ICT use and adoption include; information management, attitude, ICT knowledge/skills, innovativeness, organisational culture/change and industry type/size. While the inhibitors include; location factor, internet service providers, lack of openness, sophisticated software, financial challenges and infrastructural inadequacies. Nigeria still lacks the necessary policies and infrastructures that would enable widespread usage and adoption ICT. Despite the dearth of infrastructures in the Nigerian context, this research contends that ICT has enormous potential as a tool for economic and social development. While some SMEs have joined the bandwagon as evidenced by the findings of the research, the study findings further revealed that the extent of adoption is hampered by a range of other factors including lack of focused government policy framework, and ignorance on the part of possible users about the enormous benefits and potentials of ICT adoption and usage.

The poor level of education also among SMEs operators combine to form the formidable barriers to ICT adoption in Nigeria. It is also of interest to note that despite these perceived barriers presented above, it appears that ICT can indeed be relevant to the Nigerian SMEs as it has been adopted by most large organisations. This study also discovered that ICT can be an extremely beneficial tool among Nigerian SMEs provided that the identified problems and barriers are dealt with by the appropriate and relevant bodies and the government demonstrate that they have the political will to put in place appropriate and right policies that will address these inhibitors that currently stand in the way of widespread adoption. The findings of this research have therefore provided a better understanding of the drivers and benefits of ICT adoption and use among SMEs in Nigeria.

The second research question addressed the issue of cost/benefit analysis, and the current level of ICT adoption among Nigerian SMEs. The research found that the level of ICT usage has improved over the years, although all the firms selected for the interview utilise or use some form of basic ICT, like desktop computers, laptops, handheld devices etc. The usage of sophisticated ICT applications/systems among SMEs is still generally low.

This is as result of the following factors; Lack of electricity and power challenges, high cost of equipment's and finance, lack of good policies, corruption etc.

The majority of the ICT users mainly utilise the traditional computer based technologies such as standard office applications and basic tools such as, telephone, fax, and Microsoft office software. The internet is an exception and optional as many Nigerian SMEs do not have access to the internet as a result of the high cost and poor services offered by the different ISPs in the country. Hence, it is concluded that Nigerian SMEs are not effectively utilising the internet, due to financial challenges and cost.

The third research question is intended to determine how the use and adoption of ICT by Nigerian SMEs can be improved. The researcher observed that many policies and strategies identified that can bring about an increase and influence in the areas of IT use, lies with the government and other stakeholders like the ISPs. ICT has been acknowledged to be one of the most critical tools underpinning socio economic development, and its global importance has led to many countries transforming their ICT sector. Nigeria has embarked on this path in 2011, by creating the Ministry of Communication Technology to ensure a better coordination of ICT activities, policies and development in Nigeria. The National Information and Communication Technology (ICT) final draft Policy of 2012 lays out the inputs required to strengthen all productive sectors and ultimately transform Nigeria into a knowledge based and globally competitive country. This draft policy has led to the deregulation of the telecom sector in Nigeria with major structural changes and growth in 2014 that has positively impacted on the business, economic and social lives of Nigerians. But relying on information from the literature review and data analysis, this has

not affected or reflected positively on the use and adoption of ICT by Nigerian SMEs. Therefore, there is the need for serious overhaul of policies direction and framework to address the major challenges facing the IT sector.

6.2 Limitations and Future Directions.

Similar to any management science research, this study also suffers from some limitations. There were several limitations, the number of participants was limited due to time, the population and samples employed in this research were only SMEs selected randomly. Analysis were done only on a limited set of data and the research would have benefited from analysis of a wider spectrum of participants all over the country. Data was collected from interviews, other sources would have maximised the research findings and made the arguments stronger.

This study was limited to only 23 SMEs, hence further research involving more case studies will be beneficial.

