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ELECTRONIC COMMERCE TECHNOLOGY ADOPTION AMONG SMALL AND MEDIUM SIZED FIRMS IN NIGERIA

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A thesis submitted in fulfillment of the requirement for the award of the degree of Doctor of Philosophy (Entrepreneurship)

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Declaration

I declare that this thesis entitled "Electronic Commerce *Technology Adoption among Small and Medium Sized Firms in Nigeria*" is the result of my own research except as cited in the references. The thesis has not been accepted for any degree and is not concurrently submitted in candidature of any other degree.

Signature	:	.....
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DEDICATION

I dedicate this thesis to my parents and family members for their moral support and prayers throughout the period of writing this Thesis

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ABSTRACT

The appearance of the internet among communities has brought many benefits for businesses. The internet inherently provides businesses with cost-effective means of distributing as well as obtaining information quickly. Electronic commerce (E-Commerce) is a paradigm shift and a competitive tool for small and medium sized firms (SMFs) to conduct their businesses via computer networks including the Internet. Even though, Nigeria is the most popular and populated African country with current statistics standing at about 198 million people and is potentially a very lucrative market for e-commerce services. In spite of the significant growth in the usage of the Internet and the value added services, there are still several challenges that the Internet community is currently facing in Nigeria especially in relation to e-commerce adoption. Hence, the main purpose of this research is to explore electronic commerce technology adoption among small and medium sized firms in Nigeria. The researcher used qualitative approach through semi-structured interview guide to collect data from 25 respondents via a tape recorded interview. Recorded data were transcribed verbatim, coded and analyzed via thematic, content and case by case cross case analysis. This study found that the awareness of e-commerce technology among SMFs in Nigeria is high. The study also found that the readiness level for small firms implementing and those willing to implement e-commerce technology is high. The study also reported that there are many benefits in the adoption of e-commerce technology, and also barriers to e-commerce technology adoption also exist. However, the study concluded that with appropriate government support, SMFs in Nigeria could reap bountifully from e-commerce technology adoption.

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LIST OF ABBREVIATION

USA	-	United States Of America
UK	-	United Kingdom
USD	-	United States Dollars
SMI	-	Small & Medium Industry
SME	-	Small & Medium Sized Enterprise
RQ	-	Research Question
RBV	-	Resource Based View
MBA	-	Master In Business Administration
MNC	-	Multinational Company
IT	-	Information Technology
INFO	-	Information

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ECT	-	Electronic Commerce Technology
MM	-	Marketing Manager
POE	-	Panel of Experts
CEO	-	Chief Executive Officer
MD	-	Managing Director
EB	-	Electronic Business
EC	-	Electronic Commerce
TN	-	Telecommunication Networks
ES	-	Electronic System
EF	-	Entrepreneurial Firms
BF	-	Business Performance
EM	-	Electronic Marketing
IM	-	Internet Marketing
WM	-	Web Marketing
DM	-	Digital Marketing
OM	-	Online Marketing
EM		Electronic Marketing
IB	-	International Business
RQ	-	Research Question
RO	-	Research Objectives

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CHAPTER 1: INTRODUCTION

This chapter begins with a background discussion concerning the research area. The background of the study is followed by statement of the problem, research objectives, significance of the study, scope of the study, definition of key terms, limitation of the study and chapter summary. Finally, the outline of the thesis is presented at the end of the chapter.

1.1 Background of the Study

The information and communication technology (ICT) revolution was reported to have a direct significant connection with the manner in which small and medium sized firms (SMFs) carry out their daily businesses transactions. Nonetheless, among the most unique and momentary development of SMFs is the introduction of electronic commerce technology. As at December, 2011, over 2 billion people had access to the Internet globally. Thus, global adoption of the Internet has risen to about 580% (Rahayua and Daya, 2015; Irma and Chong, 2013; Miniwatts Marketing Group, 2012). In view of the above, electronic commerce technology has been defined in various ways by researchers, but generally it refers to buying and selling of products through electronic system. Turban (2008) defined the concept as the process of buying, selling, transforming or exchanging products, services and or information via computer networks including the Internet. Rahayua and Daya (2015) defined electronic commerce technology as the use of the Internet to buy, sell or supports and services. Irma and Chong (2013) stated electronic commerce technology as business carried out through electronic data transmission over the Internet. The technology enables high customization and allows firms to improve customer services. A vital benefit of electronic commerce technology is access to international markets which enables businesses to expand their coverage. The Internet allows increase in awareness, visibility and opportunity for firms to promote its products and services (Jones et al., 2011; Agwu and Murray, 2015; Asghar et al., 2013; Ajagbe, 2014). Electronic commerce technology as a way of doing business has substantial benefits amongst which are market expansion, customer service improvement, costs reduction, and productivity enhancement. In Nigeria, the acceptance of the technology is believed to be at initial phase. However, it is gradually growing in the country particularly among the large number of elite population. Retrospectively, SMFs are perceived to still struggle to provide Internet services at their own expenses due to limited government support (Chong et al., 2014; Jamali et al., 2015; Dahnil et al., 2014). Hence, the growth of electronic commerce technology in Nigeria involved the direct cost of extensive investment in ICT by government and the indirect cost to consumers of having to adjust their buying behavior. Nonetheless, consumers are used to direct contact with merchants of their choice, even when the cost of procurement is high.

According to Agwu and Murray (2015), access to the web in developing countries was primarily restricted to e-mail communication. As such, people in such regions continue to consider the Internet and its application as simply a medium for e-mail communication, faxing and web surfing. Thus, the conference on trade and development organized by the

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United Nations (UN) stressed that the trends are particularly common in Africa (Ayo et al., 2011; Jagoda, 2010; Ahmad et al., 2015; Ogbari et al., 2016). In view of some of the earlier thoughts, developing countries have lagged behind in the adoption of electronic commerce technology activities partly as a result of factors such as inadequate research, inefficient use of ICT knowledge, inadequate investment within firms to acquire technology, high investment cost, inadequate promotions, supports and policies from government. Hence, Nigerians are still reluctant in adopting electronic commerce technology despite its ample benefits. However, for many of them buying through the Internet may actually be more complicated and could be financially risky (Ayo et al., 2011; Jagoda, 2010; Ahmad et al., 2015).

Nonetheless, as Nigeria kept expanding and growing in the adoption of Internet technology, it is important for public officials and private sector experts to acknowledge those factors that are responsible for their refusal and hesitation to implement electronic commerce technology in conducting business operations. Ahmad et al. (2015) opined that by recognizing such factors that restrict the implementation of electronic commerce technology, the government and businesses could work on subduing these variables that later would create a positive environment that will motivate the adoption of electronic commerce technology. Consequently, business enterprises in this era of internationalization cannot afford to be docile to innovations that will add value to their activities and enhance profitability. Hence, innovation has been described by Jagoda (2010) as an idea, practice, or material artifact perceived to be new by the relevant unit of adoption. However, the rising trend in the emerging international economy is electronic commerce technology. Alrousan and Jones (2016) opined that electronic commerce technology is among the most discussed issues in business today. The authors added that this is because it helps in reshaping customer-supplier relationships, streamlining of business processes and in some cases restructuring of whole industries. Ayo et al. (2011) asserted that electronic commerce technology offers a level playing ground for large businesses as well as small and medium sized firms to operate in the international marketplace and for regional markets and local communities to partake in social, economic and cultural networks seamlessly across international boundaries. This is no gainsaying that it is these advantages from the innovations in electronic commerce technology that is promoting the suggestions for use not only by large firms but also SMFs. Nonetheless, it is universally acknowledged that encouragement of innovations for adoption would rely on the willingness to discard the traditional approach and embrace the modern technique. In addition, lack of willingness to change sometimes could be due to inability to understand the new technology. Hence, Awa et al. (2015) referred to e-commerce as a wide range of online business activities concerned with trading in products and services. The authors also added that it involves any form of business transaction in which the parties interact electronically rather than by physical exchanges or direct physical contact.

Ayo, Adewoye and Oni (2011) stressed that e-commerce is the implementation of the internet for marketing, identification, payment and delivery of goods and services. Authors further mentioned that the internet and other web-based technologies are responsible for propelling the e-commerce innovations. Awa et al. (2015) asserted that “the internet has brought about significant alterations in issues of national economy. This is because firms are separated from

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each other by barriers to cross border trade and investment, isolated by distant time zones and language, and isolated by national difference in government regulations, culture and business system". In the same opinion, Saffu et al. (2012) argued that the internet equally foster direct access to distant markets, promote globalization of commercial activities and blurs many of the recent dissimilarities between domestic and foreign firms to an extent that it is practically difficult to determine the origin of products. The growth in the use of internet and other related ICTs products to conduct business transactions is growing in private, public and non-profit sectors in both industrialized and developing country contexts (Awa et al., 2015; Abebe, 2014; Saffu et al., 2012; Savrul et al., 2014). It would therefore be anticipated that both large and small firms should embrace the internet towards developing the e-commerce phenomenon as an avenue to properly serve their customers. As a result of this, Chong et al. (2014) highlighted that consumers now value time, are inquisitive and would prefer to have required data in other to make informed choices as well as consummate the transaction involved therein in the quickest possible time. These are visible advantages of e-commerce which businesses are being called upon to embrace. The encouragement of e-commerce is therefore in the interest of firms in order not to fall behind competitors who embrace it. In view of this, the focus of this thesis is therefore to explore the benefits of e-commerce for small and medium sized firms as well as the challenges that may stand in the way.

In recent times, the numbers of SMFs that are implementing e-commerce systems are on the increase. Electronic commerce technology is not only an instrument for increasing income, but also an essential means of competition. Electronic commerce is a process of transferring, purchasing, or exchanging of goods, services and information by businesses and consumers using computer network such as the internet. The technology has transformed business processes in a number of organisations and will continue to do so in future (Mpofu and Watkins-Mathys, 2011; Abbasi et al., 2010; Ajagbe et al., 2015). In addition, Dahnil et al. (2014) described e-commerce as all about time cycle, speed, and internationalization, productivity enhancement, new customer's identification and knowledge sharing across institutions, through digitally enabled transaction across boundaries in return for products and services. The technology has the ability to allow businesses to communicate and to engage in transactions any time and any place. As a result of the benefits accruable from the adoption of e-commerce technology, Chong et al. (2014) stated that customers can shop around comprehensively at their leisure anywhere, and always enjoy the same level of services at virtually no costs. Customers are not required to complete order forms or visit a business premise to place their order, everything can be done electronically. According to Pham, Pham, and Nguyen (2011), e-commerce has contributed substantially in costs reduction, improved product or service quality, new customer and market expansion, and generation of new ways or channels for product distribution. All these benefits are accruable both to large and SMFs. Hence, the E-commerce is globally rising and positively impacting industries (Sina et al., 2016; Awiagah et al., 2015; Chan et al., 2012). Nonetheless, the purpose of this study is to determine the key factors influencing adoption of e-commerce for small and medium sized firms in Nigeria. The factors that impact the e-commerce adoption are very important because it is to ensure the successful implementation of e-commerce adoption.

1.2 Statement of the Problem

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Agwu and Murray (2015) argued that electronic commerce implementation depends on specific social, cultural, economic, legal and political context and physical infrastructures which may differ significantly among countries. Research on ICT and particularly e-commerce has focused on developed countries (Asghar et al., 2013; Chong et al., 2014; Jamali et al., 2015; Dahnil et al., 2014). Hence, in such countries, e-commerce currently represents a notable share of overall commerce and is expected to grow in coming years. The growth of electronic commerce in developed countries results in notable impact on the overall economy. The primary route by which e-commerce affect the economy at large is through its impact on productivity and inflation. However, users in developed countries have the benefit of reduction in costs in terms of the time and effort required to order for goods and services and to complete transactions. Hence, e-commerce in developing countries especially Nigeria has not been sufficiently researched (Ayo et al., 2011), and the available research activity on ICT in Africa is usually concentrated on South Africa (Rahayua and Daya, 2015). However, considering the low research in e-commerce activity in developing countries, one might ask whether results from research conducted in developed countries could be applicable to developing ones. One could also argue that findings from developed countries might not directly be transferable to developing countries and that differences in country-contexts can result to varying ICT use and impact patterns (Mpofu and Watkins-Mathys, 2011; Abbasi et al., 2010).

Nigeria is the most popular and populated African country with current statistics standing at over 198 million people and is potentially a very lucrative market for e-commerce services. However, inspite of the significant growth in the usage of the Internet and the value added services therein, there are still several challenges that the Internet community is currently facing in Nigeria especially in relation to e-commerce adoption (Ayo et al., 2011; Jagoda, 2010; Ahmad et al., 2015; Alrousan and Jones, 2016). These challenges include, preserving the culture and traditional way of purchasing goods and services, fear of online security, website adhesiveness and customer loyalty. There is no doubt that e-commerce is designed to add value to the operations of enterprises. The expectation therefore is that all organizations should plan to implement e-commerce technology. While large firms are perceived to have a high degree to adopt e-commerce as a result of their large organizational process input; more frequency in interacting with the external environment and their variety of specialised task. Hence, firms particularly SMFs what fall short of these characteristics may not require it (Ahmad et al., 2015; Alrousan and Jones, 2016). In addition, there is also an opinion that small and medium sized firms are not capable of affording the luxury of e-commerce because of their weak market position and resource constraint. Chan et al. (2012) equally asserted that a small business on the other hand are often characterised as firms with low level of information technology (IT) sophistication and resources availability, weak market position and underutilization and lack of integration of IT. But considering the fact that SMF's are the engine of growth of world economy, Sina et al. (2016) posited that such group of firms have no option than to adopt e-commerce in order to widen their operations to survive in a highly competitive environment. In as much as SMF's would like to adopt e-commerce technology, they would have to balance the benefits with the challenges of the implementation.

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Eventhough, much has been suggested about the growing use of internet and other related ICT infrastructure to conduct business transactions which should be an encouragement for SMFs to embrace e-commerce. Nonetheless, Awiagah et al. (2015) observed that even though the e-payment system is a major requirement for e-commerce implementation. The Nigerian economy is largely cash based with over 90% of funds in circulation. In Nigeria however, payment for goods and services is mostly due to reasons largely attributable to ignorance, illiteracy and lack of adequate infrastructure to guarantee availability and security of transactions (Rahayua and Daya, 2015; Irma and Chong, 2013). This aspersion on the Nigerian economy is a pointer to the attitudinal challenges e-commerce might face not only by SMFs but also by their customers. Jones et al. (2011) observed also that the boom in internet marketing has created a new set of social and ethical concerns as critics worry most about online privacy issues. Be that as it may, these concerns will therefore not be out of place as it will help to deepen our knowledge as well as give assurance that will remove doubts in the adoption of e-commerce (Jones et al., 2011; Agwu and Murray, 2015; Asghar et al., 2013; Chong et al., 2014; Jamali et al., 2015; Dahnil et al., 2014). Hence, this study intended to raise the awareness to the level that many will see the benefits rather than the challenges involved in e-commerce technology adoption. Moreover, firms should not get to the level that despite the fact that online banking provided many advantages, such as faster transaction, speed and lower handling fees. There are still large group of customers who refuse to adopt such services due to uncertainty and security concerns (Jones et al., 2011; Agwu and Murray, 2015; Asghar et al., 2013). Therefore understanding such reasons for this resistance would be useful for e-managers in formulating strategies aimed at increasing the degree of e-commerce adoption.

Jamali et al. (2015) mentioned that as a result of the flexibility of the market and developing technology, adoption of e-commerce for SMFs are becoming necessary. Hence, SMFs are still far behind the large firms in adopting the new technologies due to the different motives, vision and resources. For instance, while for the large firms the leading driver for e-commerce adoption can be expected to include improved efficiency, SMFs could have varying motives such as customer demands or to improve competitiveness (Chong et al., 2014; Jamali et al., 2015; Dahnil et al., 2014; Ajagbe et al., 2015). Some studies exposed that implementation of e-commerce technology in business transactions could be quite expensive and cumbersome. However, in reality the adoption of e-commerce has been found to drive down cost factors and are able to improve business performance (Rahayua and Daya, 2015; Irma and Chong, 2013). In fact, many SMFs are way behind in the adoption of e-commerce, although there are quite a number of SMFs that have installed websites, but most of them are not fully functional. Asghar et al. (2013) reported that some SMFs in Malaysia are lagging in terms of using internet in their business transaction. This study adds to the limited e-commerce research in African countries. More specifically, it adds to the limited e-commerce research in Nigeria. As such, this study examines factors hindering the adoption of e-commerce among Nigerians.

1.3 Objectives of the Study

Studies have reported on factors that influences individuals and firms to adopt e-commerce (Jones et al., 2011; Agwu and Murray, 2015; Asghar et al., 2013; Chong et al., 2014; Jamali

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et al., 2015; Dahnil et al., 2014). Examples of these factors are technological, social, and environmental characteristics, time, and relative advantage of e-commerce, IT knowledge, and e-commerce compatibility. Based on the previous studies, this study intends to identify factors influencing the adoption of e-commerce among small and medium sized firms in Nigeria. Specifically the study will:

1. Find out the level of knowledge and readiness of e-commerce technology adoption by small and medium sized firms in Nigeria.
2. Examine the perceived benefits of adoption of e-commerce technology among small and medium sized firms in Nigeria.
3. Explore the challenges small and medium sized firms in Nigeria encounter in the adoption of e-commerce technology.
4. Find out key factors influencing the adoption of e-commerce technology among small and medium sized firms in Nigeria.
5. Suggest how government could support e-commerce technology adoption among small and medium sized firms in Nigeria.

1.4 Research Questions

1. What is the level of knowledge and readiness of e-commerce technology and how is it been adopted among small and medium sized firms in Nigeria?
2. How beneficial is the adoption of e-commerce technology among small and medium sized firms in Nigeria?
3. What challenges do small and medium sized firms in Nigeria face in the adoption of e-commerce technology?
4. What are the factors that influence the adoption of e-commerce technology among small and medium sized firms?
5. How can government improve adoption of e-commerce technology among small and medium sized firms in Nigeria?

1.5 Significance of the Study

Considering the fact that small and medium sized firms are the backbone of many economies. This study will be of significance to SMFs in Nigeria with particular emphasis on Borno State as it will make them to understand the benefits in the embrace of e-commerce in their operations. This need for the study is equally relevant in that the use of e-commerce is a growing practice aimed at easing transactions and particularly to keep SMFs in the same competitive perspectives with other organization. The development of e-commerce is for all organizations to embrace e-commerce in other to operate efficiently and effectively with each other. The study will therefore not only be to stress the benefits but aim to identify the challenges that may arise and proffer solutions. In this study, the researcher tried to identify factors influencing e-commerce adoption among SMFs in Borno state. The researcher also considers the level of knowledge and readiness of e-commerce technology adoption and how it is been adopted among small and medium sized firms in Nigeria. In addition, how beneficial is the adoption of e-commerce technology among small and medium sized firms in Nigeria. Furthermore, what challenges do small and medium sized firms in Nigeria face in the adoption of e-commerce technology? Finally, how can government improve adoption of e-commerce technology among small and medium sized firms in Nigeria?

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1.6 Scope of the Study

The study is scoped to cover the 2 local government areas (LGAs) that is Maiduguri Metropolitan Council and Jere Local Government, among the 27 LGAs in Borno State. The other LGAs are presently deserted due to the attack by insurgents. Other LGAs have to depend on the 2 LGAs for their daily needs. How the business in the 2 LGAs are able to keep their businesses running would therefore be of interest and especially to find out whether e-commerce technology played a major role. The study used qualitative interview method among small and medium sized firms in Borno state. In this study, the focus is to identify the factors that affect e-commerce adoption among SMFs in Borno state. The factors that influence e-commerce adoption are knowledge and readiness, government policy and support, benefits and challenges of e-commerce adoption among small and medium sized firms in Nigeria. The interview questions were distributed to the owners and employees of some SMFs in Borno state. To complete the data collection for this study, about 50 respondents were targeted to be interviewed, however, the interviewer reached saturation point when the 25th respondent was interviewed. The researcher assumed the respondents are honest in answering the questions and can get full cooperation from the respondents.

1.7 Structure of the Study

This thesis consists of five chapters. The first chapter introduced the background of study, research problems, and objectives, significance of the study, scope of the study and limitation of the study. Chapter 2 reviews related literature, Chapter 3 presents the conceptual framework and method of the study. Chapter 4 provides analysis of the data. The discussion on findings, conclusion and recommendation of the study was discussed in Chapter 5.

1.8 Definition of Key Terms

Small and Medium Sized Firms: Non-subsidiary, independent firms which employ fewer than a given number of employees. This number varies across national statistical systems. The most frequent upper limit is 250 employees. Small firms are generally those with fewer than 50 employees, while micro-enterprises have at most ten, or in some cases five workers.

Managers and/or Owners: An executive of the Nigerian based SMF who has the authority to provide information on the firm adoption of electronic commerce technology, ranging from the owner, founder, chief executive officer, and key executive, such as marketing manager.

Panel of Experts: These are people who offered opinions on the SMF adoption of electronic commerce used for the purpose of this research.

In-depth Interviewing: An extended face-to-face interchange, between researcher and informant with the purpose of understanding the latter's experiences and perspectives.
Innovation has been defined as the generation, development, and adaptation of novel ideas on the part of the firm.

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Entrepreneurship: The capacity and willingness to develop, organize and manage a business venture along with any of its risks in order to make a profit. The most obvious example of entrepreneurship is the starting of new businesses.

An Entrepreneur: is an individual who, rather than working as an employee, runs a small business and assumes all the risks and rewards of a given business.

Electronic Business: Electronic business; the practice of selling goods and services and carrying on other business activities by computer, especially over the internet.

Electronic Commerce: Turban (2008) defined electronic commerce technology as the process of buying, selling, transforming or exchanging products, services and or information via computer network including the Internet.

Telecommunication Networks: Electronic system of links and switches, and the controls that govern their operation, that allows for data transfer and exchange.

Electronic Marketing: are also known as Internet Marketing, Web Marketing, Digital Marketing, or Online Marketing. E-marketing is the process of marketing a product or service using the Internet. E-marketing not only includes marketing on the Internet, but also includes marketing done via e-mail and wireless media. It uses a range of technologies to help connect businesses to their customers.

Diffusion of Innovation: Diffusion research examines how ideas are spread among groups of people. Diffusion goes beyond the two-step flow theory, centering on the conditions that increase or decrease the likelihood that an innovation, a new idea, product or practice, will be adopted by members of a given culture.

Products: A product is the item offered for sale. A product can be a service or an item. It can be physical or in virtual or cyber form. Every product is made at a cost and each is sold at a price.

Services: In economics, a service is a transaction in which no physical goods are transferred from the seller to the buyer. The benefits of such a service are held to be demonstrated by the buyer's willingness to make the exchange.

Business Transaction: are the interactions between businesses and their customers, vendors and others with whom they do business. Transactions can be very simple, like buying a newspaper, or extremely complex, taking a long time and involving many companies or agencies.

Information & Communication Technology: ICT, or information and communications technology (or technologies), is the infrastructure and components that enable modern computing.

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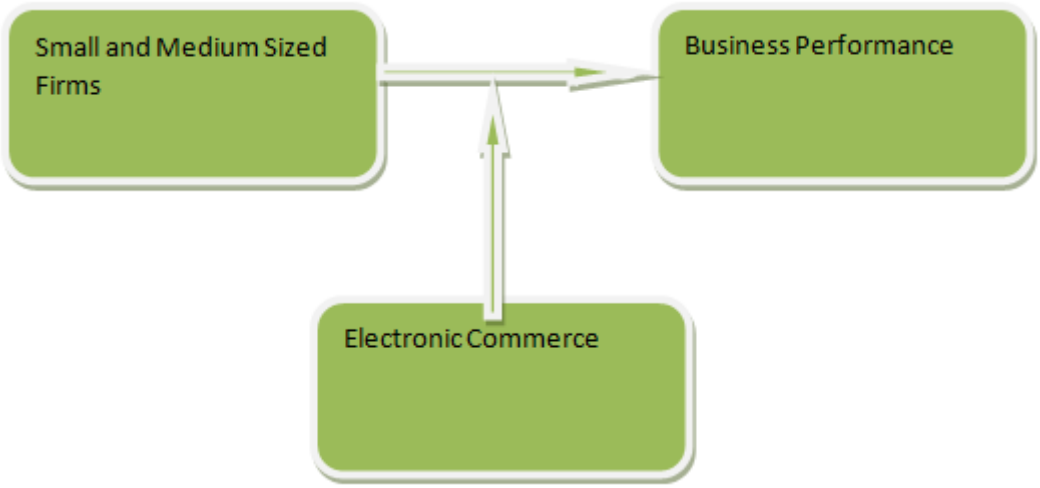

Figure 1.1 Conceptual Research Framework

1.9 Chapter Summary

This chapter considers the essentials of small and medium sized firm's adoption of electronic commerce technology in day to day operations. The background section briefly summarises what is presented in the literature review chapter by reviewing the general aspects of small and medium sized firms, concept of electronic commerce, technology adoption factors, business performance and profitability, theoretical models of technology adoption. Other important areas presented in this chapter is the research problem statement, the objectives of the study, research questions, the scope of this research, theoretical gap of knowledge, definition of keywords, and finally the conceptual research framework that serves as a guide to which the researcher follows up with the thesis.

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CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter focused on the reviews of related literature on small and medium sized firms, electronic commerce adoption, factors influencing electronic commerce adoption, benefits and challenges of electronic commerce adoption, theories supporting electronic commerce adoption. The focus of the review was guided by the objectives the study intends to achieve as stated in chapter one.

2.2 Small and Medium Sized Firms (SMFs)

Hung et al. (2011) regarded small and medium sized firms (SMFs) as an economic description that has been defined in various forms and shapes. They authors opined that quantitative perceptions of the term has been based chiefly on the turnover or assets and number of employees, while qualitatively, it has been viewed based on how the company is organized. Consequently, numerous amount of definitions have emerged from various sources including public agencies. The United States Small Business Administration (SBA), cited in Saffu et al. (2008), which is based on section 3 of the Small Business Act of 1953, mentioned that an SMF shall be deemed to be one which is independently owned and operated and which is not dominant in its field of operation. However, similarly, the United Kingdom (UK) took a more quantitative approach, defining SMF as: Having fewer than 50 employees and is not a subsidiary of any other company (Hajiha et al., 2010). Furthermore, other researchers have also viewed SMF as one in which one or two persons are expected to make all of the important decisions (such as finance, accounting, personnel, inventory, production, servicing, marketing and selling decisions) without the support experts and with entrepreneurs having specific knowledge in one or two key functional areas of management (Turban et al., 2010; Hajli and Bugshan, 2012; Hung et al., 2011; Huang and Qin, 2011). Not only do the definitions of SMF vary, but there are wide ranging views on the features of SMFs in different countries and contexts. Many studies have attempted a universal definition of SMFs based on the characteristics. Towering above all of these studies is the underlying identification that many of the techniques that have been successfully applied in large firms have not provided similar outcomes when applied to SMFs (Cragg et al., 2011; Ghobakhloo et al., 2011). Nonetheless, Ghobakhloo et al. (2011) stated that SMFs are not 'small large firms' but are a separate and distinct group of organizations compared to large firms. Cragg et al. (2011) noted that a borderless global economy was beginning to emerge as it is anticipated in cases of the European Union (EU) where a shift now occurs towards global market place. This is with significant ramifications for supply chains, business processes, customer services and strong regimes of competition.

Small and medium sized firms play substantial roles within all economies all over the world. The sector is perceived as the offshoot of many conglomerates based on the diversified nature of the various products and services it offers. Oliveira and Martins (2010) stressed that SMFs provides over 75% of jobs within a country and Saffu et al. (2008) also argued that SMFs plays a strong role in every economy. Thence, the importance of SMF in the economies of both the developed and developing countries cannot be over emphasized. Nigerian SMFs

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occupied a substantial part of the SMFs sector apart from the banks, oil firms and of recent communication firms (Lal, 2007; Bilau et al., 2015a; Bilau et al., 2015b; Bilau et al., 2015c). This sector of the economy accounts for over 64% of all employment. The Nigerian economy, though heavily dependent on oil, however, the small, medium and micro enterprises dot every nooks and crannies of the country. Agwu and Murray (2015) reported that SMFs today, represent about 90% of firms in the Nigerian industrial sector on numerical basis.

Malaysia's Ministry of Internal Trade and Industry defined SMFs as organizations with (1) an annual sales turnover of below RM25 million, and (2) with less than 150 full-time employees (Alberto et al., 2013; Aminu, 2013; Lim et al., 2013). However, presently, SMFs account for over 80% of total manufacturing organizations in Malaysia. They also account for about 35% of total employment in that sector. The majority are in the traditional sectors of food and beverages (20%), fabricated metal products (18%), wood and wood products (17%), and basic metals (4%). Nonetheless, to encourage prosperity and prepare for international market, SMFs in Malaysia have persistently engaged in intensive product specification, design, and engineering activities and to implement improvements in marketing and distribution (Alshamaila et al., 2013; Abou-Shouk et al., 2013). Thus, considering benefits and incentives offered by the government of Malaysia, steps have been taken to enhance accumulation of relevant technology and to enhance the quality of personnel through education, experience, and skills development. Hence, employee education and development is sacrosanct to organizational prosperity. Aminu (2013) stressed that to remain competitive at the global arena, organizations must prepare themselves and their employees to function successfully in a knowledge-based economy. The author noted that information technology (IT) is an important tool in meeting this challenge. By accelerating their ability to master IT, SMF owners will enable themselves and their employees to compete successfully in today's global knowledge economy. Abebe (2014) put forward that the significant role that SMFs play in the US economy is well documented in the literature. Be that as it may, with the speed of economic globalization, SMFs are increasingly experiencing stiff competition both from within and without (Matlay and Mitra, 2004; Etemad, 2004). Hence, to offset inherent resource and size disadvantages and stay competitive, SMFs adopt myriads of competitive strategies and tools. One such competitive tool is electronic technology.

Alrousan and Jones (2016) posited that SMFs are vital contributors to economic performance in both developed and developing countries because they play a crucial role in economic growth nationally and internationally. This contribution involves creating new jobs, increasing international trade and income distribution, and GDP growth (Bao and Sun, 2011). In most OECD countries, SMFs make around 95% of the total number of enterprises (OECD, 2005). Despite these benefits, the sector encounters many challenges that prevent them from growing and continuously contributing to economic development. The most common challenges encountered by SMFs are: inadequate finance, low human resource capacity, low technological resources, inadequate awareness as regards the importance of public and private partnerships (OECD, 2005; Hussain et al., 2010; Ekanem et al., 2017c; Ekanem et al., 2017d; Esowe et al., 2017). Like many other developing countries, SMFs in Jordan contributed about 97% of all business activities, 50% of GDP and 45% of exports earnings

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(Alberto et al., 2013; Aminu, 2013; Lim et al., 2013). They also represent about 60% of the private workforce and offer about 70% of new job opportunities. Lim et al. (2013) proposed that they account for about 96-99% of enterprises in most OECD nations and provide about 80% of economic growth. Ayyagari et al. (2007) found that, in high-income countries, formal SMFs contributed to about 50% of GDP on average; they also estimated that, on average, SMFs account for close to about 60% of employment in the global manufacturing sector. Estimations data also suggested that SMFs represent, on average, over 90% of the enterprises and about 50% to 60% of employment in most African countries (Ahiawodzi and Adade, 2012; Bilau et al., 2015a; Bilau et al., 2015b; Bilau et al., 2015c). In Ghana, SMFs dominate the industrial sector and have the potential to accelerate economic development, wealth creation, and poverty reduction. Abor and Quartey (2010) found that SMFs account for about 92% of businesses in Ghana and about 85% of manufacturing employment, while contributing about 70% of Ghana's GDP. Thus, SMFs' significance to the Ghanaian economy is substantial.

In 1998, the Pakistani Government recognized the vital roles SMFs contribute to economic prosperity. This recognition led to the establishment of the Small and Medium Enterprises Development Authority (SMEDA) as the leading organization meant to provide support to the sector (Ashrafi et al., 2014; Okoro and Kigho, 2013). Regarding the GDP growth of Pakistan, the SMFs sector has added significantly. This report is based on data from SME Development Authority (SMEDA) indicating that the share in the annual GDP is 40%, share in manufacturing export is 25% and including the provision of substantial number of jobs for skilled workers and entrepreneurs. Nonetheless, the sector represented approximately 90% of all the enterprises in the country and provides about 82% jobs to unemployed particularly in the agriculture sector. Kenneth et al. (2012) posited that the growth of SMFs will be achieved through the provision of superior business environment, greater access to formal financing and support in technical upgrade, human resource development, marketing and innovation. Hence, considering the aforementioned, the roles of SMFs cannot be neglected because it has great importance in the economies of many countries.

2.3 Roles of Small and Medium Sized Firms

The small and medium sized firms are a mixed group of businesses that operates often in service, trade, agri-business and production industry. Such category of firms are often grouped by the number of staffs and/or the value of their assets (Martinez-Caro and Cegarra-Navarro, 2010; Agwu and Murray, 2014; Ekanem et al., 2017d; Esowe et al., 2017). However, the size nomenclature differs within regions and across countries depending on the size of the economy and its resources. In this research, the sector is grouped considering the size of their personnel. Hence, firms with less than 10 staffs are considered as micro, between 11-50 staffs as small, between 51-250 staffs as medium and over 250 staffs as large organizations. The sector constituted over 95% of all firms in many countries. Rahayua and Daya (2015) posited that SMFs offer more benefits compared to larger firms in terms of job creation, growth and efficiency. It has been widely recognized that the firms in the sector not only play an important role in the economy of a country, but are also crucial to the country's economic progress and stability. In view of these, some countries have evolved regulations that facilitate the growth of small and medium sized firms. Be that as it may, such groups of

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firms aspire for higher returns on assets, higher growth of employees and are less likely to fail. Firms in the sector are believed to play an important role in the creation of employment opportunities and economic growth (Chong et al., 2014; Jamali et al., 2015a; Dahnil et al., 2014; Ekanem et al., 2017a; Ekanem et al., 2017b). Nonetheless, in most countries, SMFs generate a substantial share of GDP and provide a breeding ground for entrepreneurship and new business ideas.

2.4 Electronic Commerce Technology

In some studies, the research objectives and research context has been used by authors to define the term electronic commerce (EC). For, Jamali et al. (2015b), they perceived e-commerce in SMFs as the application of ICT and tools to aid trading operations. The authors expanded on the definition by referring to the term as a class of technology apparatus used to support online business transactions between organizations and their direct end customers and between the organizations and others within their business network(s). Meanwhile, Turban, King, Lee, Liang, and Turban (2010) provided a more specific definition which stated that "e-commerce is the process of buying, selling, transferring, or exchanging products, services and/or information using computer networks mostly the Internet and Intranets." They authors highlighted further that the term comprises of exchanges of information to the customers and suppliers, leading toward the process of selling and transacting through online networks. However, among the major criticisms of previous studies on e-commerce is that the adoption in firms is mainly viewed as a dichotomous outcome (either adopted or not adopted). However, the adoption vs. non-adoption approach has been found not to have fully addressed the issue of technology adoption (Hajiha et al., 2010; Hajli and Bugshan, 2012). Thus, this phase of e-commerce represents the capability to start from the basic concept of publishing details of the company information toward interacting with the organizations personnel, customers and suppliers to finally transacting with the customers and suppliers where the buying and selling are conducted online (Ghobakhloo et al., 2011a; Ghobakhloo et al., 2011b; Gomez, 2012).

Hence, in the wider understanding of the e-commerce concept, each of the conceptual models explored in previous researches presents a set of factors that influence the adoption of varying new information technologies. Moreover, such models provide sources from which an empirical investigation of the relationship between the standard of e-commerce adoption and the benefits that are perceived by its adopters can be undertaken. Sina et al. (2016) defined e-commerce implementation as "set up of a company web site to share information, maintain relationships as well as carry out transaction using electronic networks". Gomez (2012) added that the technology is useful for SMFs because they play a vital role in shaping the future economy and even considered as the backbone of industrial development of any country. In addition to the involvement in activities ranging from petty trading, grocery store operators, medium-sized contract manufacturers supplying parts and components to multinational corporations and professional services such as software firms or medical researchers selling. Their services to overseas markets can widely gain fundamental benefits from e-commerce as time and space barriers can be removed from the internet-based platform implicit to this definition. The SMFs sector has a huge potential not only to promote domestic-oriented growth but also to facilitate the infrastructure in the country. For

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accelerated economic expansion and development, the role of SMFs' is inarguable important in new and existing industries. In spite of this, 80% within 700,000 SMFs in Malaysia did not own websites and preferred to conventionally conduct their business (Ghobakhloo et al., 2011a). Low adoption of online transaction of businesses by SMFs is due to lack of awareness of its benefits and perception that e-commerce tools and technology are expensive (Ghobakhloo et al., 2011a; Ghobakhloo et al., 2011b; Gomez, 2012). Moreover, in this new competitive e-environment, SMFs need to adopt innovative and informed e-marketing strategies to standout, maintain profitability and succeed in domestic and international markets (Ajay and Thobeng, 2015; Bolongkikit et al., 2015; Chilaya et al., 2011).

As a result of the critical role in market competition, environmental context has been suggested as among the important factors that should be studied by researchers in e-commerce adoption research (Alzougool and Kurnia, 2008; Ghobakhloo et al., 2011a; Ghobakhloo et al., 2011b; Gomez, 2012). Nonetheless, electronic commerce (e-commerce) technologies have the capacity to lead to significant productivity gains at firm level. This is particularly when applied to business-to business relations, electronic technologies can lead to rationalisation of business processes and cost savings. However, as an immediate impact, Gomez (2012) opined that these technologies allow automation of common processes, such as distribution, sales, after-sales service and inventory management. Ajay and Thobeng (2015) mentioned a variety of benefits that e-commerce provides to small and medium sized firms. The implementation of the technology facilitates access of artisans and SMFs to world markets. It facilitates the promotion and development of tourism in developing countries in a global scale. It facilitates the marketing of agricultural and tropical products in the global market. It provides avenues for firms in poorer countries to enter into B2B and B2G supply chains (Ayo et al., 2011). The technology also assists service-providing enterprises in developing countries by allowing them to operate more efficiently and directly provide specific services to customers globally (Nejadirani et al., 2011). As Ajay and Thobeng (2015) defined, e-Business involved both internal and external processes and are consequently grouped into seven key indicators such as internal and external factors, and depending on the sources of the impacts. The internal factors are caused and arise within the company, while the external factors are influenced from outside of the company. The internal factors consist of individuals and organizations. Nonetheless, individuals in the sectors will be the owner-manager since they are tantamount to key decision making and determines e-commerce adoption. Bolongkikit et al. (2015) stated that if an organization has a receptive culture towards new innovations, such organization will ultimately adapt their operations to electronic transactions. Thus, another important factor to be considered is from readiness and receptiveness of the organization itself. On the other hand, the external factor includes; technology, market and industry, external support and government support. Some major issues for emerging countries to adopt e-Business implementation are caused by the poor technology penetration (PC) and lack of telecommunication infrastructure and external support that provides IT services and e-Business support. Cragg et al. (2011) reported that the support from public agencies and the readiness of the market or industry are strategic to adoption of electronic transaction.

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Afshar et al. (2013) opined that electronic commerce plays a unique role in contemporary small and medium sized firm's growth and development. Thus, with the advancement of this platform people using the internet for their purchases no longer need to be physically present when their transactions occur. The technology has revolutionalised the manner in which retail and service businesses are carried out. Today, goods can be bought by customers from the comfort of their homes and offices. Also goods and products can be viewed on their computer monitors and including assessing product informations. Magutu et al. (2011) argued that an e-commerce strategy is necessary and cannot be deployed in isolation of organisational goals and strategies for short- and long-term gain. This is because e-commerce is still viewed as a new idea for SMFs, consumers, and governments. However, one of the main objectives of SMFs is to take advantage of development opportunities in foreign international markets. In view of this, through the creation of websites, firms have relationships with the external environment that constantly change according to the situation. Hence, the benefits of e-commerce include reduced costs of transactions and marketing, increased accessibility for end users, improved business process flow, and increased efficiency in dealing with suppliers (Afshar Jahanshahi et al., 2011; Magutu et al., 2011).

Another advantage involves smart or genuine negotiations conducted in the internet environment, through which suppliers may offer different prices under different circumstances. Products that generate lower profit or no profit could be priced reasonably and sold based on these negotiations. International market presence makes suppliers visible to all buyers which has many advantages. However, there are also disadvantages, including unsolicited e-mail, the high cost of user support, and a lack of security and privacy (Ifinedo, 2006b). Electronic commerce allows buyers to compare the products and pricing offered by competitors, creating a monopoly for buyers and generating additional software and hardware costs for small and medium sized firms. Like previous technologies, e-commerce presents benefits and disadvantages for innovative small and medium sized firms.

Ifinedo (2006a) stated that SMFs in Nigeria can increase their market coverage, enhance customer service and lower cost of marketing and distribution through e-commerce. However, the strength of e-commerce lies on the availability of a global innovative platform for optimizing operations and integrating services and business partnership via real-time flow of information (Ongori and Migiro, 2010). It provides new strategies of communications, business transactions, market structures, education, and works that assure operational flexibility (Awa et al., 2010). Though the definition vary, Australian Society of Certified Practicing Accountants refers to e-commerce as sharing of business information, maintaining business relationships and conducting business transactions by means of telecommunication networks. Awa et al. (2010) defined it as a form of business transaction involving inter-firm alignment, where supposedly independent firms interact and collaborate real-time through electronic rather than physical contacts. These suggest that e-commerce encompasses electronic trading, electronic messaging, electronic data interchange, electronic fund transfer, electronic mail (e-mail), facsimile (FAX), electronic catalogue, bulletin board services, shared databases and directories, electronic news and information services, electronic payroll, electronic forms, and other types of electronic data transmission. Ajay and Thobeng (2015) argued that from the strategic, operational, and tactical standpoints, all these platforms assist

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SMFs to democratize ideas (supply, archive, and utilize digital data with less restrictions). Additionally, to build on-line communities and business partnerships (B2B and B2C), to optimize value-chain through real-time inter-and intra-firm knowledge sharing, and to create systems integration and/or collaborative environments. Often these attract higher levels of product and process innovation spanning improved competitiveness, costs reduction and improved customer service through transparency, value-added information and new levels of innovation from network externalities and knowledge sharing (Awa et al., 2011; Kannabiran and Dharmalingam, 2012). With disintermediation (B2B and B2C), SMFs are expected to automate operations and to reach consumers directly while satisfying communications, networks and research needs.

Kannabiran and Dharmalingam (2012) observed that advanced technologies such as ERP/CRM software assist SMFs to increase productivity, improve inventory control, and increase sales through closer community accords and faster delivery. Kaplan and Haenlein (2010) found that the diffusion of e-commerce amongst SMFs is relatively slow in many economies when compared with what it is in large enterprises. Kannabiran and Dharmalingam (2012) reported that advanced technologies target large firms because of their financial strength and technical capability to identify alternative technologies that would suit their operations. This contrasts SMFs where extant literature shows that irrespective of their more agility and receptivity to novelty, they scarcely exploit ICT solutions to the fullest. However, in UK, the Sectoral e-Business Watch study reported that the over 1.9 million SMFs connected to the internet, surpassing government's estimate of 1.5 million, tend to use internet only to send mails, transfer files, or gather information (OECD, 2009). The source further reported a deficiency of evidence supporting that SMFs invest in ICT platforms to improve services, processes, business automation, and internal processing of business information and knowledge. Zeiller and Schauer (2011) estimated that about 15% of small firms and 30% of medium-sized firms employ ICT experts or have ICT unit.

Zhu and Thatcher (2010) reported that in a typical e-commerce implementation framework, perceived benefits, organizational size and readiness and external pressure; competitive pressures; expected operational supports, reduction in cost and social approval; and user complexity and providers' opinion are amongst the major factors. While these unique adoption drivers and/or inhibitors apply, studies and theories perceive management's features and supports, owners' enthusiasm and growth ambitions, CEO's knowledge and characteristics, managers' belief differences, and managerial productivity as important adoption predictors of e-commerce solutions that must support existing factors. Awa et al. (2011) observed that the e-commerce solutions implementation rely on the functional and/or emotional feelings of decision makers, which indicate their attitudes, perceptions, psychographics, motivation, and other IDFs. Kannabiran and Dharmalingam (2012) opined that the CEO/owner is relevant for setting appropriate ICT adoption agenda, identifying important information needs, budgeting resources, and managing implementations. However, with the strengths of existing theories, owner managers with other captains could help to reposition firm's strategic thrusts (Awa et al., 2011). They also drive e-commerce solutions by moulding values and cognitive bases of dominant actors, particularly if it is viewed to add to the operational efficiency (Somuyiwa and Adewoye, 2010). In their survey of SMFs in

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Portuguese manufacturing industry, Zeiller and Schauer (2011) found that top management perspectives and attitudes towards the adoption of ICT describe various corporate success stories. They argued from resource-based points that SMFs develop internal skills, competences, and capabilities subject to top management perspectives and attitudes towards execution of e-commerce technology.

2.4.1 Brief Origin of Electronic Commerce Technology

The origin of e-commerce predates the Internet. However, the growth of e-commerce began in the 1960s, even though most technologies connected with innovations emerged around 1970s in form of electronic funds transfer (Turban et al., 2010). Later on, another innovation known as electronic data interchange was introduced. This technology allowed business transactions such as purchase orders to be passed electronically between organisations using standard procedures and documents (Nogoev et al., 2011; Okoro and Kigho, 2013; Oliveira and Martins, 2011; Oliveira and Martins, 2010). In 1969, the US government pioneered the adoption of the Internet via a network of computers to facilitate academic and scientific research. Over the years, the number of Internet users increased enormously as a result boosting exchange of goods and services amongst businesses (known as B2B e-commerce), and between organisations and individual consumers (B2C e-commerce). However, according to Okoro and Kigho (2013), the growth of e-commerce has been seen to be slower than that anticipated earlier with B2B becoming more popular than B2C. There are numerous definitions of e-commerce in the literature. According to Nogoev et al. (2011), e-commerce is an online interaction between a business and its customers or a business and its suppliers for the placement of orders. Thence, the internet becomes a significant part of the organization. According to Oliveira and Martins (2010), e-commerce refers to the application of ICTs to processes within the firm, and possibly to transactions with customers and suppliers. It is important to note that e-business involves several stakeholders, including the business that concludes the transactions, its customers and suppliers. Turban et al. (2010) defined e-commerce as the process of buying, selling, transferring or exchanging products, services and/ or information via computer networks and the internet.

Through the implementation of e-commerce instruments, organisations of all sizes and in all market sectors are able to improve their competitiveness. This capability cuts across regional boundaries and time zones to save time and costs, to open up new market opportunities and enable even the smallest of firms to compete globally. Electronic commerce spans established processes such as bar code scanning and electronic data interchange as well as newer arrivals, like e-mail, the Internet, the World Wide Web and mobile electronic commerce. Agwu and Murray (2015) reported that the internet technological explosion into the world arena coincided with the new millennium and the uses of the internet for commercial purposes have since spiralled out of control. The internet known to have originated from the United States of America has received a worldwide acceptance and is now at par with global products such as coca-cola. The Dot.com companies in the United States such as Amazon and eBay led the way by creating new and distinctive online services where none ever existed. The successes recorded by these organisations paved the way for other organisations including other well known traditional organisations all over the western world such as Wal-Mart, Tesco, and others in retail; Cisco in networking, Dell in the PC manufacturing industry, Well Fargo,

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HSBC, Bank of America, etc, in banking services. Poorangi et al. (2013) stressed that a company without a website today is considered as outdated. The radical changes that have braved the world of business in general and businesses that now run only over the internet could be viewed from a different innovative perspective. The various changes evidenced by its impact have redrawn the boundaries of businesses, thus creating a new but strong world economy never envisaged before and at a much faster rate than the industrial revolutions (Oluyinka et al., 2013; Olatokun and Kebonye, 2010; Ongori and Migiro, 2010).

2.4.2 Types of Electronic Commerce Technology

Extant studies reported that the perspective of e-commerce is not only to provide information but majorly to transact or facilitate the selling of products and services online between buyers and sellers (Samuel and Carter, 2013; Singla and Kumar, 2011; Sila, 2013; Somuyiwa and Adewoye, 2010). In this study, there are generally three important classifications of buyers and sellers that are of focus and these are: businesses (B), consumers and governments (G). The major different types of e-commerce activity between these markets are: Business to consumer (B2C); Business to Business (B2B), Business to Government (B2G) and Consumer to Consumer (C2C). This combination simply tells us that any of the three groups; consumer, business or government can go online to seek to buy and sell so long as the need arises. However, Ayo et al. (2011) suggested that after B2C and B2B markets, the B2G and C2C markets are where most e-business activities occurs. Below is a brief discussion on the different types of electronic commerce available in empirical literature.

2.4.2.1 Business to Consumer (B2C)

Business to consumer e-commerce or commerce between firms and consumers involves customers gathering information, purchasing physical goods or information goods: and for information goods, receiving products over an electronic network (Ahmad et al., 2015; Ashrafi et al., 2014; Agwu and Murray, 2015; Asghar et al., 2013). The common application of this type are in areas of purchasing products and information, and personal finance management, which pertains to the management of personal investments and finances with the use of online banking tools. Business-to-consumer (B2C) e-commerce is the activity in which consumers get information and purchase products using Internet technology. The potential benefits of e-commerce have been widely touted. However, Abebe (2014) posited that for these information technology-enabled benefits to materialize, consumers must first adopt online activities, such as getting information and purchasing products from commercial websites. In B2C e-commerce adoption, the consumer's engagement in online exchange relationships with Web vendors goes beyond the realm of traditional marketing, and it must thus be understood from the viewpoint that online consumers are simultaneously IT users.

Awiagah et al. (2015) put forward that the usage of information technology encompasses not only use of hardware and software, but also the services that surround the IT and the people and procedures that support its use. B2C e-commerce thus presents a unique opportunity to examine a user's interaction with a complex IT system. E-commerce adoption is an instance of IT acceptance and use within a setting that combines technology adoption with marketing elements, and it thus requires distinct theorization within the information systems literature. However, despite an emerging interest among IS researchers toward the B2C e-commerce

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phenomenon, there is only a limited and fragmented understanding of online consumer behavior. B2C e-commerce has some notable differences compared to traditional consumer behavior (Abbad et al., 2011; Abou-Shouk et al., 2012). First, the spatial and temporal separation between consumers and Web vendors increases fears of seller opportunism due to product and identity uncertainty. Second, personal information can be easily collected, processed, and exploited by multiple parties not directly linked to the transaction. Third, consumers must actively engage in extensive IT use when interacting with a vendor's website, which has become the store itself. Fourth, there are concerns about the reliability of the open Internet infrastructure that Web vendors employ to interface with consumers. Apulu and Ige (2010) believed that these differences stress the uncertainty of the online environment and emphasize the importance of consumer trust and the significance of IT adoption. More importantly, they reduce consumers' perception of control, confidence, and effortlessness over online activities, creating a barrier to e-commerce adoption. Apulu et al. (2011) mentioned that compared to traditional consumer behavior, perceived behavioral control (PBC), as described in the theory of planned behavior (TPB), is likely to play a critical role in B2C e-commerce.

2.4.2.2 Business to Business (B2B)

Abbad et al. (2011) viewed Business to Business (B2B) system as a business that sells to other businesses using internet or a private network to cut transaction costs and increase efficiencies. This variably means by virtue of B2B commerce system businesses can sell or exchange goods and services that are components for manufacturing final products or for re-sell directly cutting out traditional intermediaries. Thus, business to business system replaces the old fashioned bureaucratic procurement process built on phone calls and fax machines and provided substantial cost savings (Awa et al., 2011; Awa et al., 2010; Azam and Quaddus, 2013). According to Abor and Quartey (2010), about 80% of e-commerce is of this type and most experts predict B2B e-commerce will continue to grow faster than the B2C segments. Most B2B applications are in areas of supplier management, inventory management, distribution management, channel management and payment management. Janita and Chong (2013) found that some academics and practitioners have admitted that ICT has brought significant transformation to business practices. The impacts of ICT are also found to be profound in Business to Business (B2B) sectors (Ayo et al., 2011). For instance in the United States of America, B2B online transactions reached the total amount of US$56.8 billion which accounted for about 70% of the Internet economy revenues (Apulu and Ige, 2010; Apulu and Latham, 2011; Apulu et al., 2011). Moreover, the development of ICT has enabled B2B to use Internet as a business tool to obtain greater competitive advantages, capture global markets and increase the efficiency of business transaction processes. Therefore, due to the benefits above, many firms are appealed to implement Internet-based technologies as their e-Business application infrastructure.

2.4.2.3 Business to Government (B2G)

Business-to-government e-commerce or B2G is generally defined as commerce between companies and the public sector (Qureshi et al., 2010). The authors added that it refers to the use of internet for public procurement, licensing procedures, and other government related operations. This kind of e-commerce has two features; first, the public sector assumes a

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leading role in establishing e-commerce usage; and second, it is assumed that the public sector has the greatest need for making its procurement system more effective (Schwarz et al., 2010; Thulani et al., 2010). According to Ayo et al. (2011), e-government is part of the civil service reforms which was designed to make the Nigerian Civil Service proactive and respond quickly to the needs of the general populace. In the same vein Pham et al. (2011) pointed that the project was designed to reduce bureaucracy that attends to government businesses in the country through the introduction of e-tax, e-learning, e-procurement, e-pricing, e-mail, e-tourism, e-payment, e-revenue, e-policing, e-judiciary, e-health, e-agriculture, e-services, e-kiosk, e-buka etc.

2.4.2.4 Consumer to Consumer (C2C)

Qureshi et al. (2010) perceived consumer-to-consumer (C2C) as commerce between private individuals or consumers. Hence, with the growth of ICT businesses can buy from or sell to anyone including individuals. This type of e-commerce create potentials for developing new markets for private individuals or consumers.

2.4.3 E-commerce Technology Adoption in Developing Countries

E-commerce contributes to the advancement of businesses in developing countries. It is driven by the perceived potential of the internet and communication technologies in reducing transaction costs by by-passing some, if not all, of the intermediary and facilitating linkages to the global supply chains (Pookulangara and Koesler, 2011). It is believed that e-commerce promises many benefits, ranging from modest advantages such as reduced communication and administration costs, and improved accuracy to transformative advantages including enabling business process re-engineering or supporting industry value chain integration initiatives such as just-in-time inventory, continuous replenishment, and quick response retailing. Asghar et al. (2013) argued that the electronic business value of ICT-enabled e-commerce lead to improved firm performance in sales, internal processes and customer/supplier relationships through market expansion, improved information sharing efficiency and improved transactional efficiencies. However, businesses, in particular SMFs in developing countries face challenges different from those in developed countries and differs greatly in adopting and benefiting from e-commerce.