6.3 Conclusion and Recommendations

This research has contributed to the existing body of literature, knowledge and the field of ICT in business, by critically appraising the issues and challenges of ICT adoption and use by SMEs in developing countries, with particular reference to Nigeria. The results of this study highlights the significance of the two theoretical models of innovation diffusion (Diffusion of Innovation theory and Technology of Acceptance Model). The DOI theory provides an overarching framework to study ICT adoption by SMEs, because it encompasses innovations, adoption decision making processes and the interpersonal context in which ICT adoption takes place. However, while the theory appears to provide a useful framework, it does not adequately provide a lens through which to examine the complex social and relational dimensions, such as family and business networks which

affect the adoption of ICTs by SMEs. Few studies have extended the TAM by associating it with new variables or other theories to study ICT adoption.

The findings suggest that Nigerian SMEs have embraced ICT to a limited extent, particularly for business promotion. However, only a small proportion of SMEs appear to have understood the wider importance ICT adoption. Those SMEs that have attempted to embrace ICT have been hampered by general national infrastructural inadequacies. This research has also highlighted a lack of proper government policy initiatives, formulation and implementation to support ICT adoption by SMEs. The challenges for government and its agencies therefore is to show more commitment in terms of providing the enabling and conducive environment for policy direction and implementation. In addition, Nigerian SMEs have to consider the drivers, barriers and factors that might affect their successful adoption and use of ICT solutions. Lack of proper education and illiteracy, technical skills/knowledge accounts as some of the reasons and factors that hinders the ability of SMEs to adopt new and complex IT software.

Based on the above, the main recommendations are;

1. As SMEs are among the greatest employers of labour, there is the need for government to provide all the necessary infrastructures such as, electricity/power, right policies, skills acquisition centres, supports, incentives etc.
2. There seems to be low awareness on the importance of ICT, therefore government should create awareness through both the print and electronic media in various local languages to create awareness.
3. In order to assist the younger generation, ICT should be introduced and made compulsory in all schools, colleges and universities.
4. All stakeholders such as financial institutions, government institutions, as well as ISPs, should play active roles in educating and encouraging the use and adoption of ICT.

6.4 Further Research

This study was carried out as part of the MRes dissertation and therefore was conducted in relatively small scale. Combining qualitative data collection methods with models of innovation generated some useful initial results. The findings of this research and the research limitations have resulted in the identification of potential future research directions for investigation. Therefore, the recommendations for further research as a result of this study are indicated below;

More research is needed to further validate the findings, in order to increase the generalisation of the results in different parts of Nigeria and over Africa in general.

Re-testing the research findings and the recommendations in different parts within Nigeria, will help to determine whether the findings have the same impact or less significant in other areas.

Comparative studies can be conducted in other sub-Saharan African countries, for example Ghana, Cameroun, and Togo, to determine differences in the context of developing countries. For example, in the developed countries, researchers have compared ICT adoption strategies between countries such as UK and the USA.

In spite of the fact that much research has been conducted in the area of ICT adoption, the area related to ICT use or utilisation by SMEs in developing economies is still relatively low. Thus, more research still needs to be conducted in other areas within Nigeria as well as other developing countries.

From the review of the literature, it appears that no existing research had examined the level of utilisation of sophisticated ICT solutions in SMEs in developing economies. It will be useful to conduct further research in this area.

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APPENDICES:

Appendix A- Cover Letter for Survey



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15th December 2014

Dear Sir / Madam

TOM ROGHOKE ABOJO – RESEARCH STUDENT: LETTER OF INTRODUCTION

I am writing as the supervisor of Tom Roghoke Abojo, who is currently engaged in postgraduate research studies at our institution. He is undertaking an academic research project on small business policies. We would appreciate any cooperation you can provide in this project.

Should you require any further information, please contact me, my co-supervisor Dr Michael Ngoasong, or the Head of the Research Degrees Programme, Dr Claudia Simoes.

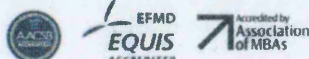
With thanks and best regards

A handwritten signature in blue ink, appearing to read "Richard Blundel".

Dr Richard Blundel
Senior Lecturer in Enterprise Development

Email: richard.blundel@open.ac.uk

Web: <http://www.open.ac.uk/business-school/people/dr-richard-blundel>



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Letter of Introduction

April/May

2015.

Dear Sir (Madam),

I am presently an MRes student (Masters in Research methods) at the Open University Business School Milton Keynes UK. I am currently working on my dissertation on the topic:

THE EFFECTS OF GOVERNMENT POLICIES ON THE USE & ADOPTION ICT BY SMEs IN NIGERIA.