According to Kapurubandara (2009), organisations adopting e-commerce in developing countries face challenges such as lack of telecommunications infrastructure, lack of qualified staff to develop and support e-commerce sites, lack of skills among consumers needed in order to use the internet, lack of timely and reliable systems for the delivery of physical goods, low bank account and credit card penetration, low income and low computer and internet penetration. E-commerce adoption in these businesses has only recently gained attention in the academic press (Almoawi, 2011; Apulu and Latham, 2011). Similarly, research related to e-commerce implementation is even scarcer when it applies to SMFs in developing countries. Ahn and Matsui (2011) reported that SMFs are generally lagging behind to large organisations as far as the adoption of e-commerce is concerned. Small firms are required to up their e-commerce strategy or they are going to be shut out of a important segment of the market place. Al-Fadhli (2011) examined the adoption of e-commerce by SMFs and found that they could gain competitive advantage through adopting e-commerce as

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it could improve access to the market. Similarly, the readiness of businesses to govern and regulate e-commerce is an essential element which lacks in developing countries, due to the trust necessary to conduct e-business (Azam and Quaddus, 2013; Abor and Quartey, 2010). Since web and communications technologies are complex and offer a variety of functionalities ranging from the static presentation of content to the dynamic capture of transactions. However, with provisions for security and personalisation, organisations in developing countries must comprehend these technologies and decide how to draw upon their functionalities for effectively developing e-commerce initiatives. Owing to the contextual differences (both organisational and environmental) between these two socio-economic arenas, it is recently warranted to understand how businesses in developing countries could overcome the environmental and organisational e-commerce readiness impediments and benefit from e-commerce.

The e-commerce adoption literature implies that in order to adopt e-commerce appropriately in developing countries, firms need to be internally and externally ready. Alatawi et al. (2013) defined this readiness which is termed e-readiness of an SME as the ability of a company to successfully adopt, use, and benefit from e- commerce. Ahn and Matsui (2011) demonstrated that in initial adoption of e-commerce in developing countries, internal (organisational) readiness is significantly influential. Saffu et al. (2008) defined internal e-commerce readiness as the availability of financial and technological resources, the top management's enthusiasm to adopt e-commerce, e-commerce technology infrastructure, compatibility of the firm's e-commerce, as well as culture and values. On the other hand, it was suggested that after the initial e-commerce adoption, external readiness (for example, whether business partners allow an electronic conduct of business) significantly affect institutionalisation of e-commerce in developing countries (Alberto et al., 2013; Aminu, 2013; Abbasi et al., 2010; Aziz, 2010). These discussions imply the necessity of business maturity regarding the readiness prior to e-commerce adoption in developing countries. This study examines in the preceeding sub-sections the adoption of electronic commerce in some developing countries.

2.4.3.1 Electronic Commerce Technology in Nigeria

Nigeria is the fastest growing telecommunication country in Africa (Ayo et al., 2011). The growth of a number of Internet users from year 2000 to 2010 is sporadic as it recorded 21,891.1% growth rate. According to the Internet World Start (2010), there were 200,000 internet users in Nigeria in year 2000. This number is however less than 1% of the national population (precise 0.1%). In the year 2006, the number has grown to 5,000,000 (again just 3.1% of the national population). This figure doubled in 2008 with 10million people having access to the Internet (Oluyinka et al., 2013; Olatokun and Kebonye, 2010). In 2009, the figure went above double as 23,982,000 million people used Internet in Nigeria. By June 2010, the number of internet users has grown to 43,982,200 million people, that is 29.5% of the country's population. Agwu and Murray (2015) opined that the increasing users of internet in Nigeria from 0.1% - 29.5% in one decade revealed that the use of internet in the country is growing at a sporadic rate and still has the potential to grow higher. Despite the growth of internet users in the country, much research has not been done in accessing the B2C e-commerce activity. Presently, many online shopping sites are thriving, servicing

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thousands of searchers every week. Some of them are: www.234world.com, Xtaples.net, www.booksng.com, www.orderbay.com. Etemad (2004) found that some of these sites make the transaction process so easy that some buyers easily ignore about the open market. A site like 234world.com allowed buyers to pay to a designated bank account after making online purchases. The items purchased are then shipped to the buyer at the speed of light. SoftPay allow individuals to receive money online and thereafter use it to pay for purchases made. It even helps online shopping sites to collect payment for purchases made (Zhang et al., 2010; Matlay and Mitra, 2004; OECD 2009; Etemad, 2004). Considering all these, it is expected that the number of people engaging in e-commerce activity will increase. E-commerce has however not been widely tapped into. Many Nigerians still treat its benefits with deep skepticism. They do not believe that e-commerce transactions could be successfully conducted. Zhang et al. (2010) reported that while there is proliferation of Internet usage, e-payment systems and online presence of businesses, much work has not been done about business-to-consumers activities, hence, there is need to understand how and why people participate in e-commerce activities.

2.4.3.2 Electronic Commerce Technology in Slovakia

MacGregor and Kartiwi (2010) defined e-commerce as business activities conducted using electronic data transmission via the Internet and World Wide Web (www). Ifinedo (2011b) defined e-commerce as the use of the Internet to buy, sell, or support products and services. According to Turban et al. (2010), e-commerce is the process of buying, selling, transferring, or exchanging products, services and or information using computer networks mostly the Internet and Intranets. Saffu et al. (2012) posited that e-commerce is the use of the Internet for conducting business. A number of studies have looked at factors that Internet users consider important for the success of Internet commerce (Yadav and Zeng, 2010; Zaied, 2012; Zeng et al., 2010). These factors include the value and benefits of finding, ordering, and receiving goods; online payment, shipping errors, and vendor trust, as well as perceived value of the vendor's products and services and shopping convenience. Factors that have been identified as influencing the adoption of e-commerce by firms include; relative advantage, compatibility, organizational readiness, and managerial support (Alam, Ali, and Jani, 2011; Ifinedo, 2011b; MacGregor and Kartiwi, 2010; Pham, Pham, and Nguyen, 2011). Additional benefits of electronic commerce adoption include; access to international markets at minimal cost, a reduction in transaction costs, and the provision of new business opportunities have also been mentioned. Zhu and Thatcher (2010) have drawn attention to supportive government policies and socio-cultural infrastructure. For small and medium-sized firms, e-commerce poses a threat, because they do not have the same financial and human resources capability as large multinational firms with whom they are competing.

However, most of the technology adoption research has been carried out in developed countries, for example, Canada and the United States (Schwarz et al., 2010; Thulani et al., 2010). Researches in developing countries are limited. Saffu et al. (2012) suggested ways to assists Slovakian SMFs to take action to ensure effectiveness in adopting e-commerce. Firm-level Internet adoption strategies must be understood and implemented. Al-Shaikh et al. (2010) investigated the link between the perceived strategic value of e-commerce and its adoption by SMFs. More specifically, it focuses on understanding and implementing firm

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level e-commerce adoption strategies by SMFs in a transitioning country, Slovakia. The goal is to ascertain if the determinants in Slovakia are the same as those identified in the extant literature in developed countries. Slovakia has been successfully transitioning from a Soviet-style centrally run economy to a modern market economy. Zeiller and Schauer (2011) opined that significant economic reforms have been made by Slovakia since it separated from the Czech Republic in 1993. Between 2004 and 2006, Slovakian SMFs created more jobs than large enterprises, outpacing the EU average for the same period. The Slovakian government has formulated a competitiveness strategy that incorporates the information society. Welsh and Zellweger (2010) concluded that the use of IT is one of the best approaches for Slovakia to become a dynamic, knowledge-based economy.

2.4.3.3 Electronic Commerce Technology in Malaysia

Lim et al. (2013) argued that e-Commerce is a powerful tool for entrepreneurs to expand their marketplace over the Internet. The successful stories about 'Amazon.com' had motivated and encouraged the entrepreneur to change their business model to e-business model. Zeiller and Schauer (2011) mentioned in some developing countries failure to get the benefits from the Internet. The Malaysian government realized the importance of e-commerce. Hence, in the Ninth Malaysia Plan (year 2006 - 2010), the government had allocated RM12.9 billion to boost e-commerce and the framework (Kannabiran and Dharmalingam, 2012). According to the news reported from local press released on April 18th, 2012, a senior officer from Malaysia External Trade Development Corporation (MATRADE) commented that e-commerce adoption among SMFs in Malaysia is still low, only 28% out of the 965 participants adopt the technology (Zhu and Thatcher, 2010; Zeiller and Schauer, 2011; Zulkifli et al., 2010). The e-commerce adoption rate in Malaysia is relatively low compared to other developing countries, although still higher than several others. Turban et al. (2000) argued that e-commerce is the delivery of information, products or services, payments over telephone lines, computer networks, or any other electronic means. Ahmad et al. (2015) listed 19 e-commerce tools found common in Malaysia as: (1) Prepaid cards, (2) Smart cards, (3) Credit cards, (4) Electronic fund transfer, (5) Logistics, (6) Procurement, (7) Online sales order, (8) Online application, (9) E-mail, (10) Customer feedback, (11) Online product updates, (12) Online help FAQ, (13)Electronic catalogues, (14) Third-party website, (14) Home page or website, (16) Display Information & product, (17) Research on Competitors, (18) Research on Suppliers, and (19) Research on Consumers. Lim et al. (2013) found based on an intensive case study, the adoption of e-commerce site could be measured with these potential factors: organization, consumer and governmental. Ashrafi et al. (2014) reported that in Malaysia, shopping in the mall is part of Malaysian's culture. In addition, there are many convenient shops available in the country. Ahmad et al. (2010) stressed that the era of e-commerce and economic globalization, acquiring ICT to support business needs, regardless of business size, is a crucial pre-requisite in exploiting the potentials of IT. Hence, illiteracy in information technology will greatly reduce the competitiveness of an enterprise. According to the Malaysian Minister of Entrepreneurship and Development, about 70% of SMF owners in Malaysia are IT illiterate (Al-Gharbi and Ashrafi, 2010). The SMF owners in Malaysia possess below-average ICT skills and seldom use the Internet at their workplace. In terms of innovation characteristics, these are in the complexity category, which means that they find IT adoption difficult.

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2.4.3.4 Electronic Commerce Technology in South Africa

Small and medium firms sector in South Africa accounts for 40% of GDP and 60% of the workforce in the formal employment (Baker, 2011; Belso-Martinez, 2010). The World Wide Worx Report indicates that more than R2 billion was spent on online shopping in South Africa in 2010 but the rate of e-commerce adoption on SMF is still rather low. Electronic Commerce (e-commerce) has been predicted to be a new driver of economic growth for developing countries (Burke, 2010; Boothy et al., 2010). Adopting e-commerce has not been easy for SMFs world-wide (Jones et al., 2011) partly because of the ever-changing field of information systems and the varying needs of local and global businesses in general. Misra and Mondal (2011) argued that the adoption of e-commerce in SMFs remains a critical area of investigation in information systems research. Previous studies of ICT and e-commerce adoption report that SMFs in developing countries generally have not capitalised on the power of the Internet to extend their business beyond traditional borders except in the application of simple technologies such as electronic mail (Mpofu and Watkins-Mathys, 2011; Misra and Mondal, 2011). Some of the reasons put forward from the literature include: cost of acquiring and operating ICT, lack of ICT and e-commerce knowledge, owner/manager low literacy levels, inability to perceive e-commerce benefits, unfriendly regulatory policy and requirements, cultural issues and dependence on customer or supplier preferences. According to Cragg, Caldeira and Ward (2011), a low level of organisational readiness is a key reason for slow adoption or an inability to adopt e-commerce. Several e-commerce adoption studies in SMFs have been undertaken in developed countries (Cragg and Mills, 2015; Culnan et al., 2010). Similarly, studies in developing countries can be represented by Oluyinka et al. (2013), although the overall representation in scholarly publications shows that there are fewer studies in developing countries. Researchers do agree that a one-size-fits-all model may not be attainable (Almoawi and Nasser, 2011; Ahmet and Savrul, 2012). A key area of concern in the previous studies is the lack of detail on how e-commerce adoption by SMFs is undertaken as most researchers have used exploratory research methods such as surveys that lack depth and theoretical foundation. In addition, the unequal distribution of ICT infrastructure, products and services between the developed and developing countries or urban and rural SMFs also accounts for differences in how e-commerce is valued and applied in organisations. Almoawi and Nasser (2011) mentioned that researchers indicate e-commerce offers viable and practical solution for organisations to meet challenges of a predominantly changing environment, available studies related to SMFs in developing countries reveal a delay or failure of SMF adopting e-commerce.

2.4.3.5 Electronic Commerce Technology in Kenya

Electronic commerce can be defined as any economic activity that uses ICT based applications to enable the buying and selling of products and services and to facilitate the transaction of business activities between and among businesses, individuals, governments or other organisations (Martinez-Caro and Cegarra-Navarro, 2010; Mimecast, 2010; Misra and Mondal, 2011). This includes using ICTs to strengthen a company's internal operations, such as logistics, procurement, and human resource and contracts management, information and data management, communication functions, and to facilitate the flow of products between

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businesses and consumers, e.g. marketing, ordering, payment, delivery, and searching for suppliers (Okoro and Kigho, 2013; Oliveira and Martins, 2011; Oliveira and Martins, 2010). Adoption of electronic commerce offers a great opportunity to SMFs to gain greater global access and reduce transaction costs, provides substantial benefits via improved efficiencies and raise revenues; facilitates access to potential customers and suppliers, productivity improvements, customization of products and services and information exchange and management (OECD 2009). However, usage patterns among SMFs in Kenya show a slow progression from the use of the Internet for communication to use of the Internet for research and information search, to the development of websites with static information about a firm's goods or services (Okoro and Kigho, 2013; Oliveira and Martins, 2011; Oliveira and Martins, 2010). According to WTO (2013), the Internet is revolutionizing the distribution of tourism information and sales. An increasing proportion of Internet users are buying online and tourism will gain a larger and larger share of the online commerce market. Obviously, the Internet is having a major impact as a source of information for the tourism sector. However, there is limited systematic research into the challenges firms face in adopting electronic commerce in developing countries and in particular the SMFs in Kenya. Furthermore, e-commerce has transformed some sectors of SMFs, most notably; the travel and finance sectors which have relatively managed to develop successful stand-alone, online initiatives and integrated e-commerce applications into traditional business processes (Tiago and Maria, 2010; Turban et al., 2010). Online travel and finance enterprises succeeded because they based their products on information and services that were quickly available 24 hours a day, seven days a week, as opposed to selling and shipping tangible goods. The growth of on-line travel services was also enabled by the advent of electronic tickets which did not need to be shipped to customers (Tiago and Maria, 2010; Turban et al., 2010). In Kenya, tour companies including travel agencies as well as specialty tour companies such as driving and adventure tour operators, have also been able to obtain significant amount of new businesses through the Internet, much of which are organized through electronic mail. Tour companies use their websites as their primary channel for obtaining new customers or booking return visits (Oliveira and Martins, 2010). The most successful websites have generic, easy to find names and have registered with search engines (WTO, 2013). The development of tourism in Kenya has been a success story and the industry has contributed to the growth of the country's GDP, raised the foreign exchange earning capacity, and has created employment opportunities.

2.4.3.6 Electronic Commerce Technology in Ghana

The Ghanaian Government (2003) claims that Ghana is one of the few African countries with a liberalized telecom market and a vast array of Internet service providers, ranging from total telecommunications products and services to customized data management services (Awa et al., 2010; Azam and Quaddus, 2013; Ahiawodzi and Adade, 2012). The country encouraged industrial Internet usage by focusing on major industrial sectors such as tourism, banking, and manufacturing. Internet user growth in Ghana was held back for many years by the poor condition of the national fixed-line network and the high cost of connectivity. As a result, Internet penetration languished below 10% of the population (Ahiawodzi and Adade, 2012; Alrawashdeh et al., 2012). However, the sector developed rapidly following the introduction of wireless and third-generation (3G) mobile and wireless broadband technologies such as High Speed Packet Access (HSPA), Worldwide Inter-operability for Microwave Access

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(WiMAX), and iBurst. Augmented international connectivity combined with the rollout of national fiber backbone networks by a number of players is continuing to revolutionize the country's broadband market and pave the way for the convergence of technologies and services. Abor and Quartey (2010) indicated that these improvements have generated subscriber growth at the expense of the Average Revenue per User (ARPU), which has fallen below US$5 per month for some operators. Further, BuddeComm (2013) reported 100% voice market penetration in mid-2013 (Alghamdi et al., 2012; Aminu, 2011). These developments provided mammoth potential in both subscriber and ARPU terms for 3G mobile broadband services, which already account for a greater proportion of Internet connectivity in the country. In 2011, Ghana had an estimated 2,085,501 Internet users, a major increase over the estimated 3000 Internet users in 2000 (WTO 2013). This estimate corroborates Awa et al. (2011), who indicated that over 2 million Ghanaians have access to the Internet. Estimates suggested that Ghana's Internet user per 100 inhabitants is steadily increasing. Research conducted on the growth and usage of Internet in Ghana showed that 40.6% of Ghanaians depend on the Internet for information on products and services (Awa et al., 2011; Awa et al., 2010; Azam and Quaddus, 2013); many Ghanaian businesses and individuals employ the Internet and e-commerce to enhance their businesses and remain competitive.

2.4.3.7 Electronic Commerce Technology in Oman

Oman is a developing country in the Gulf Cooperation Council (GCC). The ICT adoption in Oman is relatively low in comparison with developed countries around the globe. Ahn and Matsui (2011) stressed that among the GCC countries, Oman is one of the relatively less developed markets for personal computers. However, most of the large and international organizations in Oman use ICT in their workplace, enabling the workforce to share resources and to communicate with each other effectively (Ahn and Matsui, 2011; Al-Fadhli, 2011; Alghamdi et al., 2012; Aminu, 2011). Many organizations in Oman have spent substantial amount of money on the development of ICT infrastructure. In spite of this, the status of ICT adoption in SMFs is not similar to that of large and international enterprises for various reasons as reported in empirical literatures. Elmazi et al. (2011) reported that one of the main barriers in ICT adoption is the lack of awareness of benefits offered by the technology. Edesiri et al. (2013) evaluated the factors that motivate SMFs to use ICT in their daily operations. The model suggested by the authors emphasized on the investigation of the direct and indirect influences of technological, cultural, environmental and organizational factors on the ICT adoption by SMF's in United Arab Emirates. Apart from this, there is a very limited research available in the literature that discusses organization and management practices and types of benefits achieved by ICT in organizations in the Middle East in general and GCC countries, in particular. El-Gohary (2012) stated that decision makers in Oman have taken steps to develop ICT infrastructures. The author added that the growth of ICT development continues to increase as technology evolves and IT solutions have now been adopted in most of the public and private sectors. At present, there are two main companies, Omantel and Nawras that provide GSM services, leased lines, internet services and land telephone lines in Oman. Other companies were given permission to operate as resellers of the GSM services in Oman and by 2010 there were five such companies (Asikhia, 2011; Auta, 2010). In 2007, Omantel and Nawras started providing broadband wireless services which enable subscribers

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to access internet from both home and public places. El-Gohary (2012) concluded that the government's e-Oman goals include bridging the digital divide and making e-government services available to the whole population.

2.4.4 Electronic Commerce Technology Adoption Factors

Previous research has established the factors that influence different information technology adoptions (Abebe, 2014; Alberto et al., 2013; Aminu, 2013; Abbasi et al., 2010). These factors can be categorized as organizational readiness, compatibility, external pressure, perceived ease of use, and perceived usefulness. Organizational readiness was conceptualized as the financial and technological resources at the disposal of the firm to adopt e-commerce technology. Aziz (2010) opined that organizational readiness includes the top management's enthusiasm to adopt IT, existing technology infrastructure, compatibility of the firm's e-commerce, and culture and values. Compatibility has been found to be a significant factor that impacts on adoption of IT and e-commerce (Afshar et al., 2011; Ahmad et al., 2010; Al-Shaikh et al., 2010). EP includes competition, the government, industry, and reliance on firms that are using e-commerce.

Perceived EU addressed the extent to which a firm's perceived adoption of e-commerce would be effortless. Finally, PU implies the extent to which a firm using e-commerce perceived it to be useful in terms of an improvement in corporate job performance. The connection between PSV and adoption is captured by the theory of planned behavior (TPB), which argues that perceptions influence intentions, and they, in turn, influence human behavior. Agwu and Murray (2015) have used the TPB to predict and explain behavior such as the use of IT. A strong association between the perceptions and attitudes of managers toward IT types and use has also been established by prior research. Saffu et al. (2012) stressed that younger people are taking on more important IT positions within Slovakian SMFs, which may be ascribed to the pervasive computing society in which we live. Findings for the 211 Slovakian SMFs show that PSV and e-commerce adoption are significantly and positively related. Afshar et al. (2011) reported that PU was also the most influential factor in the decision to adopt IT. EU is the second most important factor in e-commerce adoption by Slovakian SMFs. Therefore, e-commerce must be easy to use for adoption by Slovakian SMFs. While these findings are concurrent with Alberto et al. (2013), findings of SMFs in the United States, as well as Saffu et al. (2012) findings of SMFs in Ghana, they contradict the findings of Awiagah et al. (2015) findings of Chilean SMFs. The RC factor was slightly less important than EU in the study of Slovakian SMFs' e-commerce adoption. That is, factors assessing how compatible and consistent e-commerce is with the SMF's culture, values, and work practices are as important as those factors assessing the financial and technical readiness of the SMF. The authors also revealed many reasons why organizations should adopt EDI to include; improved customer service, improved control of data, reduced clerical errors, reduced administrative cost, decreased inventory cost, increased sales and decreased manufacturing costs. Though the research is on EDI adoption, the same can be related to the adoption of e-commerce and the reasons can be subsumed as e-commerce, market and technology related. Al-Shaikh et al. (2010) argued that adoption of e-commerce can create competitive advantage by coordinating the linkages with outside firms and such integration would streamline inter-company exchange process and thus reduce the costs of

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communication between sellers and buyers. Awa et al. (2011) posited that in small businesses relative advantage is the key positive variable influencing IT adoption in organizations. Azam and Quaddus (2013) put forward that most IT/IS adoption research has shown that the relative advantage is an important influencing factor and that this factor is positively related to adoption decision.

Earlier studies found that not only the relative advantage but also competitive pressure, consultant support and managerial enthusiasm motivate the growth of IT application of small businesses (Ahn and Matsui, 2011; Al-Fadhli, 2011; Alghamdi et al., 2012; Aminu, 2011). In addition, Aminu (2011) argued that perceived direct benefits, prior EDI experience and perceived level of support from vendor were positive variables, while neither the level of perceived and direct benefits nor governments influence were significant factors. Afshar et al. (2011) stressed that adoption of innovation is impacted by five attributes:

1. Relative advantage is the degree to which an innovation is perceived of being better than it's precursor.
2. Compatibility is the degree to which an innovation is perceived as being consistent with the existing values, needs and past experiences of potential adaptors.
3. Complexity is the degree to which an innovation is perceived at being difficult to use.
4. Observability is the degree to which the results of an innovation are observed to others.
5. Inability is the degree to which an innovation may be experimented with before adoption.

Economic Forces: According to Oluyinka et al. (2015) argued that one of the most evident benefit of e-commerce is economic efficiency resulting from the reduction in communication costs, low cost technological infrastructure, speedier and more economic electronic transactions with supplier, lower global information sharing and advertising costs, and cheaper customer service alternatives.

Market Forces: E-commerce big and small businesses can market and promote their products and services on the internet. There is no doubt that more and more people are able to have access to the internet through computers, television, telephones and mobile phones.

Technology Forces: The development in ICT as well as advances in digitalizing content has made communication more efficient, faster, easier and more economical as there is no need to set up separate networks since as many networks can be served by a single server that provide universal access.

2.4.5 Levels of Electronic Commerce Adoption

Past studies have divided the e-commerce implementation process into stages of development. This has enabled the assessment of levels of e-commerce adoption within organizations to be made (Abou-Shouk et al., 2013; Awa et al., 2015). Thus, a four-stage e-commerce model in organizations is classified using basic Internet tools and the development of web pages. In the second stage, web business systems are built. The third stage involves further integration, where changes to processes, structures, skills, and technologies are

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undertaken (Abbasi et al., 2010). The final stage is e-business where technology is fully integrated into the organization's operations. Aziz (2010) proposed four sequential clusters. The first cluster is when developers use minimal levels of operational e-commerce services. The second cluster is the communications stage, when websites are developed and used for market research, exchanging documents and designs with customers or suppliers (Alberto et al., 2013; Aminu, 2013). The third cluster is web presence. This is similar to the second cluster but the firm can also receive orders online. "Transactors" make up the fourth cluster; this encompasses all the activities from the third cluster together with the provision of after-sales services, online payment, ordering and payment for inventory online, and online delivery of digital goods and services (Alshamaila et al., 2013; Abou-Shouk et al., 2013; Awa et al., 2015). The e-commerce process of implementation often appears to begin with the firm's brochureware stage, during which e-mail and websites are used. Implementation then moves on to the business opportunity stage, when businesses communicate internally and with their customers. These two stages are perceived as the "no plans for growth" stages of an enterprise's e-commerce strategy. At the stage of "planned growth," a business network is developed for the online integration of the firm's retail sales, back offices, and staff, as well as the use of an EDI system. In addition to the models already examined, a staged model was developed by Alatawi et al. (2013). "Broadcast" is the first stage identified, encompassing a static webpage. Then, the Internet is used to interact with customers, forming the second stage.

The third stage involves using online ordering systems. Four strategies for e-commerce development was discussed, each strategy has its own benefits and disadvantages for development. The first strategy is having a presence on the web, and portal development is the second strategy. The third is transaction integration, where e-marketplace auctions and online transactions are supported (Alamro and Trawaneh, 2011; Alatawi et al., 2013; Al-Hujra et al., 2011). Enterprise integration is the fourth strategy, in which businesses are fully integrated online, enabling a high level of collaboration. Global e-commerce is the fourth and the most mature stage of e-commerce. The first two stages of Abor and Quartey (2010) six-stage model are both classed as e-commerce non-adopters. Non-adopters with no interest in e-commerce and non-adopters with an interest in launching e-commerce are initially distinguished. Following this, the first stage for e-commerce adopters is electronic information search, content creation, and the conversion of information to digital form. The second stage is electronic transactions, where e-catalogues are used to buy and sell services and products. The third stage is complex electronic transactions, where contracts with customers are negotiated and e-payment from customers is made available. Electronic collaboration is the fourth stage, including complex integration with customers and suppliers. Alamro and Trawaneh (2011) used the concepts of "attract," "interact," "act" and "react" to encapsulate the four stages of e-commerce adoption. Extensive promotion is used to attract customers, followed by interaction between the business and its customers. Successful interaction would then lead to the act of order processing, delivery, and realization of payment (Alamro and Trawaneh, 2011; Alatawi et al., 2013; Al-Hujra et al., 2011). The reaction stage is where customers provide feed-back and after-sales service is offered. Adopters have also been classified into starters, and low-level adopters of e-commerce, with passive webpages. E-commerce adopters who use e-mail and websites to sell and collect

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money online are classified as advanced-level adopters, whereas extended adopters are those who also use the intranet and extranet. Al-Hujra et al. (2011) suggested that there are four levels of e-business. The first entails information search, and e-mailing to communicate with customers and suppliers. The second level is online marketing through a static website and the extensive use of e-mail. Online ordering and order placing with manual payment is considered to be the third level. The final level includes online transactions, supporting online payment, and the integration of front-end and back-end systems to enable expansion into the international market.

2.5 Social Media Instruments Adopted in Business

Social media tools such as Facebook and Twitter have emerged as new channels which are constantly used by firms to create and capture business value (Apulu et al., 2013; Al-Gharbi and Ashrafi, 2010). Prominent advantages of social media tools include: (a) their capacity to enable improved consumer shopping experiences, by leveraging outputs such as buying-experience, information among friends and relatives, and real-time sharing of purchase activities with friends before taking final purchasing decisions. All of these enables such channels to play a critical role in the business environment by attracting and retaining online consumers; (b) their ability to allow a given organization to communicate and collaborate not only with its customers, but also with its suppliers; and (c) their impressive capacity to establish relationships of trust among supply chain partners, as well as to identify prospective business partners in terms of B2B selling (Alam et al., 2011; Ayu and Abrizah, 2011). According to Chuchuen and Chanvarasuth (2011), social media are changing the way companies can interact and engage with their customers, as well as the way they can interact and collaborate internally with their employees. Chiliya et al. (2011) added that social media initiatives have resulted in a restructuring of the marketing function, as well as the way companies think about their relationships with customers, business partners and internal employees".

Currently, Twitter is the fastest growing Web 2.0 technology when compared to other micro-blogging platforms. In addition, Twitter offers several advantages when compared to other social media tools. Twitter can be used to capture an emotional roller coaster in order to predict the ups and downs of the stock market. Also, it is very easy to gain followers on Twitter, and therefore engage with them before even becoming their friends (Den Hoogen, 2010; Davis et al., 2010). These advantages contribute to Twitter's popularity. For example, twitter.com is currently ranked the 291st most visited website in the UK, where the Internet traffic has increased by 974% from 2008 to 2009. Comparatively, the Web traffic went up to about 517.9% in Australia during the same period. In the USA, the awareness of Twitter went from 5% among Americans aged 12+ in 2008 to almost 87% in 2010 (as compared with Facebook, 88%). More importantly, about 51% of active American Twitter users follow companies, brands or products on social networks, thereby positioning Twitter as an important marketing tool (Chong et al., 2011; Chong et al., 2014). The popularity of Twitter is also evident through its innovative use by some firms. For example, Chong et al. (2011) examined recruitment using Twitter compared to other recruitment methods. The authors found that online recruitment using social media platforms like Twitter is not only a viable hiring means, but also an important factor in the understanding of emerging Internet-based

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phenomena. While reviewing the use of Twitter in the last Singaporean elections to look at whether the messages posted online reflected the opinions of the potential voters. Then, drawing on Twitter's data obtained during the official campaign period of the 2011 Singapore General Election, they tested the predictive power of tweets in forecasting the election results (Cragg and Mills, 2015; Culnan et al., 2010). The authors found that during elections the Twittersphere may represent a rich source of data for gauging public opinion and that the frequency of tweets mentioning names of political parties, political candidates and contested constituencies could be used to make predictions about the share of votes at the national level. Even if there is an increased number of articles on the adoption and use of Twitter by large organizations seeking business value creation (Chan et al., 2012; Chen et al., 2012; Chong et al., 2012), little has been written about Twitter adoption and use by SMFs considered as the engine of the economies of many countries for the sake of improved business operation optimization.

In fact, SMFs are at the core of economic growth in many western countries. For example, they represent roughly 99% of firms in the European Union, generating approximately 70% of all employment in the Union. In the U.S., SMFs generate about 39% of the country's gross national product (GNP) and produce almost the two-thirds of jobs (Chuchuen and Chanvarasuth, 2011; Chiliya et al., 2011). Moreover, early studies on IT adoption and use reveal that SMFs are far less likely to use emerging technologies than larger organizations. In short, SMFs are failing to make good use of information technology. Electronic commerce has been touted as a cost effective avenue to reach global customers, by gaining market shares. This is however achieved by streamlining a wide spectrum of business processes and technology for competitive advantage utilizing telecommunication and relationship improvement networks. This is however advantageous to adopters who are willing to internally and externally improve communications with the use of efficient resources and skilled-staff.

According to MacGregor (2010), e- commerce encompasses a wide spectrum of business processes and configuration of technology resources to facilitate how business managers perform their tasks, interact with customers and conduct their businesses. Chuchuen and Chanvarasuth (2011) stressed that adopting internet's connectivity aspect for business purposes has changed the way organisations communicate internally and externally. Internally, it has changed how they buy and sell on the web and share information; while external communication activities increases efforts to understand customers, suppliers, business partners and competitors (Belso-Martinez, 2010). There are different categorisations of e-commerce by different authors in different contexts. Chiemeke and Evwiekpaefe (2011) categorised various model of e-commerce into: commitment to offer national transactions such as local government services, national government information, and tax information to its citizens and other stakeholders via online medium. Furthermore, Baker (2011) in their submission noted that C2C interactions are very important model in internet based transactions and further suggested the need for firms to take such innovation into consideration in their market planning efforts. Their assertion is exemplified by the growth of social media network sites in recent times such as Facebook, Twitter, LinkedIn, etc.

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2.6 Demographic Factors Influencing Adoption of E-Commerce

2.6.1 Age

Age measures a user's date of birth. Studies on generational differences established association between decision-makers' age and organizational characteristics in terms of risk taking (Foon and Fah, 2011; Farhad et al., 2011; Grandon et al., 2011). Age impacts directly on perceived usefulness (PU) both in long and short terms (Ghobakhloo et al., 2011; Ifinedo, 2011b) and on employees' performance of computer-based tasks. Younger executives are much more associated with achievements, speed, novelty, mobility, flexibility, risk taking, and above all, corporate growth. Ifinedo (2011b) surveyed mobile phone users and found that the adoption of new devices is evident among senior executives under 40, where 73% uses mobile phone as their primary communication tool against 28% executives of 50 and above. This provides a glimpse that younger executives are more mobile and more digital; the younger the executives the greater their proclivity to take greater advantage of new applications. Scholars (Gallaugher and Ransbotham, 2011; Gilaninia et al., 2011; Gomez, 2012) proposed that while older executives permit new applications to drive the task; younger executives are increasingly becoming fluent in their language mobility. This has the potential of turning younger executives to device agnostics since they can use the device for many tasks; thus, behaviour is driven less by the available devices and more by the task at hand. Ghobakhloo et al. (2011) suggested that age explains why SMFs in Singapore are probably more innovative and aggressive than those in Taiwan. However, older executives' conservative stance explains the difference in organization's strategic thrusts. Older executives rarely have physical and mental stamina as well as social enablement to grasp novel behavior, exhibit greater psychological commitments to corporate status-quo and place premiums on career and financial security.

2.6.2 Gender

Gender and age of the decision-makers influence a firm's risk taking behaviour and shape strategic thrusts (Demircan and Erturk, 2010; Duan et al., 2012). Gender shapes human behaviour and managerial decisions; it determines the extent of innovative behaviour. Studies (Datta, 2011; Demircan and Erturk, 2010; Duan et al., 2012) show that innovation adoption is faster amongst men than amongst women. For instance, Datta (2011) found perceptual differences between males and females in the use of e-mails, whereas, Curtis et al. (2010) surveyed the relationship between gender and e-commerce adoption and had their findings connected to sex role. Specifically, they report that females use less computer facilities at home than men. In technology-driven markets, early adopters of new innovations are predominantly young males (Curtis et al., 2010; Chilaya et al., 2011; Cragg et al., 2011). The Germany mobile phones market is 60% men and 40% women; thus, men spend more time on mobile phones than women. This may not be the case in developing nations like Nigeria, where many jobless women carry an array of cell-phones in their hand bags.

2.6.3 Experience

Experience they say is a corporate asset and the best teacher. When consistently acquired, experience impacts on operations, cost structure, employee morale and productivity, learning

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curves, and adjustments to market demands. Ayo et al. (2011) opined that experience is rated a significant IDF in technology acceptance research. In addition to other infrastructural resources, lack of CEO's experience and his experience in e-commerce potentials hinder adoption. Favourable experience in terms of an innovation's simplicity, PU, compatibility, amongst others, influence adoption of similar ones on accounts of stimulus generalization, technology cluster, cognitive consistency, affect transfer, categorization theory, and Thorndike's law of effects (Aleke et al., 2011). Therefore, executives' knowledge, skills, attitudes, and practices or internet-use experiences are key adoption determinants. Bolongkikit et al. (2015) explored the relationship between executives' experience and e-commerce adoption processes in small manufacturing firms and found that when experience in e-commerce intensifies, organizations harness the true potential of technology to improve business processes. This is supported by other studies (Dahnil et al., 2014; Dillon et al., 2010; Dixon, 2010) which reported that CEO's knowledge reflects how early or late e-commerce adoption takes place. Dillon et al. (2010) suggested that the industry where the experience is acquired matters; executives who drew experiences from railway are far less apt to be aggressive in adopting innovations than those coming from competitive industries and perhaps have prior experience on e-commerce solutions as evidenced in their skills to simplify its complexities to improve PU.

2.6.4 Education

The top executives' level of formal education is a significant predictor of e-commerce adoption (Baker, 2011; Belso-Martinez, 2010). Education affects proactive and/or reactive approaches to rapid technological changes. To a large extent, educational attainment shapes an individual's value systems, cognitive preferences, ability to learn, dexterity, and innovativeness (Baker, 2011). Although, we literarily believe that better educated persons prefer larger enterprises to SMFs, Rogers (1995) recognized that highly innovative executives aggressively thrive on innovation and often rely on knowledge and experience to advantageously steer up the organization in times of uncertainty. Belso-Martinez (2010) mentioned that this is easier to achieve in SMFs because of their decision-making agility. Educated CEOs are more cosmopolitan in their social relationships, more informed about value creation, more exposed to mass media, show less group cohesiveness, and are more likely to obtain information from scientific sources and experts (Bolongkikit et al., 2015). They have a greater tendency to learn about an innovation and to diffuse its benefits to others (Bolongkikit et al., 2015; Boateng et al., 2011; Bao and Sun, 2010). Conversely, executives with weak education often exhibit high levels of risk aversion because they feel threatened by change and only invest after first-mover advantages may have been lost.

2.7 Electronic Commerce Adoption by Small and Medium Sized Firms

The identification of the need to adopt information communication technology in small and medium sized firms has spurred some countries to invest more on ICT infrastructures and awareness programs so as to obtain the anticipated advantages inherent in it (Dahnil et al., 2014; Dillon et al., 2010; Dixon, 2010). Researchers have discussed adoption of internet and e-business by SMFs in the developed countries (Gallaugher and Ransbotham, 2011; Gilaninia et al., 2011; Gomez, 2012). However, there are limited studies discussing ICT adoption in developing countries. Despite the importance of ICT and the emphasis laid by various

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governments to encourage its adoption, SMFs have been slow in taking it up for various reasons. One of the reasons may be the perceptions that the benefits of ICT implementation may not outweigh the cost. Dixon (2010) revealed that Malaysian SMFs were slow in the adoption of internet-based ICT due to their perceived lack of necessity for their businesses and also due to financial constraints. Gomez (2012) examined the relationships between use of ICT, the benefits a company derives from membership in a rural business cluster and the success of rural companies. Zhang et al. (2010) discussed that ICT project failures in developing countries are higher than those in developed countries, possibly due to the lack of technical and human infrastructure. Yadav and Zeng (2010) also suggested that some of the major ICT initiatives in developing countries have failed to achieve major development outputs. Adoption and diffusion of ICT in SMFs in developing countries is relatively slow. Dahnil et al. (2014) identified that a lack of ICT skills and knowledge in SMFs as one of the major challenges in all European countries, particularly in UK, Poland and Portugal.

In the late 1990s, GCC governments started investment in the development of ICT infrastructure, enabling them not only to renew, but also to expand their ICT infrastructures by implementing new technologies. Dahnil et al. (2014) reported that between 2000 and 2008, the percentage of firms with access to internet increased substantially across the region. Dillon et al. (2010) grouped the major reasons for ICT adoption in Arab countries into two categories: one is related to the basic infrastructure and the other to government policies and regulations. HSBC Middle East Bank estimated that there are only 15,000 to 20,000 SMFs in Oman generating 10-20% of the total employment. This estimate indicated that there is a significant potential for the number of SMFs in Oman to grow, thus increasing their contribution to both GDP and employment and becoming more competitive at both regional and international levels (Gallaugher and Ransbotham, 2011; Gilaninia et al., 2011). According to Dixon (2010), SMFs as well as large companies are expected to invest in ICT in order to deal with increased competition and take advantage of regional opportunities. The business enterprises in Middle East countries in general and GCC in particular, do face challenges of effectiveness and adoption of ICT. However, a lack of key enabling resources, inadequate infrastructure, transient funding and oversight has been found to be the main barriers in ICT adoption in GCC countries.

Small and medium sized firms in Nigeria believe that the uptakes of electronic commerce will revolutionize business operations but when compared with advanced economies, one may be tempted to say Nigerians uphold wait and see (imitative) approach in adopting some of the ICT platforms. Jamali et al. (2015a) mentioned that family SMFs as the majority of family businesses, which in turn are the most spread businesses across the world, play an important role in the global economy, by creating a safe and transparent investment environment, overcoming the milieu of economic crisis. Family SMFs are the crucial section, not merely based on their critical involvement in economy, but presenting a long-term steadiness and responsibility (Usoro, 2010; Ukoha et al., 2011). They represent 70-90% of the global GDP, 50% of the GDP and employment in US (Oluyinka et al., 2013; Olatokun and Kebonye, 2010), more than 60% of the European companies in a vast range of sectors (OECD 2009). In addition, they represent about two-thirds of businesses in Australia (Voges and Pulakanam, 2011), more than 90% of Japanese domestic companies, 95% of the private

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companies in the Middle East. Furthermore, they dominate the industrial sector in Iran by representing about 98% of all businesses (Usoro, 2010; Ukoha et al., 2011; Jamali et al., 2015b). Relatively, the regional advancement in the majority of societies is highly dependent on the family SMFs' contribution. They have a direct effect on poverty reduction and employment by sharing the economic space to the societies' disadvantageous like youngsters and absorbing the redundant manpower, resulting from governments' privatization policies. However, despite the numerous advantages, they evidently suffer from serious challenges such as limited resources, deficiency of internationalization and unknown image (Usoro, 2010).

Ukoha et al. (2011) argued that though the use of e-commerce by SMFs in Nigeria is a new development, nonetheless, the internet services have gained ground in all conglomerates and some medium organizations. However, most small and medium sized firms are still lagging behind in the implementation of the technology in running the affairs of their ventures. The inability of these firms to take advantage of this innovative technology forms the crux of this research. Previous studies have shown that the adoption of IT by SMFs is still lower than expected in Nigeria and many other developing countries (Usoro, 2010). Several barriers to IT adoption have been identified, including: lack of knowledge about the potentials of IT adoption, a shortage of resources such financial and expertise, and lack of skills. Many studies have also focused on identifying the determinants that influence IT adoption (Samuel and Carter, 2013; Singla and Kumar, 2011; Sila, 2013). Some studies looked into a broader perspective of Internet adoption and found that environmental factors such as government intervention, public administration, and external pressure from competitors, suppliers, and buyers play the key role in the adoption and implementation of IT, especially in e-commerce (Sharma et al., 2013; Steinfield et al., 2012; Shehadi et al., 2010). Other studies focused instead on the organizational factors, such as organization support and management support; however, few studies focused on skills and use among the owners (Yadav and Zeng, 2010; Zaied, 2012; Zeng et al., 2010). Hence, this study focused on the adoption of electronic commerce technology among small and medium sized firms in Nigeria.

2. 8 Benefits of Electronic Commerce Technology Adoption

Agwu and Murray (2015) stressed that a well articulated e-commerce within an organisation often facilitates growth and expansion. Awiagah et al. (2015) however stated that the application and use of e-commerce in developing countries can lead to substantial savings in communication costs, marketing, advertising, as well as production processes and the delivery of goods and services to various parts of the globe. MacGregor (2010) further stressed that the possibility of shopping online from anywhere is the most obvious and most commonly cited advantage of e-commerce, and was found to be the most important perceived consumer benefits of internet shopping. Saffu, et al. (2008) in the submissions argued that since the boundaries of e-commerce are not defined by geographical or national borders, consumers will benefit from a wide selection of vendors and products, including a wider availability of hard-to-find products.

The internet can provide consumers with up-to-the minute information on prices, product availability, product types, product alternatives, etc. And consumers may benefit from the

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shopping process being faster in the market-space than in the market-place as a result of the rapidity of the search process and transactions (Agwu and Murray, 2015; Awiagah et al., 2015). The internet has the potential to offer consumers benefits with respect to a partial, or even a total privacy and anonymity throughout the purchasing process. Turban et al. (2010) stressed that by embracing e-commerce consumers may benefit from price reductions as a result of increased competition as more suppliers are able to compete in an electronically open marketplace, as a result of reduced selling prices due to a reduction in operational costs, and manufacturers internalizing activities traditionally performed by intermediaries.

Al-Hujra et al. (2011) viewed e-commerce as responses to the changing environment due to changing tastes and new types of customers who are now demanding quality and the new sets of value propositions of what these customers want, when they want it and how they want it as well as the cost they are ready to pay. In addition, other reasons for e-commerce adoption include but not limited to access to extensive online information. This gives customers access to large amount of information based on which decisions can be made. On price comparison, Alamro and Trawaneh (2011) stressed that the online market place has presented a stiff competition among sellers and there is always a war on price. This however, gives the consumers opportunity to make wide range of choices. On time savings, working parents can conveniently combine their work schedule and shopping with ease. Online delivery has enabled purchases to be delivered with ease on the online channel such as e-tickets, e-books, etc. Al-Hujra et al. (2011) stressed that the whole commercial cycle can be conducted via a network providing instant access to products. Convenience and accessibility means a customer can shop anytime from anywhere in the world and this singular benefit is often the most cited reason for e-commerce adoption. Despite these benefits, several empirical researches on e-commerce which directly relates to barriers have been widely written in various countries of the world. Thulani et al (2010) in their research in Zimbabwe found education and channel knowledge as militating factors to e-commerce adoption. While Oliveira and Martins (2010), in their research on SMFs within the European Union stressed that consumers' who are motivated by convenience are more likely to indulge in online purchases.

MacGregor (2010) found attitude and perceived usefulness as predictors of the usage of the web for retail usage between Australia and Indonesia. Comparative analysis of these findings shows that education and channel knowledge plays key role in Zimbabwe but same was not the case in Europe, rather it bothered on motivation. Savrul et al. (2014) commonly defined e-commerce as the spread and connectedness of production, communication and technologies across the world. Consequently, globalization has also involved the interlacing of economic and cultural activity. In the recent period, the effect of globalisation on businesses and especially small businesses has been the topic of conversation in academic environment (Alamro and Trawaneh, 2011; Alatawi et al., 2013; Al-Hujra et al., 2011). Globalization creates new structures and new relationships, with the result that business decisions and actions in one part of the world have significant consequences in other places. It is argued that the enterprises operating on a global market can take advantage to enhance their international competitiveness via economies of scale, exploitation of lower input costs, risk compensation, optimality of market segmentation. However, it is a fact that not all the firms

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take advantage of globalization equally and it put pressure on SMFs which can't easily find an organisational solution to cope with global business opportunities without suffering from limited resources (Agwu and Murray, 2014; Ajay and Thobeng, 2015; Alrousan and Jones, 2016; Alshamaila et al., 2013). The effect of globalization on SMFs has received a lot of attention in international circles because although they are small, in both developing and developed countries these enterprises make significant contributions to the economy. For many SMFs, instead of competing against large multinational companies, they can take the advantage of opportunities afforded by e-commerce to access new and often distant markets (Awa et al., 2011; Awa et al., 2010; Azam and Quaddus, 2013). In some developing countries, Abor and Quartey (2010) found that personal computer (PC) penetration is low. Thus, an evidence of low e-business readiness existed. Thobeng (2015) reported that PC distribution in Philippines and Thailand is only 20PC per thousand people, whereas in Singapore is 510 PC. In some part of Indonesia, telecommunication infrastructure is still in a poor state where there is only 0.2% of telephone line density. This is a serious problem for emerging countries because of improper telecommunication infrastructure and high cost Internet access and these could become the main inhibitors for businesses to participate in e-Business (Asikhia, 2011; Auta, 2010). Furthermore, e-Business also offers a better way of business transaction between buyers and sellers, where in emerging countries, it might become a problem due to undeveloped online policies and regulation to control online transaction.

A study on Brazilian consumers shows that low e-commerce adoption in Brazil is caused by privacy, security and taxation concern, lack of business laws regulation for e-commerce and poor legal protection for online purchases. Furthermore, in China, trust and security is considered to be one of the dominant obstacles where RMB 5.5 billion is lossed due to violations and fraud, followed by loss of RMB 200 billion from low quality and counterfeit products (Abbad et al., 2011; Abou-Shouk et al., 2012). Thus, developing countries should be aware on these issues while developing and improving its strategy for e-Business adoption in their country. Previous research in SMFs has highlighted a variety of top-level benefits of e-commerce adoption including increasing organizational revenue and profit growth, and guaranteeing stability and future survival in a dynamic and competitive environment. In the context of the global travel market, where disintermediation for SMFs is a threat, opportunities from e-commerce to promote future success and maintain a competitive position in the market could include attracting new investment, and creating new products and services. Aminu (2011) opined that enabling collaboration is another mechanism through which e-commerce can help improve SMFs' competitiveness; interacting with current business partners and finding new ones to strengthen one's market position would be considered as crucial benefits that technology could facilitate. Additional advantages of e-commerce include improving productivity, and realizing economics of scale by increasing sales and reducing costs across all operational processes (Ahn and Matsui, 2011; Al-Fadhli, 2011; Alghamdi et al., 2012; Aminu, 2011). In addition to this, expanding the customer base from an enhanced ability to penetrate global markets through easy access of information on an international scale may be achieved. Another set of recognized advantages relate to customer satisfaction and the enhancement of services. Alghamdi et al. (2012) suggested that focusing on maximizing repeat business and creating a loyal customer base could be realized

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through e-commerce in many ways. They could be achieved through improving customer services in terms of faster response times to enquiries, and enhancing and tracking customer satisfaction.

2.9 Barriers to Electronic Commerce Technology Adoption

Authors have empirically observed that SMFs have actively searched methods that are suitable to integrate e-commerce into their business processes (Almoawi and Nasser, 2011; Ahmet and Savrul, 2012). However, the success of e-commerce implementation could result to increased sales, improved profitability, increased productivity, reduced costs associated with inventory, procurement and distribution, improving the quality of service, and guarantee of competitive position. On the other hand, non success in the implementation of e-commerce could negatively impact on SMFs with their limited resources. Al-Shaikh et al. (2010) examined the adoption of e-commerce by SMFs and found that they firms could gain competitive advantage through adopting e-commerce as it could improve their market performance by having better access to the market. Ahmad et al. (2010) found among other issues that SMFs markets needed a high degree of human interaction. Afshar et al. (2011) argued that SMFs occupy small clearly defined niche markets that do not need global connectivity through experimentation as inhibitors to e-commerce adoption. Organisations adopting e-commerce in developing countries face problems such as lack of telecommunications infrastructure, lack of qualified staff to develop and support e-commerce sites, lack of skills among consumers needed in order to use the internet, lack of timely and reliable systems for the delivery of physical goods, low bank account and credit card penetration, low income, and low computer and internet penetration (Almoawi and Nasser, 2011; Ahmet and Savrul, 2012). Most of the international economies depend basically on the role of SMFs in supporting the national economy in different countries. The sector adds significantly to the economies of the African continent, representing around 90% of all businesses, and providing the main source of jobs and income for African people. Many SMFs in developing countries are not able to attain even minimal levels of e-commerce adoption. In addition, the execution of web-enabled transaction processing by small businesses has not been as widespread as would expect. It has been demonstrated previously that the rate of e-commerce adoption in SMFs has been low (Afshar et al., 2011; Ahmad et al., 2010; Al-Shaikh et al., 2010). The literature suggested that in most developing countries, e-commerce adoption has been hindered by the quality, availability and cost of access to necessary infrastructure whilst developed countries have employed a relatively accessible and affordable infrastructure for e-commerce adoption.

Afshar et al. (2011) reported that SMFs are generally lagging behind to large organisations as far as the adoption of e-commerce is concerned. Hence, SMFs are advised to step up the e-commerce strategy rather than been excluded from the important segment of marketplace. Al-Shaikh et al. (2010) examined the adoption of e-commerce by SMFs and found that they could gain competitive advantage through adopting e-commerce as it could improve access to the market (Afshar et al., 2011; Ahmad et al., 2010; Al-Shaikh et al., 2010). The unhurried pace in the adoption of e-commerce by SMFs indicated they are potentially not gaining competitive advantages which will eventually shut them out of the marketplace. Despite wide coverage of potential growth for e-commerce, little research so far examined the factors

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influencing the adoption intention. Nonetheless, SMFs will not be interested to adopt e-commerce unless the benefits outweigh the cost of developing and maintaining the system (Afshar et al., 2011; Ahmad et al., 2010; Al-Shaikh et al., 2010).

According to Abebe (2014), every new technology, when exposed and comes to the public encounters some difficulties. It takes time for people to get accustomed to the new technology. The other point is that since the technology such as e-payment is new, there should be some tools that should be invented and prepared as a base for expanding the structure of the technology. Most equipment used for e-transactions are expensive and not easy and simple for anybody to apply them. Aziz (2010) mentioned that other problem is to expand and grow the other sectors that are connected with e-commerce such as telecommunication infrastructures and allied services. At least, every user of the technology should be able to afford one phone line and connection to the Internet. The challenges in the embrace of e-commerce by SMFs can be perceived from the external factors that may include economic, technological and social concerns. The internal challenges are poor internal infrastructure, lack of ICT awareness, knowledge by management/owners, workers insufficient financial resources and the perceived ease of use. In general, the main challenges affecting the use of e-commerce are that some organizations delay the adoption of e-commerce because of lack of internal enterprise (Abebe, 2014; Alberto et al., 2013; Aminu, 2013). However, the presence of internal enterprise has been found to contribute to the urge for e-commerce adoption. Abbasi et al. (2010) found that managers innovative and IT knowledge has positive effect toward adoption of e-commerce. Thus, if employees already know about e-commerce, the organization will be more disposed to adopt the technology. The challenge here is that the lack of knowledge and skills on ICT will not allow the manager to push for e-commerce development. However, for those with knowledge and lack the skill, Aziz (2010) study found that the primary difficulties of non-adopters were hiring and retaining skilled information systems experts to set up and implement mechanism. Even though some organizations have basic tools like computers, access to high speed internet facilities, yet stakeholders still do not fully embrace the usage of the apparatus. In fact Ayo et al. (2011) found in his study that virtually all organizations in Nigeria have online presence and internet access primarily due to high number of cyber cafes and telecommunication companies that offers internet access to all and sundry at a fee. One can safely conclude that while availability of simple basic infrastructure and cost can no longer be a challenge, the question to pose is, to what are these infrastructures being put to use. In some cases, while goods and services are displayed online, so also information and sending sales orders are still done in the traditional way. The ultimate is for businesses to have website that is efficient and effective to target niche markets and attract the right customers to company products and services. The issue of security, trust and privacy are amongst the most critical determinants to the success of e-commerce adoption for online consumers and businesses. According to Abbasi et al. (2010), security can be protection of transactional details of the customers and privacy of the personal information of the respondents. With the knowledge that e-commerce operators makes information on products and the market readily available, there is always the fear of hackers who can gain access to organization's computer systems (Abebe, 2014; Alberto et al., 2013). Nonetheless, Aminu (2013) also talked about the ability to manipulate digitized outputs. There is therefore the need to trust the system.