I have chosen your organisation as one of my study firms so as to be able to gather relevant data to help understand the effects of government policies on the adoption of modern technologies (ICT and e-commerce) by small and medium scale firms like your organization. I therefore seek your assistance in conducting this research study; in the form of conducting some interviews and looking at some company documents and publications.

My supervisors are: Dr Richard Blundel (member of Institute for Small Business and Entrepreneurship - ISBE) and Dr Michael Ngoasong (Investigating Entrepreneurial Opportunities - Co-Chair). The main purpose of this letter is to request some time for me to be able to conduct interviews with you and some key decision making staff of your organisation. The information to be gathered through this means is just for the purpose of this academic exercise and would be used only by me in strict confidence.

Kindly oblige me this request so as to enable me carryout this research. I will follow up on this with some telephone conversations. Meanwhile, if you have any questions, feel free to contact me with my details below. You can also address any questions to my supervisory team: richard.blundel@open.ac.uk or michael.ngoasong@open.ac.uk.

Thank you very much. Your cooperation in this regard is greatly appreciated.

Yours faithfully,

Tom Roghoke Ajobo
Open University Business School
Michael Young Building
Milton Keynes
MK7 6AA
Mobile: +44(0)7435234454
Tom.ajobo@open.ac.uk

Appendix C- Interview Questions

Below is a list of questions to be used to gather data from the field:

The effects of government policies on the use and Adoption of ICTs by SMEs in Nigeria

AIM

The main aim is to identify the rate of adoption and use of modern ICTs by SMEs in different sectors across different context (among and emerging Nigerian businesses).

The focus is to investigate and discuss the role and effects of government policies on technological learning and information and communication technologies (ICT) play in fostering development of SMEs, by looking at the entrepreneurial initiatives, policies and practices of the SMEs especially from the perspective of factors that may influence this phenomenon: Individual factors, organizational, technological, as well as environmental factors. **Some of the questions asked in each of these areas are as set out below.**

1. **Project Background** - *A brief explanation of the project to be given to informants covering the main aim as outlined above.*
2. **Respondent Background-** *Using this to get knowledge of the area of expertise of the informant so as to know what aspects of the key sections of: Company strategy, Staffing, systems & processes, or customer management to concentrate on in the follow up questions.*
3. **Part One: Background Information and Organisational characteristics**
What is the nature and characteristic of government policies as it affects and influence SMEs?
 - i. What is the historical background of your organisation?
 - ii. What products or services does your organisation offer?
 - iii. Why does your firm use (or not) use ICTs?
 - iv. What information and communication technology is in place?
 - v. What type of internet connection do you have?
 - vi. Do you use any of the mentioned ICT to achieve your business values? Explain
 - vii. How does your organisation acquire ICT resources and e-commerce knowledge to do business?
 - viii. Does your organisation use Internet and e-commerce to enhance your business objectives? If so, explain how your organisation uses the above.

4. Part Two: Development of ICTs

What factors/policies affect the Information Communication Technology initiatives of the SMEs?

What challenges has your organisation/firm faced in using Internet and e-commerce applications to accomplish business tasks? - In the local business environment and in the global business environment.

- i.** Where does the responsibility lie for managing the internet and e-commerce technology and the approach for adoption and business planning, in your organisation?
- ii.** How does management perceive the role of e-commerce in the future operations of your firm?
- iii.** In what ways has ICTs been adopted and use (if applicable) in your firm?
- iv.** What kind of support have you received, if any, from other local organisations to accomplish e-commerce initiatives in your organisation? Explain.
- v.** Explain the challenges/benefits brought in by the external local environment in the application of ICT and e-commerce in your organisation
- vi.** Do you think your firm has made the right decisions for or against ICT adoption? Why and How?

5. Closing questions

- i.** Which of the factors earlier mentioned would you say have the greatest influence on your organization's use of modern technologies? Why
- ii.** What level and type of support would you like to see from other organizations and the government to aid your organization's use of modern technologies?
- iii.** Looking ahead, where do you see your organization (in the development and use of modern technologies) in the next five – to-ten years?