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Aziz (2010) perceived trust as the firm's believe in the competence of an entity to act dependably, securely and reliably within a specified context. Similarly, distrust is regarded as the lack of firm belief in the competence of an entity to act dependably, securely and reliably within a specific context. Ayo et al. (2011) found that major challenges identified by respondents as impediments to B2C e-commerce acceptance include high tendency of internet fraud, reliability of payment instrument, insufficient information on the e-commerce site. There is need for the stakeholders to trust the system of e-commerce. Since these issues are fundamental they must be addressed otherwise the survival of e-commerce will be threatened. Abbasi et al. (2010) noted the relatively under developed credit card industry in many developing countries is also a barrier to e-commerce. As regard privacy concerns, the fact that personal information of individuals and businesses are released to everyone to view without restriction is a serious challenge particularly in developing countries. According to Awa et al. (2015), many developing countries are still cash-based economies. Cash is a preferred mode of payment not only on account of security but also because of anonymity which is useful for tax evasion purposes or keeping secret what one's money is being spent on. However, to resolve privacy concerns, trust and security issues involving management employees, consumers and government is a big challenge. While resistance can be in terms of inability to see the benefits of the adoption it might as well be that adoption of e-commerce may involve a substantial change in internal functions, tasks, responsibilities, systems and culture of the organization which they may not be ready to dispense (Abou-Shouk et al., 2013; Awa et al., 2015). E-commerce means more interaction with computers rather than people and Boateng et al. (2011) noted that not everyone has equal access to the technology, those who do not have are at disadvantage and forcing them to use e-commerce placed them in stressful situation. Many would prefer the status quo. This is where orientation of stakeholders as well as training to increase computer knowledge, skills and applications can be a catalyst for SMFs to key into this new way of doing business. Changes in management practices can assist in exploiting competitive advantages. Environmental factors are external factors that impact on SMFs decision to adopt e-commerce. Factors such as competitors/customers need, government role are also involved. Customer or supplier demand and competitors can be a significant factor that will necessitate the adoption of e-commerce. According to Boateng et al. (2011), competitive pressure has positive influence towards adoption of technologies. The norm has been that businesses tend to seek close relationship with each other by wanting to operate with the same attitude and with the same process. So acquisition by one will influence the acquisition by the other in order to promote more opportunities for growth especially in the area of supply chain management. Government also has a role to play particularly in providing the needed support that would facilitate the adoption of e-commerce (Bolongkikit et al., 2015). Government can simplify the rules and regulations as well as provide technical infrastructures for easy adoption of e-commerce. Boateng et al. (2011) concluded in his study that though the level of government support and (provision) of infrastructure vary from country to country (and) between countries (they) may affect the organization's ability to utilize e-commerce. Moreso, government may set the lead mandating that transactions with public agencies should be online. Barriers to the adoption of e-commerce are also changing over time and may vary along the adoption ladder (Baker, 2011; Belso-Martinez, 2010). For some SMFs sophisticated

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in the use of e-commerce, the barriers mentioned above may be unimportant. But they may face other challenges as they change their management and organisational structures and restructure business processes to make better use of the Internet. Some of the barriers to electronic commerce adoption are discussed below;

2.9.1 Culture

The use of the Internet for shopping is culture bound and, therefore culture influences its adoption from one country to another. This view is corroborated by Bolongkikit et al. (2015) who explained that the degree of compatibility of the information technology and its various uses with the values and norms of a social system influences its diffusion pattern. Chong et al. (2012) have also indicated that one of the obstacles which limit the development of e-commerce locally is related to the culture or the behavior of customers when it comes to buying goods and services through credit cards. In Nigeria, the Internet is not compatible with the retailers' culture of selling through physical stores and consumers' entrenched behavior of physically visiting the stores, touching, feeling and comparing products before actual purchase is made. For example, a research finding revealed that inability of consumers to inspect a product prior to purchase hinders e-commerce adoption in Malaysia (Chan et al., 2012; Chen et al., 2012). Also the culture of making payment for goods purchased via credit cards also constraints online shopping in Nigeria. All these are perceived by Nigerians as a Western culture that is alien to us (Baker, 2011). In addition, a large number of Nigerians are illiterates and even among the few literates, many are computer illiterates and this has significantly affected their attitude to computer and the Internet usage. There is a correlation between the level of literacy of a country and its Internet penetration. A recent survey correlated the Internet penetration rate with the literacy level of countries (Chan et al., 2012). For example, it was reported that Iceland with literacy rate of 99% has a penetration rate of 97.8%; Norway with literacy rate of 99% has a penetration rate of 97.2%; Sweden, also with literacy rate of 99% has a penetration rate of 92.9%; Luxembourg with literacy rate of 99% has a penetration rate of 91.4%; and Greenland with literacy rate of 100% has a penetration rate of 90.2% (Chen et al., 2012; Chong et al., 2012). In another view, effective online shopping requires that the consumer must be relatively familiar with computers and how to navigate the Internet. In line with this, Global E-schools and Communities Initiative Internet noted that e-tailers target a specific age group, called "the Net-generation, which is made up of individuals born between 1977 and 1997. A review of literature addressing e-commerce adoption showed the relation between culture and technology adoption has been a subject of interest in recent studies of information systems (Chan et al., 2012).

2.9.2 Infrastructure

This is another major challenge militating against rapid adoption and continued use of the Internet to do shopping in the developing countries (Foon and Fah, 2011; Farhad et al., 2011; Grandon et al., 2011). According to Ghobakhloo et al. (2011), infrastructure refers to the hardware or equipment, software applications and services associated with ICTs, including telecommunication and electricity and grid networks. From this, infrastructure challenge can be categorized as: the challenge of personal computer (PC) penetration, the challenge of access to the Internet, the challenge of electronic payment and the challenge of electricity supply. To start with, the effectiveness of the Internet as a veritable tool of marketing

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depends on its availability, operational efficiency and performance (Ghobakhloo et al., 2011; Ifinedo, 2011b). Unfortunately, all this is lacking in Nigeria's technology industry. According to Foon and Fah (2011), personal computer penetration is the most important indicator of readiness for e-business and ownership of PC is also related to income. It has also been empirically validated that there is a direct relationship between PC penetration and e-commerce in the U.S. and Europe. In Nigeria, where majority of people are poor and uneducated, ownership of PC is very low, and this constitutes a serious barrier to PC penetration. The second infrastructure problem is the access to the internet. Access to the Internet, is by and large, a function of telecommunications infrastructure. Farhad et al. (2011) posited that higher PC penetration and functional telephone system obviously increase consumers' access to the Internet. Ifinedo (2011b) suggested that inadequate infrastructure plays a key role in impeding the e-business. Issues such as access to Internet services, including the hardware and software, as well as the communications infrastructures, remain serious obstacles to e-business in the developing countries. Access to the Web is possible only when telephones and PCs are available, but these technologies are not adequately supplied in developing nations.

2.9.3 Fraud and Security Concern

Another serious impediment to the adoption of the Internet to carry out online business transaction in the retail industry is security concerns by the prospective and actual shoppers. Chong et al. (2012) defined security as a set of procedures, techniques, and safeguards designed to protect hardware, software, data, and other system resources from unauthorized access, use, modification, or theft. In a recent study, it was reported that the development of online shopping has been slowed by some factors, including online shoppers' concern regarding fraud and security (Foon and Fah, 2011; Farhad et al., 2011; Grandon et al., 2011). It was indicated that lax computer security can make hackers have access to a vendor websites and steal names, addresses and credit card numbers of their customers. Phishing is also noted as a concern, where consumers are fooled by a website designed to look like a legitimate online vendor into giving up their details. Another study showed that fear of online credit card fraud has been one of the major reasons customers have not done more extensive online buying (El-Gohary, 2012; Elmazi et al., 2011; Edesiri et al., 2013). Similarly, Farhad et al. (2011) lamented that consumers cannot physically check the quality of a product or monitor the safety and security of sending sensitive personal and financial information while shopping on the Internet. From the foregoing, security challenge is a real one that should be tackled headlong to encourage more Nigerians to adopt online shopping.

2.9.4 Perceived Risk

This challenge stems from the factor of fraud and security. As users interact with a new technology, they will learn the usefulness as well as the risks associated with the technology. Chong et al. (2012) defined perceived risk as an assessment of uncertainties or lack of knowledge about the distribution of potential outcomes. In the opinion of Farhad et al. (2011) perceived risk is a major challenge to the growth of e-marketing. They argued that while there are other factors affecting consumers' adoption behavior on the Internet, perceived risk is a barrier to the repatronage and purchase on the Internet. Farhad et al. (2011) also shared this viewpoint, claiming that perceived risk may influence the attitude and behavior of

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consumers towards the Internet services. In the case of purchasing on the Internet, it is possible that consumers may perceive disclosing their credit card information as risky, and they have no control over this (El-Gohary, 2012; Elmazi et al., 2011; Edesiri et al., 2013). There is the risk that the supplier may not satisfactorily deliver the goods ordered. The goods may be inferior, incorrectly selected, and may never arrive. Uncertainties about how customers' financial information is treated by e-tailers will increase perceived risk associated with online transactions, and reduce their willingness to adopt online shopping.

2.9.5 Public Policy Support

With the advent of the Internet many developing nations have not amended their laws to accommodate rights, obligations and responsibilities of the providers and users of the Internet services, and how redress can be sought and obtained in the court of competent jurisdiction, thus making it difficult for shoppers to get redress in case of injury (Den Hoogen, 2010; Davis et al., 2010). This has created doubts and distrust in the mind of potential and actual shoppers, and therefore, slowed down adoption of online shopping in these countries (El-Gohary, 2012; Elmazi et al., 2011; Edesiri et al., 2013). The non-existence of an e-commerce law contributes to the distrust in the online environment in terms of conducting purchase transactions. Similarly, Davis et al. (2010) claimed that without the existence of the sufficient control of regulation, personal information of each customer may be used without their knowledge and consent. For this reason, Farhad et al. (2011) advocated for a more conducive regulatory environment in developing countries than in developed countries in adoption of innovation. The authors expatiated that in the absence of laws regulating use of the Internet, shoppers will not be certain of who bears the liability in case of a financial loss, especially in online environment, where it may be difficult to locate the online service providers (Chan et al., 2012; Chen et al., 2012; Chong et al., 2012). Organized crimes have increased in line with the increased use of Internet. Hence, in a country like Nigeria where cases of fraudulent uses of Internet are rampant, regulating Internet usage becomes not only a national concern, but also attracts some international attentions. However, the capacity of the existing regulation to adequately address the complexities created by this in remains very doubtful.

2.9.6 Legal Uncertainties

Most Internet e-commerce transactions are domestic rather than cross-border. Although there may be other reasons, such as the use of a common currency, differences in legal and regulatory environments are one of the most important reasons for doubts in e-commerce adoption (Den Hoogen, 2010; Davis et al., 2010). Legal uncertainties and conflicting regulatory environments for cross-border transactions, especially B2C, may affect SMFs particularly strongly. There is neither a harmonised legal framework with rules pertaining to the determination of jurisdiction and applicable law nor mechanisms that ensure the cross-border enforcement of legal rulings. Small businesses can risk being sued in multiple jurisdictions under a number of inconsistent laws. More generally, the lack of a satisfactory redress mechanism in the event of a dispute may strongly discourage both B2B and B2C on-line transactions (OECD, 2009). Unlike large firms, which can afford to maintain a legal department, the cost of keeping abreast of developments in the target market's legislation and regulations and the cost of tackling the complex legal issues involved in cross-border transactions may be too high for many small businesses (El-Gohary, 2012; Elmazi et al.,

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2011; Edesiri et al., 2013). There are, of course, out-of-court dispute resolution mechanisms, such as arbitration, but this involves costs of at least thousands of US dollars and may not be well suited to small transactions involving SMFs. Eurostat figures clearly show that legal uncertainties constitute, at least in some countries, a significant barrier to the adoption of e-commerce by SMFs. Legal uncertainty concerning contracts, terms of delivery and guarantees was mentioned as an important barrier to e-commerce purchases by 40% of SMFs in Spain, 37% in Italy, 24% in the United Kingdom and 20% in Austria. It also discourages e-commerce sales (Den Hoogen, 2010; Davis et al., 2010).

2.10 Related Theories on Technology Adoption

Adoption theories have been applied to various adoption studies topics, such as Internet banking, online shopping, mobile commerce, and technology switching intentions (Chen and Chen, 2011; Chiemeke and Evwiekpaefe, 2011). Similarly, studies on SMFs in developing countries and firm-level technology adoption have used either one or a combination of these theories. In order to describe the process of e-commerce technology adoption, it is essential to scrutinize the adoption concept (Datta, 2011; Demircan and Erturk, 2010; Duan et al., 2012). To answer questions of how and why e-commerce technology adoption occurs, it is necessary to turn to the available technology adoption theory. Different definition of technology adoption in organizations has been provided by prior literature such as decision to accept and use the innovation, implementation success, extent of usage and effectiveness and success of adopted IT based on acceptance of or satisfaction with IT (Duan et al., 2012). Some of the perspectives that have been offered are theories about diffusion, and these explain and predict how and why a technology is adopted through different channels (Den Hoogen, 2010; Davis et al., 2010). Other theoretical perspectives involve human behavior and the impacts they have on an individual's willingness to adopt and their likely effectiveness in using a technology. Many theories that deal with technology adoption are not specific to social media marketing adoption, yet it still has relevancy when being viewed in a general technology adoption context.

Researchers have drawn on a variety of theoretical perspectives to explain the wide range of ICT impacts on business processes and on the organization as a whole (Datta, 2011; Demircan and Erturk, 2010; Duan et al., 2012). The economic theory of production and the resource-based view (RBV) have been the most common approaches used. In many cases, findings have been ambiguous and inconclusive (Abebe, 2014). Within the framework of the "productivity paradox" debate and using production theory as the most frequent theoretical foundation, some studies have focused on providing empirical evidence of the impact of ICT investment mostly computers on productivity growth and performance at the firm level. However, the findings have been mixed and this approach has been criticized for making unrealistic assumptions and because of the form of the production function employed, among other reasons (Abebe, 2014; Alberto et al., 2013). According to the RBV firm performance is based on its specific resources and capabilities, which are difficult to imitate and create a sustained competitive advantage. Differences in ICT resource endowment, such as higher investments in ICT and their combination by firms, may enhance organizational capabilities and eventually lead to superior firm performance (Aminu, 2013; Abbasi et al., 2010; Aziz, 2010). The findings have also been mixed, especially those analyzing ICT impact on

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financial performance (Chen and Chen, 2011; Chiemeke and Evwiekpaefe, 2011). In regards to the complementarities perspective, Aziz (2010) highlighted the fact that ICT investment and use are necessary but not sufficient conditions for improving performance. The existence of complementarities across firm resources can increase their joint impact on business value because it is more difficult for competitors to imitate the total effect (Duan et al., 2012). Many studies have explored the existence of complementarities between technological and organizational changes in analyzing ICT impact on firm performance (Afshar et al., 2011; Ahmad et al., 2010; Al-Shaikh et al., 2010). Prior research has demonstrated that the level of ICT use by both employees and managers, as well as the skills and abilities of human capital, rather than ICT investment, strengthens the ICT effect. However, the greater the implementation of the technology among employees, the higher the impact on labour productivity. In addition, the type of technology is a significant factor in any account of ICT impact (Ahmad et al., 2010). Different technologies may demand, for example, different IT skills to be implemented by the firm.

The extant e-commerce literature offer several theories to investigate the determinant factors of e-commerce adoption by SMFs (Abebe, 2014; Alberto et al., 2013; Aminu, 2013; Abbasi et al., 2010; Aziz, 2010). The five most commonly used are the Theory of Reasoned Action (TRA), the Theory of Planned Behavior (TPB), the Technology Acceptance Model (TAM), the Diffusion of Innovation Theory (IDT), and the Technological, Organizational and Environmental Framework (TOE). Theory of reasoned action was initially developed by Fishbein and Ajzen (1975). According to this theory, an individual's behavior is highly determined by the intention of the individual to perform the behavior, and this intention is jointly affected by two factors, which are attitude toward behavior and subjective norm (Den Hoogen, 2010; Davis et al., 2010). This theory was criticized by Ajzen (1991) due to the model being unable to compromise in a situation in which the individual is not under volitional control. In addition, the predictive power of this model is also limited when applied to a situation in which actual behavior and intention are highly correlated (Davis et al., 2010). Based on these criticisms, Ajzen (1991) repaired the limitation of TRA by developing the Theory of Planned Behavior (TPB). In TPB, Ajzen (1991) added new constructs called perceived behavioral control (PBC). Hence, there are three factors that influence the intention to perform a certain behavior, which are attitude toward behavior, subjective norm and perceived behavioral control. However, according to Datta (2011) both TRA and TPB still assume that there is closeness between intention and behavior, so the predictive power of this model is still weak if it applied in a situation in which intention and behavior are highly correlated. Moreover, Davis et al. (2010) also criticized this model for ignoring, or not including, several factors that can increase predictive power, such as personal norms and affective evaluation of behavior.

The TAM model developed by Davis (1989) provides a model that is pointedly intended to explain an individual behavior regarding computer use (Den Hoogen, 2010; Davis et al., 2010). This model was formulated based on the TRA framework. In this theory, the actual behavior is highly determined by behavioral intention, and the behavioral intention is jointly determined by 'attitude toward' and perceived usefulness. Besides determining the behavioral intention, perceived usefulness together with ease of use also affect attitude (toward). The

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extension of the model is not without its criticism, El-Gohary (2012) argued that it ignores the effect of several important factors that come from both within and outside of the organization. Different to the previous theories above which focus more on the individual perspective, is the innovation diffusion model with a greater focus on a 'process-oriented' perspective in order to describe how an innovation can be received and dispersed between people (Datta, 2011; Demircan and Erturk, 2010; Duan et al., 2012). Originally, the Innovation Diffusion (ID) model was developed by Rogers (1983) based on broad psychological and sociological theory. In this theory, relative advantages, compatibility, complexity, trialability and observability are factors that determine the rate of adoption of innovation. The Technology- Organization-Environment (TOE) framework was developed initially by Alberto et al. (2013) in order to describe the influence of contextual factors in adoption of an innovation. In this framework, there are three aspects of a firm's context that influence adoption of technology innovation; these are technological context, organizational context, and external task environment or as it is more commonly called environmental context (Datta, 2011; Demircan and Erturk, 2010; Duan et al., 2012). Technological context relates to both the internal and external technologies that are relevant to the firm, while organizational context pertains to the nature and the resources of the firm, which is proxied by firm size and the decentralization, formalization, and complexity of their managerial structure. Then, the environmental context refers to other parties surrounding the firm such as competitors, suppliers and government (Datta, 2011). From the theories above, the TOE framework is chosen as the theoretical basis for the development of our research model. This choice is based on several considerations. Firstly, the TOE framework has been widely recognized by previous studies as a well-established framework through which to study e-commerce adoption. Secondly, the TOE framework considers various contexts, not only focusing on technological contexts (such as IDT), but also considering organizational and environmental contexts. It is recognized that a model that covers many dimensions can provide better explanatory power than a model that only covers one dimension (Aminu, 2013; Abbasi et al., 2010; Aziz, 2010). Thirdly, the TOE framework is recognized as a model that employs an interactive perspective that assumes that the changes in an organization are determined not only by individuals in organization but also by the characteristics of the organization in which they operate (Datta, 2011; Demircan and Erturk, 2010; Duan et al., 2012). The interactive perspective allows the researcher to treat all of the factors and their interaction in one dynamic framework and it is believed that this can comprehensively explain IT innovation adoption. In spite of many positive opinions about the TOE, however, there are still criticisms addressed to this theory. One of these revealed by Ghobakhloo and Tang (2013) is that this model ignores factors related to individual attributes concerning employees and managers. Therefore, in this study, in addition to taking into account technological, organizational, and environmental contexts, the study also consider those relevant factors related to the individual that affect SMFs adoption of e-commerce. Some of the theories mentioned above will be discussed individually below;

2.10.1 Diffusion of Innovation Theory (DIT)

Diffusion is the process by which an innovation is adopted by members of a certain community. Ghobakhloo and Tang (2013) found Rogers work "Diffusion of Innovation" as the most frequently cited work dealing with diffusion. As Rogers pointed out, diffusion is not

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a single, all-encompassing theory, but rather several theoretical perspectives that relate to the overall concept of diffusion; that is, it is a meta theory (Foon and Fah, 2011; Farhad et al., 2011; Grandon et al., 2011). Four factors influence the adoption of an innovation by members of an organization: (1) the innovation itself, (2) the communication channels used to spread information about the innovation, (3) time, and (4) the nature of the group to which it is introduced (Rogers, 1995). According to Rogers (1995), there are four major theories that deal with the diffusion of innovation. These are (1) the innovation-decision process theory, (2) the individual innovativeness theory, (3) the rate of adoption theory, and (4) the theory of perceived attributes (Ghobakhloo et al., 2011; Ifinedo, 2011b). The present study focuses on the individual innovativeness theory and the theory of perceived attributes because they help to understand the relationship between the innovator characteristics and the adopter categories. Adoption and diffusion of innovations have received considerable interest from industry groups, policy-makers, and scholars. Extensive analysis of these theories revealed two broad categories: IT adoption at the individual level and IT adoption at the organizational level (Oliveira and Martins, 2011). Individual-level adoption models include the Theory of Planned Behaviour (TPB) (Ghobakhloo and Tang, 2013), the Technology Acceptance Model (TAM) (Davis, 1989), and the Unified Theory of Acceptance and Use of Technology (UTAUT). At the organizational level, Oliveira and Martins (2011) claimed that the most widely used theories include the Diffusion of Innovations (DoI) theory of Rogers (2003) and the Technology Organization Environmental (TOE) Framework (Foon and Fah, 2011; Farhad et al., 2011; Grandon et al., 2011). The institutional theory has also been employed extensively at firm-level studies. Ghobakhloo et al. (2011) explained that no single unitary theory can explain all aspects of innovation acceptance. Consequently, most research on the adoption of e-commerce is based on any or a combination of the adoption models.

2.10.2 Individual Innovativeness Theory

The individual innovativeness theory is based on who adopts the innovation and when. A bell-shaped curve is often used to illustrate the percentage of individuals who adopt an innovation (Hajiha et al., 2010; Hajli and Bugshan, 2012; Hung et al., 2011). According to Rogers, there are five categories of adopters. The first category is called innovators. These are the risk-takers and pioneers who lead the way. They are able to adopt despite a high degree of uncertainty about the innovation at the time of adoption, and are willing to accept an occasional setback when a new idea proves unsuccessful (Hajiha et al., 2010; Hajli and Bugshan, 2012; Hung et al., 2011). The second group is known as the early adopters. They climb aboard the train early and help spread the word about the innovation to others. The third group is the early majority. They are persuaded to adopt by the innovators and early adopters, and may deliberate for some time before completely adopting the new idea. Huang and Qin (2011) opined that their innovation-decision period is relatively longer than that of the innovators and early adopters. The fourth group is the late majority. They approach innovation cautiously and wait to make sure that adoption is in their best interests. As a result, they do not adopt until most others have done so. The fifth group is called the laggards (Chong et al., 2011; Chong et al., 2014; El-Gohary, 2012). These are the individuals who are highly skeptical and resist adopting until absolutely necessary.

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2.10.3 Theory of Perceived Attributes

The theory of perceived attributes is based on the notion that individuals will adopt an innovation if they perceive that it has the following attributes (El-Gohary, 2012; Elmazi et al., 2011; Edesiri et al., 2013). First, the innovation must have some relative advantage over an existing innovation. Second, the innovation must be compatible with the existing values, past experience, and practices of the potential adopter. Third, the innovation cannot be too complex nor perceived as difficult to understand. Fourth, the innovation must have trialability; that is, it can be tested for a limited time without adoption. Fifth, the innovation must offer observable results. Jain and Bhardwaj (2010) asserted that an adopter's experience with one innovation influences that individual's perception of the next innovation in a technology cluster to diffuse through the individual's system. Thus, if an adopter has a negative first experience with one computer application, he or she may regard all computer applications through this perspective. Diffusion theory provides a framework that helps to understand why IT is adopted by some individuals and not by others (Awa et al., 2011; Awa et al., 2010; Azam and Quaddus, 2013). This theory can explain, predict, and account for factors that increase or impede the diffusion of innovations.

2.10.4 Technology Acceptance Model (TAM)

Technology acceptance model is about the first and the foremost traditional adoption theory in the field of IT (Awa et al., 2011; Awa et al., 2010; Azam and Quaddus, 2013; Abor and Quartey, 2010). It provides basis for unveiling the impacts of external variables on adoption decisions, with its basic postulates resting firmly on economic, utilitarian and attitudinal grounds. The Technology Acceptance Model (TAM) proposed perceived usefulness (PU) and perceived ease of use (PEOU) as the fundamental determinants of IT adoption. The theory postulated that an individual's intention to use an application is explained and predicted by his perception of the technology's usefulness and its simplicity. The proponents of TAM posit that PU is influenced by PEOU and both predict attitudes. Although, TAM has received empirical validation, application and replication, the model provides less meaningful information on user's opinions about adopting specific systems by narrowing its constructs to only PU and PEOU (Apulu and Latham, 2011; Apulu et al., 2011; Awa et al., 2011). Hence, the need to expand the factors or integrate with other IT acceptance models to improve TAM's explanatory and predictive utilities. The strengths of Abor and Quartey (2010) diffusion of innovation and TPB have been explored to enrich TAM by adding usage and placing premiums on specific settings and external variables that influence a technology adoption process. Nonetheless, TAM and TPB are routed to the theory of reasoned action (TRA). Though, TAM and TPB neglected the influences of psychological, social and interpersonal variables on IT adoption decision (Ukoha et al., 2011). Theory of planned behavior complemented TAM's constructs with subjective norms and perceived behavioural control (PBC) to explain perceptions of ease or difficulty of performing an act given resource constraints. Awa et al. (2010) believed that TPB explanatory and predictive utilities are better enhanced by extending and integrating with TAM. The decomposed TPB implements TAM and provides more complete constructs for understanding usage. Theory of planned behavior assumes that action aligns with behavioural intentions, while intentions in turn are shaped by attitudes, subjective norms and PBC. Other researchers validated, modified, extended and

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improved TAM under different situations to make for wider applicability in the novel knowledge economy (Samuel and Carter, 2013; Singla and Kumar, 2011; Sila, 2013).

Trust is a belief that one can rely upon a promise made by another. Abor and Quartey (2010) defined trust in electronic commerce as the subjective probability with which consumers believe that an online transaction with a web retailer will occur in a manner consistent with their expectations. Scholars have identified lack of trust as one of the main reasons for consumers' cynicism towards electronic commerce. In the context of e-commerce, trust beliefs include the online consumers' beliefs and expectancies about trust-related characteristics of the online seller (Apulu et al., 2011; Awa et al., 2011; Awa et al., 2010). The online consumers desire the online sellers to be willing and able to act in the consumers' interests, to be honest in transactions, and to be capable of delivering the ordered goods as agreed. Risk is defined as "the state of being open to the chance of injury or loss" (Apulu and Latham, 2011; Apulu et al., 2011; Awa et al., 2011). Logically, following on from this definition, perceived risk is the subjective probability that loss or injury will occur. In the context of online transactions, consumers are likely to perceive risks when they are uncertain about the probability of occurrence for each possible outcome for the transaction. Perceived system risk is the overall amount of uncertainty perceived by an organization in a particular purchase situation. The perceived risk associated with online transactions may reduce perceptions of behavioral and environmental control, and lack of control is likely to negatively influence e-commerce usage intentions (Curtis et al., 2010; Chilaya et al., 2011; Cragg et al., 2011). These possible outcomes, both negative and positive, will affect consumers' intention to transact with a B2C e-commerce system. Technology acceptance model's proposition tends to focus on the positive aspects of technology use; usefulness and ease of use, and less on the immediate loss that could result from usage. This weakens the argumentative power of TAM in situations where potential loss due to usage is a concern. Therefore, there is the need for an extended TAM to include perceived risk construct. Several other works had been done using perceived risk to support the explanatory power of TAM in examining consumers' behaviour in B2C e-commerce (Chen and Chen, 2011; Chiemeke and Evwiekpaefe, 2011; Chuchuen and Chanvarasuth, 2011; Chiliya et al., 2011). It is expected that perceived usefulness will influence intention to use and the actual use of online shopping activities. Perceived ease of use will influence intention to use and intention to use will influence actual use of online shopping activities. Consumers also assume that a trusted Web retailer will not engage in opportunistic behaviours (Curtis et al., 2010; Chilaya et al., 2011). A lot of previous researches have validated the relationship between trust, perceived usefulness, and perceived ease of use.