Thank you so much for your time.

Appendix D



From Dr Duncan Banks
Chair, The Open University Human Research Ethics Committee
Email duncan.banks@open.ac.uk
Extension 59198

To Ajobo Roghoke Tom, Department of Business & Management,
Faculty of Business and Law.

Subject *"The effects of government policies on the use and adoption of
ICT by SMEs in Nigeria."*

HREC Ref HREC/2015/2076/Ajobo/1
AMS ref
Submitted 25 August 2015
Date 25 August 2015

Memorandum

This memorandum is to confirm that the research protocol for the above-named research project, as submitted for ethics review, has been given a **favourable opinion** by the Open University Human Research Ethics Committee. Please note that the OU research ethics review procedures are fully compliant with the majority of grant awarding bodies and their Frameworks for Research Ethics.

Please make sure that any question(s) relating to your application and approval are sent to Research-REC-Review@open.ac.uk quoting the HREC reference number above. We will endeavour to respond as quickly as possible so that your research is not delayed in any way.

At the conclusion of your project, by the date that you stated in your application, the Committee would like to receive a summary report on the progress of this project, any ethical issues that have arisen and how they have been dealt with.

Regards,

Dr Duncan Banks
Chair OU HREC

APPENDIX- E



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Research Project Information and Consent Form

Project Title

The Effects of Government Policies on the Use and Adoption of ICT by SMEs in Nigeria

Name of the Researcher

Tom Roghoke Ajobo – MRes, Faculty of Business and Law, The Open University.

Purpose of the Research

This research project is being undertaken as part of my MRes thesis, and is thus for academic purposes only. The main objective is to elicit rich and deeper insights from participants regarding their views and experiences on the effects of government policies on the use and adoption of ICT by SMEs in Nigeria. Such research data will be collected using semi-structured interviews along with field observation notes.

Duration of the Interview

The duration of each interview is expected to last approximately 60 minutes.

Benefits to the Participants

Whilst there are no immediate benefits for the participants, it is anticipated that this MRes study will contribute to and encourage high quality research in the field of ICT particularly within emerging economies. The research fieldwork further offers a meaningful platform for stakeholders to share their views on how ICT may be further improved in Nigeria, potentially stimulating debate across wide-ranging practitioners, academics and policy makers. Not least, a summarised copy of the research report shall be provided to the participants on completion of the final report.

Risks to the Participants

The research field work involves minimal levels of risk, and the participants will not encounter any risks that might exceed those risks that they encounter in their day-to-day activities. However, the researcher shall take due care to protect participants from all types of psychological distress or any physical risks.



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Confidentiality and Data Protection

The researcher will take every possible precaution to uphold the confidentiality of the research participants' identities and data. The data collected from the participants will be used solely for research purposes and with their permission. If any participant does not agree to the use of any piece of the information provided by him/her, such data will not be used in this research project. The interviews will be tape recorded and, transcribed by the researcher afterwards. The researcher will also take all possible measures to protect the data collected from any unauthorised access, accidental disclosure, loss or destruction. The researcher shall keep the data under password protected storage. The audio data will be stored on the more secure Open University's servers where it will be accessible to the researcher only. The data shall not be kept by the researcher longer than required, and will be destroyed once the research project has been completed and the MRes thesis has been submitted to the research school. For the benefit of participants, no personal information is required at any stage of this research and thus, the names of the participants and their organisations shall be kept confidential and will be coded. Instead, pseudonyms such as respondent 1 or participant 1 etc. shall be used to denote the individuals who participate in the research. For purposes of this research, the researcher shall dutifully adhere to the provisions contained in the Data Protection and Freedom of Information Act (UK), The Open University Code of Practice for Research and Those Conducting Research, the Ethics Principles for Research involving Human Participants, and the Economic and Social Research Council's Framework for Research Ethics. Therefore, data protection and confidentiality shall be maintained strictly in accordance with the guidelines detailed herewith. The results of the data shall be disseminated in the form of dissertation report and, possibly as an article for presentation at an academic conference or for publication in an academic journal.