2.10.5 Theory of Planned Behavior (TPB)

Curtis et al. (2010) shed light on the phenomenon of consumer adoption of B2C e-commerce using an extended version of TPB. The study drew upon theories from information systems, social psychology, marketing, and economics to propose, operationalize, and empirically examine a comprehensive, yet parsimonious model that explains and predicts two key online consumer behaviors: getting information and purchasing products. This study does not view e-commerce adoption as a monolithic behavior, but rather as consisting of at least one contingent behavior. These behaviors are related: getting information influences purchasing,

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while intention to purchase triggers intention to get information. The well-established TPB was extended to predict these two behaviors and to derive the set of their respective accessible beliefs (Chuchuen and Chanvarasuth, 2011; Chiliya et al., 2011). The derivation is consistent with Cragg et al. (2011), who recommended selecting five to nine beliefs that are most likely to influence each behavior. Given that the literature has offered numerous variables to predict e-commerce adoption, this study identified the most accessible ones by freely eliciting consumer responses through open-ended questions. The resulting beliefs are presumably foremost in consumers' minds (Chen and Chen, 2011; Chiemeke and Evwiekpaefe, 2011). Most of these beliefs recur in the IT adoption literature, or within the domain of IS, highlighting the fundamental role of IT in online consumer behavior, beyond existing variables. It is shown that these beliefs can adequately predict the two proposed e-commerce behaviors and, as a consequence and to a large extent, e-commerce adoption. Most e-commerce studies follow the TRA or TAM, implicitly assuming that behavior is volitional (Curtis et al., 2010; Chilaya et al., 2011; Cragg et al., 2011). However, online consumers face several new constraints, such as the impersonal nature of the online environment, the extensive use of IT, and the uncertainty of the open Internet infrastructure. These issues call for the inclusion of PBC in e-commerce adoption models. Indeed, neglecting PBC and relying on simpler models may lead to e-commerce adoption models that are incomplete and potentially misleading. Viewing B2C e- commerce adoption as a two-stage process not only yields a more complete understanding of online consumer behavior, but it also enhances the predictive power of the e-commerce adoption model, since the two behaviors are interrelated (Chen and Chen, 2011; Chiemeke and Evwiekpaefe, 2011; Chuchuen and Chanvarasuth, 2011; Chiliya et al., 2011). In doing so, this study provided a comprehensive, yet parsimonious model to describe and predict online consumer behavior and e-commerce adoption. The set of accessible beliefs identified in our study was empirically shown to draw from the IT adoption literature or come from within the domain of IS, confirming the increasingly important role of IT in online consumer behavior (Samujh, 2011; Sina et al., 2016).

2.10.6 Technology Organization Environment (TOE) Model

Technology Organisation Environment framework of Chen and Chen (2011) assumed a generic set of factors to predict the likelihood of e-commerce adoption. The theory suggests that adoption is influenced by technology development (Samujh, 2011; Sina et al., 2016); organizational conditions, business and organizational reconfiguration; and industry environment. Technological context describes that adoption depends on the pool of technologies inside and outside of the firm as well as the application's perceived relative advantage, compatibility, complexity, trialability and observability. Chiliya et al. (2011) argued that organizational context captures firm's business scope; top management support; organizational culture; complexity of managerial structure measured in terms of centralization, formalization and vertical differentiation; the quality of human resource; and size and size-related issues such as internal slack resources and specialization. Chuchuen and Chanvarasuth (2011) opined that environmental context relates to facilitating and inhibiting factors in areas of operations. Significant among them are competitive pressure (CP), trading partners' readiness (TPR), socio-cultural issues, government encouragement and technology support infrastructures such as access to quality ICT consulting services. Be that as it may,

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the Technology, Oragnisation, Environment framework underscores Rogers' (1995) three groups of adoption predicators; leader characteristics relating to change, internal characteristics, and external characteristics. Chen and Chen (2011) posited that the major snag of TOE is that some of the constructs in the adoption predictors are assumed to apply more to large organizations, where clients are sure of continuity and less complaint than to SMFs. However, integrating the technology, organization and environment (TOE) construct with other models such as technology acceptance model (TAM), with each adoption predictor offering larger number of constructs than the original, provides richer theoretical lenses to the understanding of adoption behavior (Ongori and Migiro, 2010; Poorangi et al., 2013; Ramdani et al., 2013; Strüker and Gille, 2010). Below is the discussion of the technology organization and environment constructs.

2.10.6.1 Technology

Studies showed that successful adoption of IT depends on the importance of internal technology resource-infrastructure, technical skills, developers and user time. Therefore, firms with higher levels of technology competence show more likelihood to adopt e-commerce (Chen and Chen, 2011; Chiemeke and Evwiekpaefe, 2011; Chuchuen and Chanvarasuth, 2011; Chiliya et al., 2011). Technology relates to IT platforms, Internet skills/ technical know-how and e-commerce know-how to apply the e-commerce facilities effectively (Gupta et al., 2013; Glover, 2010; Haug et al., 2011). Technology competence goes beyond physical assets; it includes intangible resources, which perhaps generate competitive advantages for innovators because skills and know-how complement physical assets and are more difficult to imitate by rivals (Hwang, 2010; Husin and Hanisch, 2011; Hedges, 2010; Irma and Chong, 2013; ITU, 2011; Ifinedo, 2011a; Jalil and Kakamanshadi, 2011).

2.10.6.2 Organization

Organization contexts for e-commerce adoption measure principally descriptive factors, besides the incumbent constructs (Agwu and Murray, 2014; Ajay and Thobeng, 2015; Alrousan and Jones, 2016; Alshamaila et al., 2013). This section discusses some of the organizational factors that influence adoption of electronic commerce technology;

Scope of business operations: The greater the scope of business, the more the likelihood that a firm invests in e-commerce (Gupta et al., 2013; Glover, 2010; Haug et al., 2011). In addition, Jalil and Kakamanshadi (2011) described the role of scope of business operation (SBO) as an adoption predicator on three stands. However, digitalization of operations reduces internal coordination costs. In addition, relates to external coordination costs, which, though ambiguous to determine, increase with firm's business scope. Firms with larger scope of business glamour for e-commerce to reduce search costs for both buyers and sellers and to achieve demand aggregation and improved inventory management (Hwang, 2010; Husin and Hanisch, 2011; Irma and Chong, 2013; Ifinedo, 2011a). Finally, firms with greater scope of business have more latitude of benefiting from synergy of e-commerce and traditional business. Hedges (2010) observed that web connectivity and knowledge sharing may help consumers to locate physical stores.

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Individual difference factors: Every organization is idiosyncratic to the extent of decision-makers' "givens" reflecting their cognitive assumptions concerning future, alternatives and consequences attached to each alternative (Martinez-Caro and Cegarra-Navarro, 2010; Agwu and Murray, 2014). A firm's strategic and tactical focus is largely shaped by the peculiarity of minds of key actors. The adoption of enterprise-level innovations such as e-commerce solution depends largely on the functional, and/or emotional feelings of decision-makers, which reflect their attitudes, perceptions, psychographics, motivation and other IDFs. Hwang (2010) posited that IDFs are measured by one's functional track/education, age, gender and experience. Experience rates a significant IDF in technology acceptance research. In addition, favourable experience about an innovation influences adoption of similar ones perhaps on accounts of stimulus generalization. People with prior experience about e-commerce are more skilful and can simplify its complexities to improve PU. Studies from management information systems research reported Internet use experience as influencing actual use of specific systems (Ajay and Thobeng, 2015; Alrousan and Jones, 2016). In addition, the study showed that education influences personal innovativeness, belief/value systems, risk-taking, cognitive preferences and receptivity of an innovation. Weak education attracts risk aversion, threats to change and imitating the innovators, who may be better educated, more cosmopolitan in their social relationship, more exposed to mass media and more active outside their community. Niehm et al. (2010) recognized that highly innovative persons are aggressive seekers of new ideas; they are able to use their advanced and rigorous knowledge and experience to advantageously manage uncertainties of the business environment. Nevo et al. (2010) postulated that persons with higher innovativeness with respect to e-commerce are expected to have more positive perceptions to the five characteristic constructs of Rogers' diffusion theory.

Organization mission: Organizations have larger accomplishments; the essential and distinctive purpose that specifies its overall goals and operational scope as well as general guidelines for future managerial actions (Ahmet and Savrul, 2012; Al-Shaikh et al., 2010; Burke, 2010). While some firms pursue prime movership role in an industry, others sit back in established markets without any intention to rock the boat. Boothy et al. (2010) mentioned that innovative organizations seek opportunities to upset industry equilibrium; pursue strategies to disrupt normal course of industry events and to forge new industry conditions to the disadvantage of competitors. Nguyen and Waring (2013) suggested that a firm's strategy plays a primary role in e-commerce adoption and is intertwined with business strategy. This could be to reduce costs and reengineer business processes, to increase product differentiation, to achieve growth by developing new products and entering into new markets or to develop strategic alliances (Bolongkikit et al., 2015; Boateng et al., 2011; Bao and Sun, 2010). Although little or no empirical enquiries on this construct have been undertaken, it is believed that the mission determines e-commerce adoption.

Firm's size: Much exists in literature, which supports that firm size is a major factor affecting the adoption of any technology (Jalonen and Lehtonen, 2011; Jimmie and Mukhopadhyay, 2010; Justice, 2010; Khan et al., 2014), and that size makes for resilience to environmental shocks. The uptake of Internet and its infrastructures in business is slower and smaller than in larger firms (OECD, 2009), which supports reports from OECD countries that a strong

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correlation exists between the rate of adoption of Internet/its infrastructures and firm's size. Bolongkikit et al. (2015) study showed that the proportion of electronic data interchange adoption among larger firms is about 95% and only about 2% in small firms. Similarly, National Statistical Resources from some OECD countries report that diffusion of Internet and its infrastructures among large firms in 1999 was between 80-86% for firms with 20 employees and more, 61-95% and for very small firms between 19-57% (OECD, 2009). However, Okoro and Kigho (2013) reasoned that adoption is slower among smaller institutions perhaps because of their resistance to change, lack of education about e-commerce's potentials, lack of trust in the security of its transactions, lack of technological expertise and uncertainty about its benefits. In addition, lack of economy of scale advantage and facilitating slacks as well as the strengths to bear the associated risks and to encourage trading partners to adopt technology with network externalities are other reasons technology adoption is low among small and medium sized firms.

Facilitating conditions: Initially, facilitating conditions was treated as external controls, but enabling environment must be created to avoid firms facing extinction (Khojeh et al., 2013; Kaplan and Haenlein, 2010; Kietzmann et al., 2011). However, Lim et al. (2013) opined that high-performing firms exhibit institutionalized aggressive innovation; show industry leaderships in creativity, novelty and collaborative learning; hire, develop and reward innovative employees; and focus on definite targets. Oliveira and Martins (2011) stressed that the decision-maker must strategically engage in environmental analysis and diagnosis to critically measure the influences of policies, regulations and other internal and external variables on his firm's acceptance of, and decreasing technical incompatibility of, technology with network externalities (Leimeister et al., 2010; Low et al., 2011; Lyer and Henderson, 2010; Liang et al., 2010):

Social influences: Social influences were rated equivalent to subjective norms, though scholars drew from diffusion model to extend it to enhancement of one's image or social status as well (Ling et al., 2010; Lee et al., 2012; Lacka et al., 2014; Lee et al., 2013; Lim and Baharudin, 2013; Li et al., 2010). Much scholarship in psychology theorizes subjective norm as an important determinant of intention and practically epitomizes the perception of others about behaviour(s). Gomez (2012) argued that social influences are more of moving from functional to psychological motives of behaviour(s) perhaps because they define other peoples' opinions, superior influences and peer group opinions. The sociologists believe that, often, group members exhibit cohesiveness even against their own feelings to show commitment to the group norms. Lip-Sam and Hock-Eam (2011) reported that in China about 73% of the executive class in big cities owned mobile phones since early 1998 not solely for communications but also for social status. Further, Kenneth et al. (2012) suggested that younger users of communication interfaces are more subject to social influences because they are at the social development and learning stage of life.

2.10.6.3 Environment

Organization's propensity to innovate is shaped by environmental opportunities and threats. Ghobakhloo et al. (2011b) found a strong correlation exists between a firm's decision to use e-commerce and such industry factors as peer influences, rate of technical change, market

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volatility and coercive influences perhaps from customers. Nieto and Santamaría (2010) discussed environment in terms of consumer readiness, CP and TPR and PT.

Consumer readiness: Consumer readiness as a major determinant of firm's decision to adopt e-commerce reflects potential market volume, consumers' understanding of the applications and the associated pay-offs (Long et al., 2011; Low et al., 2011; Marston et al., 2011; Mell et al., 2010). However, Meftah et al. (2015) defined consumer readiness in relations to consumer willingness and Internet penetration. Consumer willingness measures customer appreciation of, and engagement in, online shopping; and Internet penetration focuses on diffusion of personal computers and Internet infrastructures amongst public user. Magutu et al. (2011) recorded the greatest impediment to the growth of e-commerce in Nigeria to be low PC penetration. But, thanks to the cheap Asian branded PCs, which perhaps encourage improved uses of Internet facilities in Nigeria and other developing nations. Customer willingness is further expressed in terms of the limitations of what can be bought online, rigours of the system, restrictions in global markets, literacy rates and safety and security of online transactions. Pookulangara and Koesler (2011) noted that consumer readiness could be improved upon by the firm developing a common language or technological networks that enhance learning capability, trust and motivation to shop effortlessly online.

Perceived trust: Perceived trust is strongly linked to customer readiness in the adoption of innovation. Privacy, safety and security are essential in digital interactions especially when transactions move beyond the confines of simple concept (Schwarz et al., 2010; Tiago and Maria, 2010; Troshani et al., 2011; Voges and Pulakanam, 2011; Vries et al., 2012). Nonetheless, Wang et al. (2010) suggested a negative relationship between lack of trust in online transactions and customer attitude, intention to buy and purchase behaviour. Trust is perceived as feelings of security when relying on an entity. This definition is expressed in terms of frauds, non-access to many stores, personal information privacy, data mining and data security. Hajli and Bugshan (2012) showed that people leave websites when personal information is requested for. Personal information privacy appears in two facets, environment control and secondary use of information control, the absence of which inhibits the release of customers' personal information. While the former refers to customers' ability to control the action of virtual stores, the latter relates to consumers' ability to exert control over what virtual stores make of the information afterward (Schwarz et al., 2010; Tiago and Maria, 2010; Troshani et al., 2011). Most economies have promulgated regulatory frameworks to protect information privacy of online shoppers and many have exploited the age-long Transborder Data Flows laws to regulate and/or deny access to strategically important data and information on personal, non-personal and economic (Sarosa, 2012; Schlagwein and Prasarnphanich, 2011; Sharma et al., 2013; Shehadi et al., 2010).

Competitive pressure: Competitive pressure (CP) as a driver of e-commerce adoption operates on the basis of retaliatory and endless vicious circle. Analysing the significance of CP on e-commerce adoption, Steinfield et al. (2012) suggested that e-commerce alters the rules of competitive games, restructures the industry make-ups and unravels novelty in outperforming rivals. Perhaps, e-commerce adoption transforms industry practice, ushers in new cast of competitors who may use competencies developed outside to exploit the

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leapfrogs of incumbent players and reposition competitive grounds to reflect as such in an effort for the prime-mover to hold the market place against rivals (Zhu and Thatcher, 2010; Zeiller and Schauer, 2011; Zhang et al., 2010). Information technology authority document that e-commerce perhaps induces change in industry structure such as disintermediation and intermediation. Wanyoike et al. (2012) offered new means of competing and alters competition rules via lock in, electronic integration and brick-and-click synergy.

Trading partners' readiness: E-commerce's adoption transcends the digitalization of business domain of individual organizations; its initiatives require network externalities with trading partners to ensure electronic interactions and transactions along the value chain (Marko et al., 2012; Morteza et al., 2011; Voges and Pulakanam, 2011; Vries et al., 2012; Wang et al., 2010). This entails an improved relationship and change in organizational structure and value chains as well as training and retraining of staff to exploit the opportunities of, and down play threats of, e-commerce (Baker, 2011; Belso-Martinez, 2010). The uptakes of e-commerce require some measures of strategic planning and proactive decisions to eliminate surprises and to improve user firms' competitiveness. However, many of these trading partners are small outfits, who, perhaps, do not have the resources to fully adopt EC applications (Wanyoike et al., 2012; Welsh and Zellweger, 2010; Yadav and Zeng, 2010; Zaied, 2012; Zeng et al., 2010). The argument that e-commerce demands integrated and electronically compatible trading systems that link firms and their trading partners to provide Internet-enabled services for one another is often assumed worthwhile when the trading partners are big and can afford the associated costs.

2.11 Chapter Summary

This chapter discussed mainly the broad essentials on small and medium sized firms, electronic commerce adoption, factors influencing electronic commerce adoption, benefits and challenges of electronic commerce adoption and theories supporting electronic commerce adoption. The review in this chapter comprises of definition of main terms and the relationships among the broad elements as found in previous researches and conceptual framework. The first section of this study looks at the concepts and definitions of small and medium sized firms, electronic commerce technology and adoption. The next section of this research provided an overview of theories of technology adoption. Another section of the study considered the relationship between electronic commerce adoption and business performance in small and medium sized firms in Nigeria. Electronic commerce in some developing countries was also examined. The chapter concluded with a chapter summary.

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CHAPTER 3: RESEARCH METHODOLOGY AND DESIGN

3.1 Research Focus

This chapter explains the research paradigm, research design, research methods, ethical considerations, and data analysis process through which the researcher answered this study's research questions.

3.2 Research Paradigm

This research was based on the principles of naturalistic, constructivist and realist (qualitative) viewpoint of qualitative inquiry (Lincoln and Guba, 1985; Creswell, 2007; Chin *et al*. 2012). This paradigm was preferred because a review of the literature indicated a need for a better understanding of the experience of owners of small and medium sized firms in Nigeria who have adopted electronic commerce technology in their day to day business operations. In circumstances that the need arose to understand experience, there is need identify how it is established. The naturalist perspectives opined that (Yin, 2009; Creswell, 2012):

a) Realities are multiple, constructed, and holistic.
b) The knower and the known interact and are inseparable.
c) Only time and context-bound hypotheses are possible.
d) All entities are in a state of mutual simultaneous shaping, so that it is impossible to distinguish causes from effects.
e) Inquiry is value-bound.

Lincoln and Guba (1985) noted that exploring studies from this perspective, in contrary to a positivist mindset (quantitative), has important implications for the manner research is carried out. This study's design is predicated on 14 principles of Lincoln and Guba (1985) for qualitative studies. For example, this study employs purposeful sampling, uses the case study as a reporting mechanism, and employs analogous means to establish the positivist concepts of validity, reliability, and objectivity. Consequently, more data about the naturalistic design of this study is included in this section.

3.3 Research Methodology Framework

It is ideal to enumerate an operational framework that allows an overview of the work that has been done throughout the research, hence, the need to source and gather data that would be useful for this research. In other to make sure that all research activities are well composed, articulated, organised and concluded as at when required, a schedule research operational framework is essentially required. This framework also served as a guide as the research proceeded. It is a form of direction by elucidating the connection and interrelationship between the various activities undertaken as the research progresses. The investigation and understanding of the problem entity at the beginning of the research was done, problem statement defined and later followed by the research questions, the scope of the study were outlined and the proposal evaluation and submission followed. Review of literatures by eminent scholars, and methodology. The summary of the operational framework is indicated in Figure 3.1.

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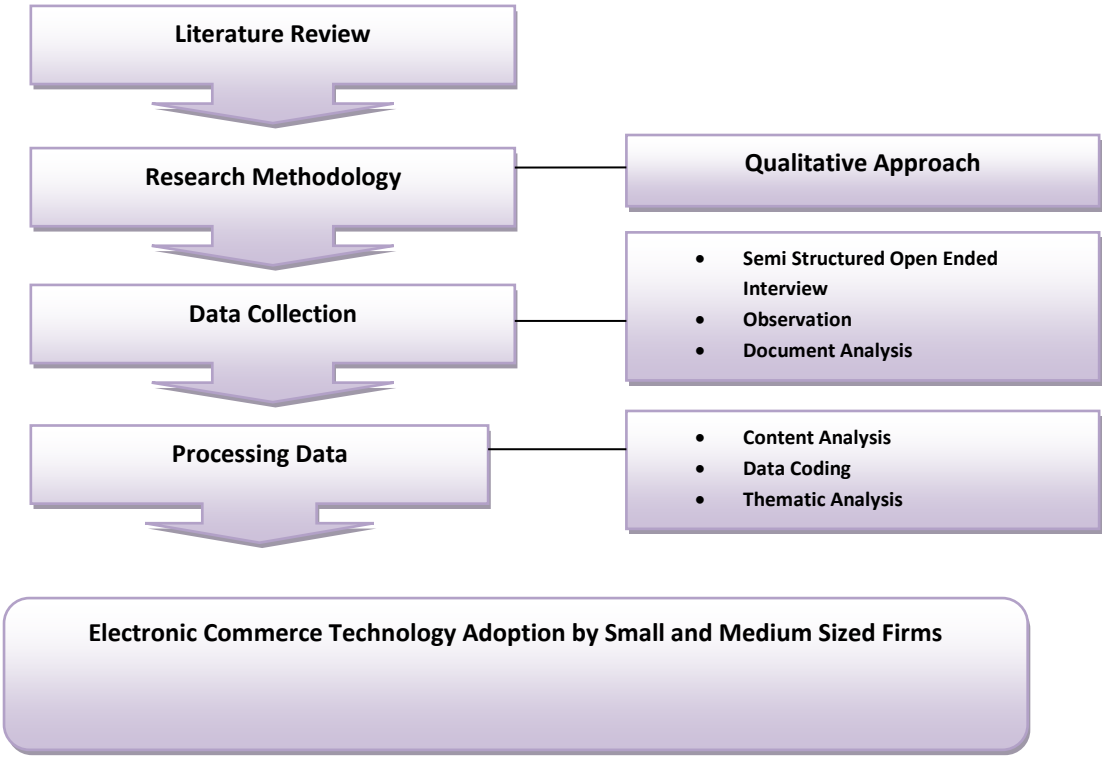

Figure 3.1 Research Methodology Framework

3.4 Research Instruments Design

In this thesis, an organisational unit of analysis was used to determine the selected sample population for the study because it is the most preferred unit of analysis which is based on a particular individual that represents the small and medium sized firms. Hence, by using the organisational-based unit of analysis, the researcher was be able to come up with a knowledge of how owners of small and medium sized firms in Nigeria implement e-commerce technology to improve business performance. Be that as it may, in qualitative approach to information gathering there are three basic techniques commonly used by researchers such as; observation, interview and experiment. For this thesis, the researcher made use of observation, interview and document review. This process is also known as triangulation. Studies have shown that the most frequently used technique of data gathering in qualitative research is the interview. However, the purpose of any qualitative research is to observe the research topic from the perspective of the interviewee, and to realize how and why it comes up to have this point of view (Kumar, 2005; Chin *et al.* 2012).

3.4.1 Assumptions of Qualitative Approach

The design of a research study begins with the selection of a topic and a paradigm. A paradigm is essentially a worldview, a whole framework of beliefs, values and methods within which research takes place. It is this world views within which researchers work. According to Creswell (2007), a qualitative study is defined as an inquiry process of understanding a social or human problem, based on building a complex, holistic picture, formed with words, reporting detailed views of informants, and conducted in a natural setting. According to Siegle Research (2013):

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1. Qualitative researchers are concerned primarily with process, rather than outcomes or products.
2. Qualitative researchers are interested in meaning of how people make sense of their lives, experiences, and their structures of the world.
3. The qualitative researcher is the primary instrument for data collection and analysis. Data are mediated through this human instrument, rather than through inventories, questionnaires, or machines.
4. Qualitative research involves fieldwork. The researcher physically goes to the people, setting, site, or institution to observe or record behavior in its natural setting.
5. Qualitative research is descriptive because the researcher is interested in process, meaning, and understanding gained through words or pictures.
6. The process of qualitative research is inductive because the researcher builds abstractions, concepts, hypotheses, and theories from details.

3.4.2 Data Collection Method

This study followed an inductive qualitative approach, and consisted of an average of 67 minutes interviews with about 25 participants (interviewed and observed) from selected small and medium sized firms in Borno state, Nigeria which have high rates of internet penetration. The main reasons to use the inductive method are to (i) condense raw textual data into a brief format; (ii) set out clear connections between the research objectives and the summary findings obtained from the raw data; and (iii) develop a framework of the underlying structure of experiences or processes that are evident in the raw data (Thomas, 2006; Yin, 2009).

The original goal of this study is to gather data from small and medium sized firms, identifying members of this population and gaining their participation may prove difficult, however, this study interviewed and observed about 25 owners of small and medium sized firms in Borno state, Nigeria. The respondents are owners of small and medium sized firms who have adopted electronic commerce technology in their business operations. The firms interviewed cut across all sectors of the economy, that is, both service and product sector. In addition, a combination of factors was considered in choosing the sectors and participants interviewed. The first was based on the researcher's previous experience in conducting qualitative inquiry. In a study of experienced small and medium sized firm's owners (Denzin, 1978; Damianakis and Woodford, 2012), the researcher found that the saturation could be attained and could make suitable conclusions based on a sample of less than n=?, but the researcher may choose to continue the interview if more participants are willing to participate in the study, so it could be an opportunity to allow more respondents to say their experience on the topic explored, that could be the reason for a wider population sample for this study.

Second, although Creswell (2012) noted that in qualitative studies (multiple case studies) it is typical to study a few individuals or a few cases, because the overall ability of the researcher to provide an in-depth picture diminishes with the addition of each new individual or site. Third, the sample size for a particular study is dependent on the nature of the study; some qualitative studies examine one case in depth, while others take a broader approach, focusing

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on 10 or 20 cases – but may only be able to offer superficial perspectives (Creswell, 2007; Creswell, 2012). Providing rich stories about owners of small and medium sized firms in the area of adoption of electronic commerce technology is important and appropriate, and so the sample size has been selected accordingly. This study employed purposeful sampling approaches to identify participants that represented "information rich" cases (Patton, 2002; Yin, 2009), since such cases lend themselves to the "logic and power" of purposeful sampling. The respondents were identified and their interest to participate was secured using the steps outlined in Table 3.1.

Table 3.1: Participants Identification Process

Phase 1: Identify Small and Medium Sized Firms - SMFs were found using the following steps	
Step	**Description**
1.1	Perform a query on the webpage of SMFs in Nigeria to show entrepreneurs where: a. Sector of business b. Length of establishement c. Location of firm d. E-commerce technology in use
1.2	Create a file of the resulting entries from relevant page transcripts that included important themes as was identified from this study.
1.3	Reduced the number of results by removing duplicate and inappropriate entries
Step	**Description**
1.4	Perform a query on the archived document of the selected firms to show customers information and assess: a. Length of Patronage b. Reasons for Patronage c. Location of firm d. Satisfaction Level of Customers e. Comments on E-commerce technology used
1.5	Examined each of the websites of members of the SMFs to search for evidence of the type of technology they engaged in and their area of competence. From this search researcher was able to collect some emails and telephone contacts of some of the active SMFs.
1.6	Email request letters will be sent on university letter head paper to the human resources department heads on a random sampling basis introducing the study and asking if they knew anyone who would qualify.
Phase 2: Invite both groups of Participants for the Interview – The owners of SMFs were invited to participate in the study using the methods described below.	
Step	**Description**
2.1	Introductory email was sent to specific individuals where evidence were found that their experience was relevant to this study through some of the physical contacts that were made during some of the industry events and

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	workshops the researcher attended in Northern Nigeria.
2.2	Where the researcher received a suggestion for a participant from another colleague or randomly selected industry member, the researcher sent a slightly different email, indicating that the recipient had been identified by a colleague.
2.3	Because of the task of securing participants, the researcher augmented some steps where it was felt a strong candidate for the interview has been found. The researcher did so by calling individuals before sending an email. This strategy evolved into having the research supervisor assisting the researcher by introducing him to some strong potential participants prior to contacting them.