Costs and Compensation

This research project is self-funded and is to be undertaken only for the purpose of completing an MRes and possibly writing a research article. The research participants therefore, shall not bear any costs during the research process. The researcher shall approach each participant at his/her place of work in Nigeria.

Voluntary Nature of Participation

Participation in the research process is voluntary and a participant has every right to refuse participation. Even after agreeing to participate, the respondent still retains the right to withdraw participation before all the research data is analysed and final results have been concluded.

Contact Details

In case of any queries regarding this research project, please feel free to contact me or any of my research supervisors at The Open University.

Tom Ajobo (Researcher)

Tel: UK +44 (0) 7435234454; Nigeria +234(0)8030966257

E-mail: tom.ajobo@open.ac.uk

Dr Richard Blundel (Supervisor)

Tel: +44 (0) 1908 54266

E-mail: richard.blundel@open.ac.uk

Dr Mike Ngoasong (Supervisor)

Tel: +44 (0) 1908 53192

E-mail: michael.ngoasong@open.ac.uk

Participation Agreement

I _____ have had the opportunity to read this **information and consent form**, ask questions where necessary and agreed to participate in this research project. I have been informed about the purpose, duration, risks, and benefits of the project. I have also been assured about the confidentiality of the information, and that research data will be confidential to the extent allowed by law, and thus shall remain secure and only used for academic purposes including writing an academic research paper. I have also been informed that I have the right to withdraw from participation before all the research data has been analysed and final results are concluded.

I understand that if I have any questions or concerns about this project, I can contact the researcher and/or his academic supervisors as listed above.

Participant's Signature

Date

Researcher's Signature

Date

APPENDIX F-Interview Participants Profile

Overview of Interview Participants (FA)

FA is a restaurant and resort centre located in Asaba, which was established in 2008. It has a staff strength of 18 with an annual turnover of N14.2m. There have a lot of recreational facilities like snooker, swimming pool, bar and restaurant, boutique etc. The business started as a micro outfit, managed by the owner-managing director, but later grew to become a small business establishment. FA has a manager who oversees to the day to day running of the business. It was the owner-manager's decision to use ICT in the business in order to improve efficiency.

Interview Participants (FB)

FB is a wholesale/retail online firm based in Lagos that was established in August 2013 and is mainly engaged in the sales of varieties and chains of products, like phones, electronics, food and beverages, clothes, assorted drinks, cosmetics etc. It has a staff strength of over 40 with an annual turnover of N21m. The firm's mission according to the manager, is to become a leading online trading and marketing outfit that employs the latest modern IT's in order to satisfy its customers and thereby build a good business-customer relationship. It has branches in Abuja and Port Harcourt, but with headquarters in Lagos. It had a managing director and other departmental heads.

Interview Participants (FC)

FC was established some 14 years ago in 2001 with head office in Onitsha with the aim of providing intra-city and state transport services in Nigeria. The Company has fleets of luxurious buses, mini buses and vehicles that are involved in transporting people and goods to and from all the 36 states of Nigeria. It has branches all over the 36 states and just introduced courier parcel services as part of its business expansion. It has also introduced

online ticketing as part of its business strategies to improve service delivery. The company has a chairman/managing-director as the owner and others as heads of Admin, logistics, maintenance and accounts departments. It has a staff strength of 84 and an annual turnover of N50m. The company's mission is to improve its operations through the use of modern technologies to communicate and satisfy customers.

Interview Participants (FD)

FD is an authorised information and telecommunication distribution firm, established some 5 years ago based in Lagos. It is a small firm that acts as a distributor to the major telecom service providers in Lagos and Abuja, ranging from Airtel, Etisalat, MTN, Vodafone, Globacom, Starcomms etc. The firm is also involved in sale of varieties of telephone handsets. FD is a privately owned limited liability company and has 37 staff with presently a turnover of over N25.5m. The company's mission and vision is to add value to service delivery, ICT development and use in Nigeria by the services they provide with help of modern management practices. The current business environment of FD is described as challenging but the managing director states that the challenges in his company are not different from other SMEs. It has an IT department with staff who are knowledgeable in the area of ICT.

Interview Participants (FE)

FE is a company that manufactures industrial chemicals located in the Agbarha industrial area of Lagos, established in the year 2000. It is a medium sized company that has over 85 staff, with an annual turnover of N90m. The company structure comprises of a managing director, departmental heads of administration, marketing, production, quality control etc. The company's mission and vision is to manufacture the highest quality products with the help of modern technologies and maintain maximum customer satisfaction through

superior service and competitive advantage. The company is in the process of installing an accounting software to manage its account, but uses Microsoft office.

Interview Participants (FF)

FF is an investment and capital market consultant registered with the Nigerian security and exchange commission, established in 2003. This is a small company with a staff strength of 20 and an annual turnover of N27m. FF offers investment financial services and advice to its clients and customers. Their mission is to help customers make investment decisions fast with the click and help of a mouse, with the help of ICT facilities in the company. The company's organisational structure comprises the managing director who also doubles as owner-manager, and management team comprising of a few heads of departments, plus other supporting and supervisory staff. FF has a very vibrant and effective IT manger and department.

Interview Participants (FG)

FG is an advertising and public relations outfit based in Warri. It was established in 1997 as a printing and publishing company, but later in 2010 as part of business expansion and strategy diversified into corporate affairs and public relations. It currently has over 30 employees and has annual turnover of N45m. It has branches in Lagos and Port Harcourt. The company organisational structure comprises the managing director and other branch managers who are answerable to the MD in Warri. Although FG has an IT department, the company still hires consultants that also assists in to manage the company's ICT infrastructures. FG mission and vision statement is to have a good reputation as an SME that would grow and develop the small business sector.

APPENDIX G- Interview Extracts

The M/D and IT officer of FB comment:

“Initially we [the firm] used to use the manual system in most of our operations.....relying mainly on telephone conversations and sending documents by post which causes delays, especially in Nigeria with the attendant cost of courier services. In order to overcome some of these barriers we decided to adopt ICT. Presently, ICTs now play a major role in our firm’s networking and communication activities as we use these technologies to facilitate communication among employees and reduce co-ordination costs” (M/D-FB).

“In order for us to become more efficient and effective in our business operations, audit our accounts and store information properly, we had to move from manual to electronic and so decided to start using some types of ICT such as the Business Soft accounting package. And this has helped and assisted us with our internal control mechanisms, improved on our record keeping especially when it comes to information regarding customers, suppliers etc” (IT Manager FB).

Nigerian Communication Commission (NCC) Data Report, 2013

“Nigeria is currently regarded as a country that has one of the fastest growing telecommunications markets in Africa. This is because the Nigerian telecommunications sector/industry has experienced tremendous transformations in recent years due to the liberalisation of the sector and the current competition amongst private operators. Currently, there is a unified licensing regime in place which allows telecom operators to offer converged services. The Nigerian telecommunications sector is also identified as one of the fastest growing mobile markets in recent times and it is noted that mobile subscribers increased from 30,000 at the beginning of the millennium to 127 million by the end of 2013. However, the total number of fixed lines (including fixed wireless access) was

only 1.4 million at the end of 2009. In Nigeria, there are more than 100 million mobile subscribers presently, hence Nigeria is regarded as a country with the largest mobile subscriber base in Africa. The number of Nigerians using wireless phones has grown exponentially while the number of Nigerians using landline phone has reduced” (NCC).

Also, as at December 2013;

“The total active internet subscription for all market segments increased from 31,143,861 in Dec, 2013 to 64,417,110 in Dec, 2014. The four (4) Mobile GSM operators recorded 64,229,097 active internet subscriptions indicating that the Mobile GSM operators accounted for 99.7% of the active internet service subscriptions. The Fixed Wired/Wireless market segment only accounted for 0.29% of total active internet subscriptions” (NCC).