The emails that were sent in Phase 3 included a brief explanation of the purpose of the study, the phenomenon being studied, and the expected role of the participants (including time commitment and interview format). Once a potential participant was identified and a confirmation made that they are an appropriate subject for the study, an appropriate interview date was quickly secured, time and venue for the interview obtained. Identifying participants using all of these methods represented a strategy of "theoretical" sampling (Yin, 1994; Patton, 2002; Yin, 2003). This approach identified those who are important for understanding theories or concepts. Also, "Snowball" sampling method was employed (Patton, 2002) to identify additional participants. This technique was applied at the end of the interviews by asking those who agreed to speak with the interviewer to recommend additional participants.

3.4.3 Document Collections

The participants were asked to provide any relevant documents related to their daily operations, information on kinds of technology used and customers, including publications of research that lead to the resulting product or service, brainstorming notes, business plans, mission/goal statements, product or company brochures, and company websites. Overall, however, participants were expected to provide little additional documentation, and were not pressed to do so when they did not willingly provide it post-interview. These artefacts provided another source of data about the entrepreneurs' experience and therefore a means to triangulate against the participant's narrative. They were analysed to help answer the study's research questions and incorporated into the overall profiles, or case studies, of the entrepreneurs in Chapter 4.

3.4.4 Ethical Considerations

Human as Instrument: In this study, it was important to recognise the use of human as instrument since data collection was conducted through interview. Yin (2009) stressed that humans can be a highly valid data collection instrument; provided that they are trustworthy to ensure trustworthiness. Lincoln and Guba (1985) noted several benefits to the use of human as instrument:

- Humans are perceived as responsive to the environment and "interact with the situation to sense its dimensions and make them explicit".

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- Humans are adaptable and can measure a variety of constructs, whereas most instruments cannot assess any other factors aside the ones which they have been designed to assess.
- Humans can grasp the holistic world of any phenomenon with all its "buzzing confusion" in one view.
- Humans can work with the respondent "on the spot" for "clarification, correction, and amplification" of data.
- Humans can process data, form hypotheses, and test those hypotheses with respondents as soon as the data is available.

3.5 Semi Structured Interview

Conducting interviews are known to be a significant source of providing information for a research. The preferred data collection approach was used because it allowed the researcher better access to the thoughts and feelings of the participants interviewed as compared to other approach, such as observations and questionnaires, which may not provide the same richness of data. It is important to ask people questions about how they organised their world and the meanings they attach to what goes on if one wishes to gain insight into how they interpret that world (Paton, 1990; Yin, 2009). On the other hand, Brookfield (1987) recommended that interviews should only be used when no other method can gather the information one is seeking. In the view of authors, interviews are predominantly suited to investigate studies that have an idiographic rather than homothetic rationale, or in other words, those which are concerned with portraying the highly specific nature of an individual's experiences rather than with advancing broad generalisations concerning laws of human behaviour (Thomas, 2006; Yin, 2012). The purpose of this study which is aimed at understanding the electronic commerce technology adoption among small and medium sized firms in Nigeria is obviously in the classification Patton considered being suitable.

Interview is a conversation with a purpose, of which the collection of data must occur in a face to face situation in a research context and involve the posing of questions by the interviewer (Creswell, 2012; Yin, 2012). Researchers added that the ability to tap into the experience of others in their own natural environment, while exploiting their value and belief agendas could prove difficult without face to face and verbal interaction with such people. In addition, the respondent is not a passive vessel for the interviewer to open and unload (Thomas, 2006; Yin, 2009). The interview is a social interaction where the validity of the data is obtained from the cooperation of the investigator and the interviewee to construct meaning about situated experimental realities in terms that are locally comprehensible. There are several influencing factors that determine the quality of the data gathered in an interview, comprising the structure of the interview, the types of questions asked and the capability of the interviewer.

The structure of an interview would depend on the varying perspectives of the investigator. Merriam and Simpson (1984) pointed out that by increasing the structure, the consistency and ability to compare data is enhanced. But increasing the structure may not allow the subject to give form to the subject of investigation (Trochim and James, 2006; Damianakis and Woodford, 2012). Contrarily, the unstructured interview discovers all the potentials relating

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to the research agenda (Damianakis and Woodford, 2012). For the purpose of this study, the semi-structured interview which strikes a middle ground between structured and unstructured formats in an attempt to gain the benefits of both was preferred. Patton (1990) described the semi structured interview as asking essentially similar questions with similar words. This is as a result that a set of questions was used to explore a predetermined problem; Saunders *et al.* (2007) insisted that one can be confident of getting comparable data across topics.

3.5.1 Observations

Observation allows a researcher to understand a phenomenon to an extent not entirely possible using insights of others obtained through interviews (Patton, 1990; Damianakis and Woodford, 2012). Much of the literature on research methods suggested that observational studies may help a researcher to comprehend complex issues through direct observation, either as a participant or a non participant observer (Coast et al., 2012; Dana and Dana, 2005; David, 2002). Researchers put forward that this method plays an important role in helping the researcher gain an insight into the SMFs operation process. Each observation in this research was tape-recorded with an observation guide in the form of contact sheets which detailed each recorded entries including description of activities, behaviour, language, lists of personnel present, the setting or environment and my personal subjective notes and observations.

3.5.2 Validation of the Interview Schedule

A pilot study was defined by Shuttle Worth (2008) as a standard scientific tool for 'soft' research, which allows scientists to conduct a preliminary analysis before committing to an extensive research. The pilot study for this research was done by validating the research interview questions to assess how much the questions are relevant and clear. The validation was carried out among experts in the field and also among some experienced SMF managers and university lecturers to ascertain whether the questions that was designed was clear enough to enable the researcher ensure the validity and reliability of the instrument chosen for the survey.

3.6 Qualitative Data Collection

Collection of data is the procedure that follows when sourcing for data from various sources and was broadly be covered in this chapter. The collection of data for this research was divided into two categories, the secondary, and the primary sources of data collection. For the purpose of this study, efforts were made to collect documents or secondary data from the relevant government and private agencies. The interview for this study began at the end of March 2017 until end of July 2017. The researcher sent e-mails requesting permission for interviews to potential respondents before the actual interview date. Interview protocol representing lists of questions to be asked to each respondent was designed before the actual interview date. All interviews were conducted in English Language. On average, the interviews lasted 67 minutes. Follow up inquiries were made by telephone or e-mail. In all cases, the interviews were tape recorded and transcribed by the researcher.

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3.6.1 Case Study

This particular research made use of the case study approach to qualitative research because it is recognised as among the many ways of conducting social science investigation (Patton, 1990; Siegel, 2013; Yin, 2012). Some other methods are historical analysis, surveys, experiments, observation, and the analysis of archival documents. Yin (2009) posited that each of this method has its distinctive benefits, considering three circumstances: (a) the type of research question, (b) the control the researcher has over actual behavioral activity, and (c) the emphasis on current as opposed to historical occurrence. Universally, this approach was chosen because it dealt with the "how" or "why" questions of the experiences of SMFs in Nigeria. This approach is also suitable in situations like this where the researcher has some level of control over the events that was investigated, and because the emphasis of this study is on contemporary phenomenon within some real-life perspective. Explanatory multiple case studies of this nature may be supported by two other types such as exploratory and descriptive case studies. Notminding the type of case study chosen, researchers should be careful in designing and conducting case studies to overcome the traditional criticisms of the approach.

Although previous studies reported that adopting the case study approach may be a daunting task (Saunders et al., 2007; Sandberg et al., 1988; Yin, 2003). The researcher chose this method to find out the factors influencing adoption of electronic commerce technology among small and medium sized firms in Nigeria. The goal of using the case study approach in this study is to design good case studies and to gather, present, and to articulately analyse data. Furthermore, the research adopted the case study approach to bring to conclusion by writing compelling report for this thesis. As a research strategy, the case study is adopted in several situations to add to the body of knowledge of organisational, individual, group, social, political and other similar activities (Yin, 2003, 2009). However, it has been regarded as a familiar approach in other field of social sciences, commerce and environmental planning research. In short, this method allows researchers to maintain the holistic and meaningful features of real-life experiences such as individual life cycles, organisational and managerial activities, neighborhood change, international relations, and the maturation of industries (Patton, 2002; Shuttleworth, 2008; Yin, 2012).

3.6.2 Primary/Secondary Data Collection

Because secondary sources provide second-hand data (Kumar, 2005; Creswell, 2012) while primary sources provide first-hand data, the use of secondary data alone is not enough to give credence for a reliable report. In view of this, the need to carry out an extensive primary data collection in order to feel the practical scenario on ground and get useful and reliable information from the participants became necessary. Secondary data collection is mainly based on ideas and work of previous researchers and scholars who have worked on topics related to similar research (Creswell, 2012). The secondary sources of data collection of this research relied on reliable resources such as; books, journals, earlier research, personal records, electronic documents, journals, websites, online materials, mass media and government or semi-government publications. Primary data collection can be gathered through the use of questionnaires, interviews, observations and experiments. Though previous writers acknowledge the difficulty and huge resource expenditure involved in

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conducting a research through interview (Kumar, 2005), however, the researcher prefered to make use of observation and interview approach to collect data from respondents.

3.6.3 Sampling

The researcher adopted the purposive sampling approach which according to some authors is judgemental in nature, though it is carried out for special reasons (Trochim and James, 2006; Saunders *et al*. 2007). Purposive sampling method has been acknowledged to be very effective and this is particularly when the researcher is working on a specific case study (Trochim and James, 2006; Saunders *et al*. 2007). For the purpose of this study, the researcher used snowballing sampling method to achieve his objectives because it is the most suitable technique for qualitative study.

This type of study that is very qualitative and exploratory are most appropriate for a purposive sampling design, because it is not after the representativeness of the samples, it depend strictly on the availability and willingness of respondents to participate in the interview especially those who are very busy and difficult to track down for discussions (Merriam and Simpson, 1984; Miles and Huberman, 1994; Creswell, 2012). The researcher sent out interview request letters through email to all members of small and medium sized firms registered in Northern Nigeria who has adopted electronic commerce technology in their business operations, in the last five years.

Interviews continued until the responses reached a saturation point, that is until the responses from each additional respondent no longer provided new information regarding the questions being asked (Creswell, 2012; Yin, 2012). This is also consistent with the suggestion of Krathwohl (1998) who emphasised that a "researcher should discontinue conducting additional cases and interviewing additional respondents" when he reaches theoretical saturation. This means once the statistically significant number of cases has been reached, the researcher should discontinue collecting cases so as to avoid repetitive data and hearing the same stories repeated again and again.

Other scholars recommended that the number of case studies is determined by the researcher himself and in qualitative sampling; there are no general rules for the sample size (Patton, 1990). As in any qualitative study, the crucial factor is not the number of respondents but rather the potential of each person to contribute to the development of insights and understanding of the phenomenon (Thomas, 2006). Authors also posited that qualitative samples may be little in size, but the yield is usually rich.

3.6.4 Selection of Interview Participants

This interview collected qualitative information from responses to conversations and semi-structured interviews conducted with a total of 25 respondents who satisfied the selection criteria. They include owners of small and medium sized firms who have adopted electronic commerce technology in their business operations in the last five years. Though qualitative data analysis is independent on the number of participants, but great care was taken to ensure an assortment of participants by making sure that all categories of participants from across sectors mainly from Borno state in Nigeria are selected. However, it is also important to note

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that the geographical areas chosen are among the business hub of North eastern Nigeria, hence, it attracted more participants for the interview. Table 3.2 showed the organisations interviewed across SMF sector.

Table 3.2 Organisations Interviewed

Category of SMF	Number of Respondents	Percentage of Responses
Supermarket	09	36
Restaurant	10	40
Furniture	02	08
Boutique	04	16
Total	25	100

3.6.5 Interview Analysis

Data in this study was analysed using inductive analysis, and certain techniques from the constant comparison method (Yin, 2009) to explore the experience of owners of SMFs in Nigeria. The constant comparative method involves the researcher in conducting data analysis from the start of observation (Krathwohl, 1998; Yin, 2012). Initial data was coded to indicate the concepts it represents, and the researcher linked concepts together into a theory of the phenomenon studied. Analyzing qualitative data requires understanding how to make sense of text and images so that you can form answers to your research questions.

Creswell (2012) mentioned the six steps used in analyzing and interpreting the qualitative data. These steps are not always taken in sequence, but they represent preparing and organising the data for analysis; engaging in an initial exploration of the data through the process of coding; using the codes to develop a more general picture of the data such as descriptions and themes; representing the findings through narratives and visuals, making an interpretative meanings of the results and connecting the findings to the literature with the aim of validating the research findings. However, qualitative research is an iterative phase like, meaning that you cycle back and forth between data collection and analysis by going back to your respondents to collect more information to fill in gaps in their stories as your analysis proceeds. In addition it involves conducting further analysis by reading through the data several times. The researcher develops a deeper understanding of the interview transcript supplied by the respondents each time he read through his database. Creswell (2012) pointed out that there is no single accepted approach to analyzing qualitative data, although several guidelines exist for this process (see Miles and Huberman, 1994). Furthermore, qualitative research is viewed as an interpretative research, in which the researcher makes a personal evaluation as to a description that matches the themes that capture the major categories of information. The interpretation that a researcher makes of a transcript, for example, differs from that someone else makes. This does not mean that the interpretation of one researcher is better or more accurate (Tesch, 1990; Taylor et al., 2006; Creswell, 2007).

3.6.6 Manual Analysis

The adoption of computer software for varying reasons has become very popular, researchers still have a choice about the decision to manually analyse their data (Tesch, 1990; Miles and Huberman, 1994; Yin, 2003; Creswell, 2012). The manual analysis of qualitative data means

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that researchers read the data, mark it by hand, and divide into parts. Conventionally, analyzing text data involves using colour coding to mark parts of the text or cutting and pasting text sentences onto cards. In view of this, certain persons may prefer to manually analyse their qualitative interview transcripts. A manual analysis could be the best choice when you:

- Are analyzing a small database of less than 600 pages of transcript.
- When you have not mastered the use of computer software program.
- You want to have a deeper understanding of the information gathered.
- A major disadvantage of the use of computer software is that it distances the researcher from the raw data.
- You have time to commit to hand analyse, since it is labour intensive requiring manual sorting, organise, locate words in a text database.

3.6.7 Data Analysis and Coding

The initial preparation of the data for analysis requires organizing the vast amount of information, transcribing it from spoken to written words, to typed file and making decisions about whether to analyse manually (Yin, 2003; Creswell, 2012). Coding is the process of segmenting and labelling text to form descriptions and broad themes in the data. Creswell (2007) and Tesch (1990) mentioned that there are no set guidelines for coding data. They authors added that the main objective of the coding process is to make sense out of the data, divide it into parts or image segment, label the segment with codes, examine codes for overlap and redundancy, and collapse these codes into themes. After this, the researcher selects specific data to use and disregard other data that do not specifically provide evidence to the themes. Creswell (2012) and Yin (2012) posited that codes can be stated in the participants' actual words which are called "in vivo codes" or rather the researcher may choose to use his own words or phrase and this is known as "lean coding". For the purpose of this analysis, the researcher will use both "in vivo codes and lean codes" because it was sometimes found to be necessary to use the codes exactly the same way the participants mentioned during the interview, while other situations warrants the researcher to rephrase the words in his own words, this is common in cases where the participants could not use the proper professional terms to accurately stress his message. Table 3.3 showed the sample of the interview analysis document, Figure 3.2 showed the qualitative analytical process, while table 3.4 indicated the result of the coding process.

Table 3.3: Sample for the Interview Analysis Document (Ajagbe, 2014)

Interview Participant	Unit of Analysis	Conclusion Drawing
Supermarkets	<excerpt from SMF's interview>	<conclusion or observation based on unit of analysis>
Restuarants	<excerpt from SMF's interview>	<conclusion or observation based on unit of analysis>
Furniture Workshops	<excerpt from SMF's interview>	<conclusion or observation based on unit of analysis>
Boutiques Outfits	<excerpt from SMF's	<conclusion or observation

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	interview>	based on unit of analysis>
All	All	<Summary-level conclusions for emerging concept>

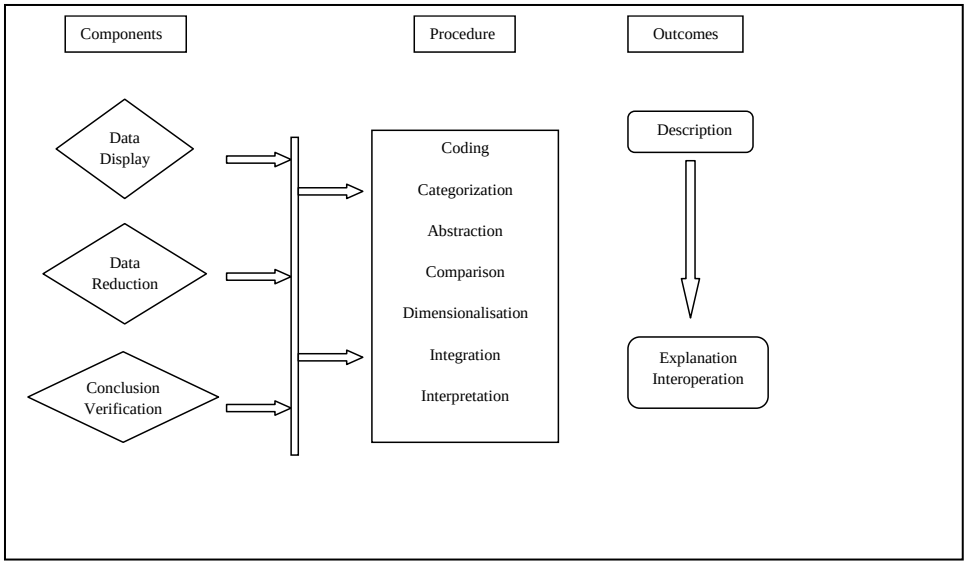

Figure 3.2 The Qualitative Analytical Process (Ajagbe, 2014).

Table 3.4: Result of the Coding Process (Ajagbe, 2014)

Major Emerging Codes	Sub-Codes	Coding Categories
Level of Awareness	6 Sub-Codes	95 Codes
Level of Readiness	5 Sub-Codes	121 Codes
Benefits of E-Commerce	2 Sub-Codes	112 Codes
Challenges of E-Commerce	2 Sub-Codes	50 Codes
Influencing Factors	1 Sub-Code	20 Codes
Government Support	4 Sub-Codes	60 Codes
6 Major Codes	**20 Sub-Codes**	**458 Codes**

3.7 Research Validity and Reliability

This study's design is predicated on the principles of Lincoln and Guba (1985) and Miles and Huberman (1994). For example, this study used purposeful sampling, the case study as a reporting mechanism, and used analogous means to establish the positivist concepts of validity, reliability, and objectivity as the researcher moves through the phenomenon under study. This is because naturalistic inquiry used other analogous means to establish the positivist concepts of internal and external validity, reliability, and objectivity (namely credibility, transferability, dependability, and confirmability).

Triangulation is described as studying the same research problem from varied perspectives in terms of data sources, methods, investigators or theories, so that the convergence of results can be obtained to increase their credibility (Creswell, 2012; Yin, 2012). The research objectives were achieved through the combination of several methods of data gathering also

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known as "within method triangulation" when answering RQ1 to RQ5 (Chapter 1). With respect to these questions a qualitative research was found to be necessary to explore the factors influencing electronic commerce technology adoption among small and medium sized firms in Nigeria. A purposely developed set of research instruments which consist an in depth interview, observation and document review was adopted. Observations and document review was used as support to answer some of the study questions as mentioned that "within method triangulation approach" was posited by Taylor et al. (2006), that it is another reliable technique used to ensure trustworthiness. It is however important to note that after the data was transcribed and analysed, the researcher sent the analysed data to the respondents to cross check if what they said during the interview were actually what was reported in the interview transcript. This the researcher did in order to ensure research credibility, comfirmability and trustwordiness, subsequent upon which the coding and theme development were carried out. Table 3.5 provides a summary of research questions, analysis techniques, tools and associated propositions that was utilised and subjects used to address the respective research questions.

Table 3.5: Operational Framework

S/N	Objectives	Questions	Hypothesis	Method	Outcome
01	Find out the level of awareness and readiness of e-commerce technology adoption by SMFs in Nigeria.	What is the level of awareness and readiness of e-commerce technology and how is it been adopted among SMFs in Nigeria?	No hypothesis testing.	Data gathering. Analyse data with qualitative technique.-interview, content analysis, document review.	Level of awareness and readiness is high
02	Examine the perceived benefits of adoption of e-commerce technology among SMFs in Nigeria.	How beneficial is the adoption of e-commerce technology among small and medium sized firms in Nigeria?	No hypothesis testing.	Data gathering. Qualitative technique.-interview, document review, observation.	External trading, more revenue, customer satisfaction, profitabilty, reduction of stress.
03	Explore the challenges SMFs in Nigeria encounter in the adoption of e-commerce technology.	What challenges do SMFs in Nigeria face in the adoption of e-commerce technology?	No hypothesis testing.	Data gathering. Qualitative technique.-interview, document review.	Trust issues, infrastructure issues, cultural issues, data security
04	Find out key factors influencing the adoption of e-commerce technology among SMFs in Nigeria.	What are the factors that influence the adoption of e-commerce technology among SMFs?	No hypothesis testing.	Data gathering. Qualitative technique.-interview, content analysis.	Culture, security, trust, knowledge

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05	Proffer suggestions for government to support e-commerce technology adoption among SMFs in Nigeria.	How can government improve adoption of e-commerce technology among SMFs in Nigeria?	No hypothesis testing.	Data gathering. Qualitative technique.-interview, content analysis.	Government should provide network infrastructure, motorable roads and uninterrupted power supply. Introduce policies to deter online fraud and encourage online transaction.

3.8 Chapter Summary

This chapter explained the research paradigm, research design, research methodology framework, ethical considerations, research operational framework and data analysis and coding process through which the researcher plans to develop the themes for writing the final research findings for this study and eventually will assist to answer this study's research questions.

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CHAPTER 4: ANALYSIS AND FINDINGS

4.1 Introduction

This study explored the adoption of electronic commerce technology among small and medium sized firms in Nigeria. Hence, the basics of this discussion commenced by understanding the themes that have emerged from the literature survey before delving into the sub-themes from the interview schedule and finally the emerging themes from the interview data also presented. This chapter included key findings from the research conducted. It included information about 25 small and medium sized firms from different sectors in Nigeria. Some of the firms were restaurants, boutiques, supermarkets, furniture shops all located in Maiduguri in Borno state, Nigeria. All the firms interviewed are properly registered by the required government regulations to carry out businesses in Nigeria. Although based on the study findings, it was found that several influencing factors, benefits, challenges, awareness and readiness level all as found in Nigeria will be listed here. For this reason, the following are the specific objectives of this study:

4.2 Research Objectives

1. Find out the level of awareness and readiness of e-commerce technology adoption by small and medium sized firms in Nigeria.
2. Examine the perceived benefits of adoption of e-commerce technology among small and medium sized firms in Nigeria.
3. Explore the challenges small and medium sized firms in Nigeria encounter in the adoption of e-commerce technology.
4. Find out key factors influencing the adoption of e-commerce technology among small and medium sized firms in Nigeria.
5. Suggest how government could support e-commerce technology adoption among small and medium sized firms in Nigeria.

4.3 Research Questions

Furthermore, inorder to achieve these aforementioned objectives, the following research questions have been answered in this study;

1. What is the level of awareness and readiness of e-commerce technology and how is it been adopted among small and medium sized firms in Nigeria?
2. How beneficial is the adoption of e-commerce technology among small and medium sized firms in Nigeria?
3. What challenges do small and medium sized firms in Nigeria face in the adoption of e-commerce technology?
4. What are the factors that influence the adoption of e-commerce technology among small and medium sized firms?
5. How can government improve adoption of e-commerce technology among small and medium sized firms in Nigeria?

4.4 Case Study

This section contains a series of case studies intended to give the reader insight into the

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experience of small and medium sized firms who were interviewed. Each case study presents a summary-level description of the electronic commerce technology adoption, including the undermentioned themes which emerged from the objectives and research questions of the study:

- Background and key characteristics of the entrepreneur
- Awareness and readiness of electronic commerce adoption
- Benefits of electronic commerce adoption
- Challenges of electronic commerce adoption
- Factors influencing electronic commerce adoption
- Government support in the adoption of electronic commerce

In this study, for the purpose of ensuring confidentiality as agreed with the interview participants, the actual names of the individuals or organisations involved are not used. This section presents the case by case analysis carried out which shows a more in-depth assessment of the entrepreneurs' experience in the adoption of electronic commerce technology among small and medium sized firms in Nigeria.

4.5 Brief Profile of Interviewed Participants

Demographic Profile of Selected Respondents

RES 1 is the chief executive of officer of a grocery and prawn store situated in the city of Maiduguri in Borno state of Nigeria. He is currently 30 years old. He was 29 years old when he established the organization. The CEO has a Diploma in Science & Bachelor degree in Science. He has attended professional courses in Hospitality management in Nigeria. He is married with children. He is the last born in the family of 6 (3 boys and 3 girls). About the company background, the organization was set up in 2016, currently he has about 30 personnel. The organization adopts the use of electronic commerce technology in the day to day operation of the business. The management structure of the firm consist of the CEO, MD, Manager, Chef, Auditor, Food checker, Cashier and others.

RES 2 is the deputy manager of a restaurant located around city of Maiduguri, Borno state, Nigeria. He is 28 years old and has a diploma qualification. With his wealth of experience in the industry he has risen to the position of chief chef. He is single and from an extended family of 32 members. The sampled organization was established in 1993 and currently has 47 staffs. The organization adopts the use of electronic commerce technology in running affairs of the business. The structure of the company includes MD/CEO, Deputy MD, Accountant, Cashier, Cooks, Waiters, Cleaners and Security.

RES 3 is the managing director of a supermarket located around the outskirt of Maiduguri, Borno state, Nigeria. He is 33 years old with a university diploma certificate. The CEO was 32 years old when he set up the venture. He has a wealth of industrial experience as a secretary at one of the reputable multinational milk processing and packaging company in Nigeria. He is single and was born into a family of 6. The organisation was set up in 2016 and has staff strength of 8. At the moment the organizations do not adopt electronic

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commerce technology in their day to day operation. However, the sampled organization is a family managed small enterprise.

RES 4 is about 46 years old with senior school certificate of education. He operates a supermarket venture located in the city centre of Maiduguri in Borno state. The company was established by the interviewee 31 years ago who is the managing director and chief executive officer. He has professional qualification as a waiter Services. The director was born into a family of 5 and he has 3 children from his marriage. The company was established in the year 2002 and currently has 20 workers in his employ. They business do not adopt technology in its daily activities. The business is a small scale family venture.

RES 5 is the managing director and chief executive officer of a restaurant outlet located in Maiduguri city in Borno state of Nigeira. The director is 54 years with primary school certificate of education. He has been operating the company since 30 years ago. He has a professional qualification in catering management. The director of is married with 6 children. The company was established in 1993 and currently has about 28 staffs. The venture does not adopt electronic commerce technology in operating the business venture. The business venture operates as a small scale family venture.

RES 6 is a fast food and eatery outlet located near University of Maiduguri in Borno state. The outfit is managed venture owner who is 45 years. He was 30 years old when he set up the organization. He has a primary certificate in education. The director is married with a family of 4. The organization was established in the year 2002 and currently has about 20 staffs. The organization implemented electronic commerce in running their business. The organization is headed by the managing director and followed by three other top executives.

RES 7 is the managing director of a furniture outlet situated in Maiduguri, Borno state, Nigeria. The director is 29 years old with a Bachelor degree in Engineering. He established the outfit when he was 24 years. He is single, and was born into a family of 5 (1 boy and 4 girls). The organization was set up in 2012 and currently has about 14 staffs. The organization adopted electronic commerce and other technology infrastructure in running the business. The structure of the organization includes the MD, Auditor, Cashier, etc.