According to Nigeria’s Minister of Communications Technology, Dr Omobola Johnson:

“Nigeria’s regulator, the Nigerian Communication Commission (NCC), plans to award seven licences to regional infrastructure companies to extend broadband infrastructure nationally. The first two of these were awarded in early 2015 to MainOne Communications to provide services in Lagos and North Central States respectively. This nascent Smart States initiative, which sees States committing to reduce the cost of Broadband access by reducing taxation and simplifying regulations, will go a long way in promoting and stimulating ICT acceptance and adoption in the country” (May, 2015)

National Information & Communication Technology (ICT) Final Draft Policy

“Nigeria is known to have the largest market for telecommunication in Africa and the Middle East and also possesses the most vibrant fixed and mobile telephony companies in Africa, yet the demand for more subscribers especially with SMEs continues to rise. There is substantial evidence showing the deep quest by consumers, not just for lines but also for good quality services from the operators. In spite of this growth trend in Nigeria’s telecommunications sector, there have been issues that impede the further development of

the industry, such as lack of power supply, insecurity, lack of infrastructural facilities, high import duty on telecommunications equipment which are in the range of 30-70%, anti-competitive practices leading to operators forming cartels to frustrate the natural interplay of market forces, lack of financial resources and high operational cost amongst others. The increasing globalization driven by ICT makes it imperative for Nigeria as an emerging market to irreversibly consider the application and promotion of ICT strategy to facilitate its rapid growth and development” (NCC, 2013)

Micro, Small and Medium Enterprises Development Fund (MSMEDF, 2014)

As part of its developmental functions and mandate of promoting a sound financial systems in Nigeria, the Central Bank of Nigeria launched the Micro, Small and Medium Enterprises Development Fund (MSMEDF) on August 15, 2013. This was in recognition of the contributions of the Micro, Small and Medium Enterprises (MSME) sub-sector to the economy (CBN-Finance Dept. 2014).

The Fund shall have a take-off seed capital of N220billion. The broad objective of the fund is to channel low interest funds to the MSME sub-sector of the Nigerian economy through Participating Financial Institutions to;

- Enhance access by MSMEs to financial services
- Increase productivity and output of SMEs
- Increase employment and create wealth
- Engender inclusive growth

In line with the provisions of the Revised Microfinance Policy, Regulatory and Supervisory Framework for Nigeria, enterprises to be funded under the scheme include:

a) Micro Enterprises

b) Small and Medium Scale Enterprises. (Development Finance Department-CBN 2014).

The managing director of FF states that:

“The level of support we [SMEs] get from the Nigerian government is estimated to be 48% and from banks 45% and I consider this to be too low and inadequate. Presently in Nigeria, most banks and financial institutions do not give loans to SMEs and some banks such as the Bank of industry that are mandated to give loans to SMEs require collateral such as landed properties and capital, but the inability of most of us [SMEs] to present this requirements, remain a major setback to our growth, development and survival”

Four SMEs (FB, FC, FE and FG) identified problems associated with government policies, regulations and lack of support as part of factors responsible for non-utilisation and adoption of ICT by SMEs in Nigeria. According to one of the participant:

“Starting a business here in Nigeria is very complicated, many things need to be put in place, but the chief among them is funding that is extremely difficult to get. I had to sell my properties and solicited for money from friends and family to start this small business about two years ago; no properties to secure a bank loan” (M/D-FA).

Also, another respondent notes that:

“.....From the government, they lack focused policies, we need a robust policy. The government needs to introduce policies that would support and help develop SMEs in the country [Nigeria]. SMEs require some level of assistance and support from the banks, but the conditions and rules attached for securing loans especially for (SMEs) are not favourable but rather very stringent” (MD-FC).

Another respondent comments:

“If the government agrees and decides to support and improve ICT initiatives and programme in the country, it will go a long way in supporting and encouraging many firms (SMEs) like ours to increase our use and adoption of ICT in terms of capacity building. However, if the government do not provide the enabling environment for SMEs to strive

and survive, it becomes impossible for us stakeholders to create employment and contribute to national development” (M/D-FD).

Suggestively, the comments made by participants imply that government have not leaved up to expectation in terms of promises. Insights from the SMEs suggest that favourable governments support and policies would go long way in motivating SMEs adoption and increase the use of ICT in Nigeria. SMEs, given their basic characteristics of small capital investments, small size, low profit margin and little management/staff, cannot afford all the technical and support services that they need for successful operation. However, realising that SMEs hold the greatest prospect for growth for the Nigerian economy, the government has begun to address the challenges that impede ICT adoption, use and growth by SMEs in Nigeria.