RES 8 operates a mini restaurant business, the respondent is 52 years, he is a trained cook who rose to the position of a manager. He was 37 years old when he joined the organization as a high school certificate holder. He is married with 5 children. The organization was established about 15 years ago and currently has about 7 personnel. They do not adopt electronic commerce in their business. Other important personnel in the organization are cooks, waiters and cleaners.

RES 9 runs a boutique outlet near university of Maiduguri in Borno state, Nigeria. He is 52 years and has a Bachelor degree in Education. He was age 30 when the organization was established. The director is married with 5 children. The business was established in the year 1995 and currently has 5 people in his employ. The organization is trying to adopt technology in running affairs of the business.

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RES 10 manages a small family owned supermarket business located in the city centre of Maiduguri, Borno state, Nigeria. He is currently 45 years old and he is married with 2 children. The director was 28 years old when he established the venture. He has a diploma certificate from university of Maiduguri. The organization was established about 17 years ago and currently has 8 workers. The organization does not adopt technology in running affairs of the business.

RES 11 established the business in the year 1985 and she currently has about 5 personnel under her employ. She is 52 years and the business was established when she was 20 years old. Her educational qualification is the national certificate of education (NCE). The director of the boutique company is married with 4 children. The company adopts technology in running the affairs of the business.

RES 12 is the chief executive officer of a fast food organization in Maiduguri town. She established the business when she was 25 years old currently she is 30 years old. The CEO is a secondary school graduate. She is still single. The organization was set up in year 2012 and she currently has 7 personnel in her employ. They do not adopt technology in running their business.

RES 13 is an executive director with a furniture shop located around custom quarters in the heart of the city. He is 30 years and has a national certificate of education (NCE). He was 25 years old when the company was established. The executive director is married with 4 chidren and he is from a nuclear family. The furniture outfit was established about 5 years ago and he has a total of 6 staffs. They use technology in running the venture and they always try to be abreast of latest technology upgrading. Some of their staffs include deputy manager, customer care officers, drivers and cleaners.

RES 14 established her boutique outlet at the age of 30. She has a Bachelor degree certificate of education. The number of personnel under her employment is currently 5, she is married with 5 children. The managing director is 52 years old, the business was set up when she was 30 years old. The boutique outlet was set up since 1995. The organization adopts technology in day to day affairs of the business and they generate sales across the country.

RES 15 was born about 27 years ago. The director of the restaurant established the company when he was 25 years old. He has a Bachelor degree (BSc), he is married with 4 children. The business organization was established 2 years ago, he ensures that they adopt latest technology in running the affair of their organization. This has brought fast growth to the organization and their sales and staff strength has increased to 13 workers. He run the company as a family based venture.

RES 16 is a manager of a supermarket located around the University of Maiduguri in Borno state. He heads the organization and has about 3 supporting staffs who are engaged on a casual arrangement. The manager is 48 years old, the organization was established 25 years ago. The manager has Master degree and has computer literacy certificate. This high level of

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knowledge has helped the organization to efficiently adopt electronic commerce in running the organization. The manager is married with 4 children.

RES 17 is a trained cook with secondary school certificate (SSCE). She has been engaged with the restaurant organization for about 5 years. She was elevated to manage the venture as a result of her hard work and dedication. She is 40 years old. The manager/cook is married with 5 children. The business was established in the year 2009 and currently has about 15. To certain extent the use technology to run the business. Some other personnel are accountant, store keeper, security and labourer.

RES 18 is happily married with 2 children. The respondent is the sales manager of a supermarket, he is 48 years old with a University Diploma certificate (OND). The organization was established about 12 years ago and currently has about 20 workers. They implement e-commerce in running the supermarket. The organization was built around the concept of family SMF.

RES 19 is currently 39 years old and she has a Bachelor degree (BSc) in Sociology. She was 31 years old when the organization was set up. She is the store manager of the organization the interviewee is married with children. The supermarket has about 12 personnel and was established in year 2009. The organization adopt technology in managing the affair of the business.

RES 20 is a large quick service restaurant with outlets in major locations in Borno state. The structure of the organization is the managing director runs the affair of the business, supported by the executive directors, store officer, supply manager, and other employees (in total 15). The MD is about 38 years old, he was 28 years old when the organization was set up. The MD has a secondary school certificate of education (SSCE). He is married with 5 children. The organization adopt technology to manage the venture.

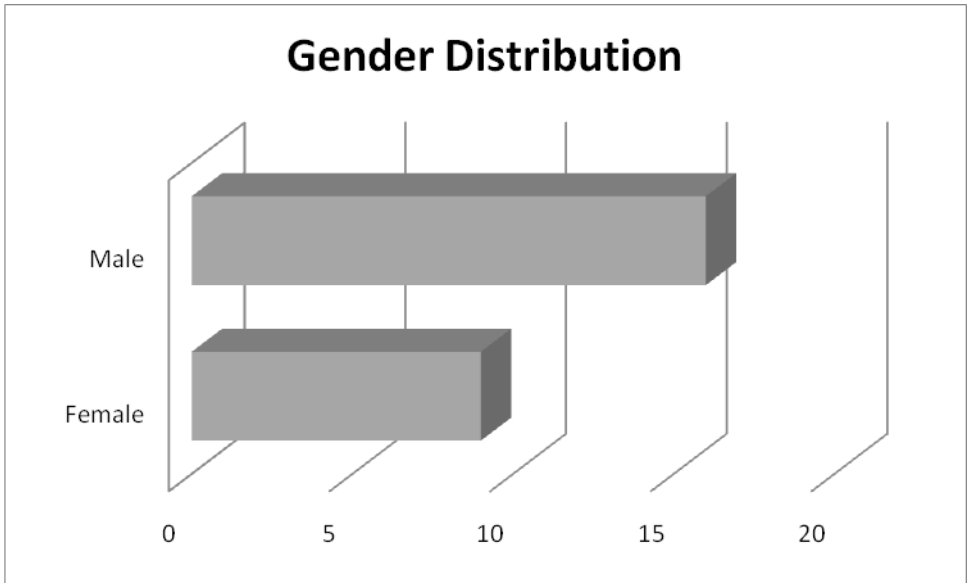

Figure 4.1: Gender Distribution of Respondents

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Figure 4.1 above revealed that 06(24%) among 25 respondents are females while 19(76%) among 25 respondents are males. This is an indication that majority of the respondents interviewed are males. It could also mean that more male are involved in trading activities in northern part of Nigeria.

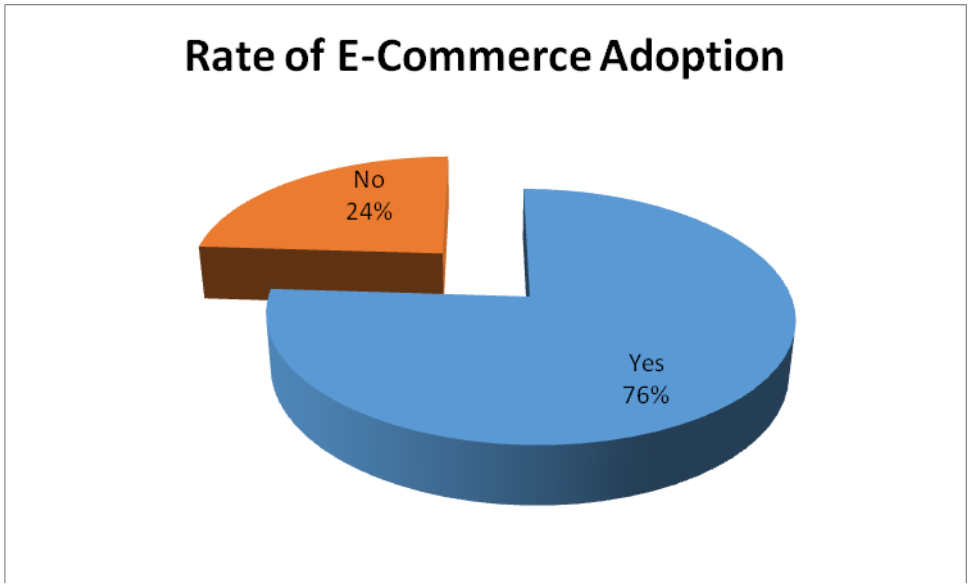

Figure 4.2: Rate of Electronic Commerce Adoption

Figure 4.2 above revealed that 06(24%) among 25 respondents do not adopt electronic commerce in running the affair of the organization, while about 19(76%) among 25 respondents have been using electronic commerce to run the day to day affair of their organization. This is an indication that majority of the respondents interviewed have been using electronic commerce to run the affairs of their organization. Hence, they are qualified to participate in the interview.

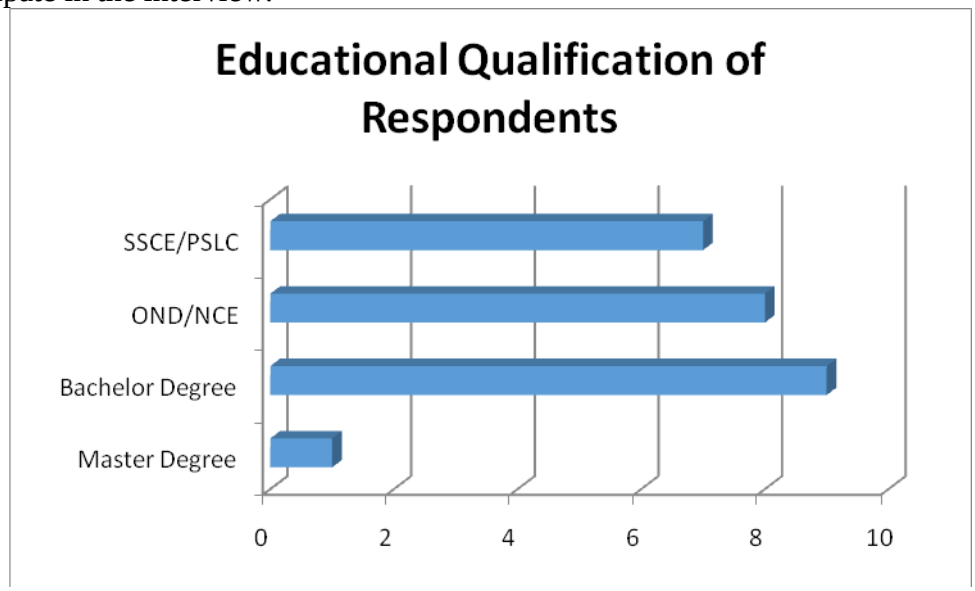

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Figure 4.3: Educational Qualification of Respondents

Figure 4.3 above revealed that 01(4%) among 25 respondents are master degree graduate, 09(36%) among 25 respondents have bachelor degree, 08(32%) among 25 respondents have OND/NCE and 07(28%) among 25 respondents have SSCE/PSLC. This indicated that majority of the respondents have requisite level of education to participate in the interview.

4.6 Interview Analysis

4.6.1 Level of Awareness to Adopt Electronic Commerce

Electronic commerce (EC) has been defined in several ways depending on the context and research objective of the author. Jamali et al. (2015b) perceived e-commerce in SMFs as the utilization of ICT and applications to support business activities. The authors elaborated the definition where they refer e-commerce as a set of technology that is utilized to support online business transactions between the organizations and their direct end customers and between the organizations and others within their business network(s). Meanwhile, Turban, King, Lee, Liang, and Turban (2010) provided a more specific definition where they stated that "e-commerce is the process of buying, selling, transferring, or exchanging products, services and/or information using computer networks mostly the Internet and Intranets." Turban et al. (2010) highlighted that e-commerce comprises of exchanges of information to the customers and suppliers, leading toward the process of selling and making the transaction through online networks. The findings from literature review is in line with that of this study which examined the level of knowledge or rather awareness of entrepreneurial business owners as important ingredients of determining the implementation of e-commerce in Nigeria. This is because awareness among the aforementioned category of people go-along way in understanding e-commerce adoption research. However, in this study, e-commerce has been defined in various perspectives depending on the understanding of each individual. From the various definitions collated from the content analysis of the interview transcript. The concept of e-commerce was described as the use of more upgraded technological and electronic means to conduct business activities. In addition, it is the process by which businesses and consumers buy and sell goods through electronic platforms or medium. Simplistically put, e-commerce can also be viewed as cashless or rather electronic transactions, electronic marketing. In another dimension, it can also be perceived as the process of engaging or using the internet to carry out business transactions. According to RES 5:

"e-commerce is the p*rocess whereby you adopt technology in business, cashless or rather electronic transaction, use of internet, machine or electronic means to do business. Furthermore, it involves the process by which businesses and consumers buy and sell goods through electronic medium"*.

Eventhough this particular study has reported on various definitions and descriptions of the concept of e-commerce as understood by the participants of this research. The study also found that only a negligible number of the respondents opined that they do not fully or rather some say that they do not understand what the term e-commerce means. As stated by RES 25:

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"I am not educated, so I do not have any idea of that terminology, hence we don't use technology in running our business activities"

Though the definition of e-commerce vary, Australian Society of Certified Practicing Accountants refers to it as sharing of business information, maintaining business relationships and conducting business transactions by means of telecommunication networks. Awa et al. (2010) defined it as a form of business transaction involving inter-firm alignment, where supposedly independent parties/firms interact and collaborate real-time through electronic networks rather than physical contacts. These suggest that e-commerce encompasses electronic trading, electronic messaging, electronic data interchange, electronic fund transfer, electronic mail (e-mail), facsimile (FAX), electronic catalogue, bulletin board services, shared databases and directories, electronic news and information services, electronic payroll, electronic forms, and other types of electronic data transmission. Ajay and Thobeng (2015) argued that from the strategic, operational, and tactical standpoints, all these platforms assist SMFs to democratize ideas (supply, archive, and utilize digital data with less restrictions), to build on-line communities and business partnerships (B2B and B2C). In addition, to optimize value-chain through real-time inter-and intra-firm knowledge sharing, and to create systems integration and/or collaborative environments. Figure 4.1 below showed the level of awareness of electronic commerce technology by small and medium sized firms in Nigeria. Table 4.1 indicated definitions of electronic commerce by some of the respondents of this study.

Table 4.1: Definitions of Electronic Commerce

Respondents' Code	**Definition of Electronic Commerce**
RES 1	Use of more upgraded electronic means of business
RES 2	Is the process by which businesses and consumers buy and sell goods through electronic medium
RES 3	cashless or rather electronic transaction
RES 4	Engaging or use of internet to do business
RES 5	Process whereby you adopt technology in business
RES 6	Electronic transaction
RES 7	Use of internet, machine or electronic means to do business
RES 8	Electronic Market

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Figure 4.4: Level of Awareness of E-Commerce by SMFs Interviewed

The figure 4.4 above indicated that 18(72%) among 25 respondents mentioned that they are fully aware of the concept of e-commerce technology, 05(20%) among 25 respondents said that they are partially aware of the concept of e-commerce technology, while 02(05%) respondents posited that they are unaware of the meaning of e-commerce technology. This indicated that majority of the respondents of this study are fully aware of the concept of e-commerce technology and are qualified to participate in this research. Table 4.2 showed some examples of small firms that adopt e-commerce in the sampled location, table 4.3 showed e-commerce instruments used by interviewed respondents in the sampled location.

Table 4.2: Examples of SMFs that Adopt Electronic Commerce

Type of SMFs	Name of SMFs
Supermarkets	Sidi Groceries and Prawns, Obynado Supermarket, Today Supermarket
Restaurants	Oasis Bakery, Mr. Biggs, Chicken Republic, Pinnacle Restaurants
Furniture	Allah Dey Furniture Works
Online Supermarkets	Jumia, Jiji, Konga,
Boutique	Amazing Royal Boutique
Hair Care Salon	AYB Hairdressing Salon

Table 4.3: Electronic Commerce Instruments Used by Interviewed SMFs

Respondent's Code	Common E-Commerce Instruments Used
RES 1	Computer Gadgets. P.O.S. Teller Machines
RES 2	Automated Teller Machine. P.O.S. Phone.
RES 3	P.O.S. Automated Teller Machine. GSM
RES 4	Teller Machine. P.O.S. Computer Gadgets. P.O.S.
RES 5	ATM Phone POS
RES 6	P.O.S. ATM. Phone
RES 7	GSM. Teller Machine. P.O.S.

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4.6.2 Readiness of SMFs to Adopt Electronic Commerce

Figure 4.2 below indicated that 15(60%) among 25 respondents agreed that fully ready in implementing e-commerce technology, 07(28%) among 25 respondents mentioned that they are partially ready in implementing e-commerce technology, while 03(12%) respondents posited that they are not yet ready to implement e-commerce technology in their day to day business operation. Hence, findings revealed that majority of the respondents of this study reported that they are fully ready and are implementing the use of e-commerce technology in conducting business transaction. However, further analysis of this data reported that adoption of e-commerce by small and medium sized firms depend on managements' decision. Some of the respondents mentioned that they are very ready to implement and enhance more e-commerce technology if appropriate infrastructure is made available by the owners of the organization. However, considering the numerous benefits accruable to the organization, the business owners opined that they are willing to adopt e-commerce technology in delivering their products and services. According to respondent 07:

"We are ready to implement e-commerce technology so as to bring up the name of the company and also partake in international trading i.e export of goods from one country to another".

Previous research has established the factors that influence different information technology adoptions (Abebe, 2014; Alberto et al., 2013; Aminu, 2013; Abbasi et al., 2010). These factors can be categorized as organizational readiness, compatibility, external pressure, perceived ease of use, and perceived usefulness. Organizational readiness was conceptualized as the financial and technological resources at the disposal of the firm to adopt. Aziz (2010) opined that organizational readiness includes the top management's enthusiasm to adopt IT, existing technology infrastructure, compatibility of the firm's e-commerce, and culture and values. Compatibility has been found to be a significant factor that impacts on adoption of IT and e-commerce (Afshar et al., 2011; Ahmad et al., 2010; Al-Shaikh et al., 2010). EP includes competition, the government, industry, and reliance on firms that are using e-commerce. Perceived EU addressed the extent to which a firm's perceived adoption of e-commerce would be effortless. Finally, PU implies the extent to which a firm using e-commerce perceived it to be useful in terms of an improvement in corporate job performance. The connection between PSV and adoption is captured by the theory of planned behavior (TPB), which argues that perceptions influence intentions, and they, in turn, influence human behavior. Agwu and Murray (2015) have used the TPB to predict and explain behavior such as the use of IT. A strong association between the perceptions and attitudes of managers toward IT types and use has also been established by prior research. Saffu et al. (2012) stressed that younger people are taking on more important IT positions within Slovakian SMFs, which may be ascribed to the pervasive computing society in which we live. Findings for the 211 Slovakian SMFs show that PSV and e-commerce adoption are significantly and positively related. Afshar et al. (2011) reported that PU was also the most influential factor in the decision to adopt IT. EU is the second most important factor in e-commerce adoption by Slovakian SMFs. Therefore, e-commerce must be easy to use for adoption by Slovakian SMFs. While these findings are concurrent with Alberto et al. (2013), findings of SMFs in the United States, as well as Saffu et al. (2012) in Ghana contradict the findings of Awiagah et al.

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(2015) of Chilean SMFs. The RC factor was slightly less important than EU in the study of Slovakian SMFs' e-commerce adoption. That is, factors assessing how compatible and consistent e-commerce is with the SMF's culture, values, and work practices are as important as those factors assessing the financial and technical readiness of the SMF in their studies revealed many reasons why organization should adopt electronic data interchange to include improved customer service, improved control of data, reduced clerical errors, reduced administrative cost, decreased inventory cost, increased sales and decreased manufacturing costs. Though their research is on EDI adoption the same can be related to the adoption of e-commerce and the reasons can be subsumed as e-commerce, market and technology related. Al-Shaikh et al. (2010) argued that adoption of e-commerce can create competitive advantage by coordinating the linkages with outside firms and such integration would streamline inter-company exchange process and thus reduce the costs of communication between sellers and buyers. Figure 4.5 showed the readiness of adoption of electronic commerce among small and medium sized firms in Nigeria.

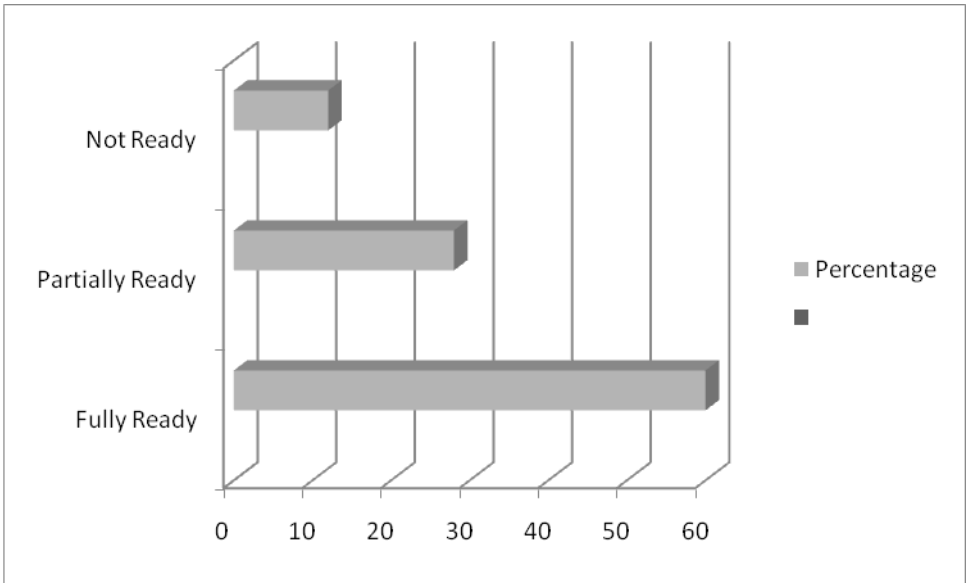

Figure 4.5: Readiness of SMFs to Adopt Electronic Commerce

4.6.3 Benefits of Adoption of Electronic Commerce

4.6.3.1 Benefits of Adoption of E-Commerce as an Entrepreneur

Small and medium sized firms have been actively searching for solutions that are suitable to integrate e-commerce into their business processes (Almoawi and Nasser, 2011; Ahmet and Savrul, 2012). However, if the implementation of e-commerce succeeds, the potential benefits for small and medium business includes increased sales, improved profitability, increased productivity, reduced costs associated with inventory, procurement and distribution, improved quality of service, and guaranteed competitive position. On the other hand, if the implementation of e-commerce does not work, it will impact heavily on SMFs with their limited resources. The results from past studies complimented that of recent findings about the need to understand the benefits of adopting e-commerce technology by SMFs owners, managers and employees. Hence, the researcher seeks an indept understanding

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of the reasons for investing in internet technology infrastructure by owners of SMFs. However, analysis of interview transcript revealed that they benefits of adopting e-commerce technology by SMFs include; reduction of stress, less time consuming, promotes cashless policy of government, makes business transaction less cumbersome for the participants. In addition to this, adoption of e-commerce improves market transaction, it enhances proper saving of revenue as business owners do not have direct access to cash realized on a daily basis. They have to go to the bank before they could have access to generated cash. This study also indicated that adoption of e-commerce lessen the stress in product and service advertisement, saves time from the dimension of customers, business owners/entrepreneurs and employees because operations are made seemless. This enhances customers' satisfaction as business funds are secured and proper accountability enhanced. As mentioned by respondent 12:

"I am glad that we invested in adoption of electronic commerce because it is such a motivational development for my customers and employees because it helps in smooth running of my business activities"

In addition, Al-Shaikh et al. (2010) examined the adoption of e-commerce by SMFs and found that SMFs could gain competitive advantage through adopting e-commerce as it would help improve market performance through better access to the market. Ahmad et al. (2010) found among other issues that SMFs markets needed a high degree of human interaction. Afshar et al. (2011) argued that SMFs occupy small / clearly defined niche markets that do not need global connectivity through experimentation as inhibitors to e-commerce adoption.

4.6.3.2 Benefits of Adoption of E-Commerce as a Customer

The question what are the benefits of adopting e-commerce technology by customers of small and medium sized firms was asked inorder to understand whether they business owners and employees actually have a deep knowledge of the reasons why their clients adopt internet technology in purchasing from their organisation. However, analysis of interview transcript revealed that they benefits of adopting e-commerce technology by customers of small and medium sized firms include; It makes their transaction or buying easy, it reduces stress of going to bank, it makes my customer friendly, it makes the transaction easy, they enjoy cashless system of marketing, less stress due to wide awareness, customers feel comfortable with service and product performance. In addition, it makes customers to feel well at home i.e even without cash they can come for transaction knowing full well that without cash at hand they can still transact businesses and money deducted from their bank account through online internet platform. This study also revealed that with e-commerce transaction, customers can receive goods paid for at the comfort of their home. However, in line with the current findings, MacGregor (2010) stressed that the possibility of shopping online from anywhere is the most obvious and most commonly cited advantage of e-commerce, and was found to be the most important perceived consumer benefits of internet shopping. Saffu et al. (2010) in the submissions argued that since the boundaries of e-commerce are not defined by geographical or national borders, consumers will benefit from a wide selection of vendors and products, including a wider availability of hard-to-find products. The internet can provide consumers with up-to-the minute information on prices, product availability, product types,

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product alternatives, etc. And consumers may benefit from the shopping process being faster in the market-space than in the market-place as a result of the rapidity of the search process and transactions (Agwu and Murray, 2015; Awiagah et al., 2015). The internet has the potential to offer consumers benefits with respect to a partial, or even a total privacy and anonymity throughout the purchasing process. Nonetheless, adoption of e-commerce also reduces the stress of going to the bank to withdraw money before buying can take place. For example, the use of automated teller machine (ATM) card to pay for fuel at gas station and shopping at supermarkets through point of sales (POS) devices. According to respondent 15:

"electronic commerce makes it less stressfull and less cumbersome for me and my family to shop for goods and services because we can make payment at the comfort of our home and receive goods within a short period of time".

However, although majority of the respondents believed that adoption of internet technology in carrying out business transaction is highly beneficial to entrepreneurs, customers and employees. Some of the customers still think that they do not perceive e-commerce as offering much substantial benefit to them as they believe so much in their traditional way of buying. Furthermore, Turban et al. (2010) added that by embracing e-commerce consumers may benefit from price reductions as a result of increased competition as more suppliers are able to compete in an electronically open marketspace. This will be due to reduced selling prices caused by reduction in operational costs, and manufacturers internalizing activities traditionally performed by intermediaries.

4.6.3.3 Benefits of Adoption of Electronic Commerce as an Organisation

The question what are the benefits of adopting e-commerce technology by small and medium sized firm's owners was examined inorder to understand whether they realized that investing in internet technology infrastructure is profitable to the organization. However, analysis of interview transcript revealed that they benefits of adopting e-commerce technology by small and medium sized firms include;

"I have not adopted e-commerce technology, Assuming we have enrolled into the platform it will bring the following benefits to the firm; Increase in income and ease of work, It will also increase the number of customers, It will reduce the movement of money both from customer and entrepreneur (RES 4)".

However, to a great extent introduction of e-commerce enhances positive business operation. It increases the rate of customer participation. It provide suitable or conducive environment for competition. Increase in income and ease of work. Electronic commerce increases the rate of customer patronage. It also enhances the efficiency of doing business and enhances ease of work processes on the side of the employees. The findings from this research is consistent with previous findings from Agwu and Murray (2015), who stressed that a well articulated e-commerce within an organisation often facilitates growth and expansion. Awiagah et al. (2015) however stated that the application and use of e-commerce in developing countries can lead to substantial savings in communication costs, marketing, advertising, as well as production processes (supply chain) and the delivery of goods and

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services to various parts of the globe. Additionally, the adoption of internet technology has increased customer patronage and resulted in the organization establishing new branch locations with the aim of serving the customers better and faster. With the adoption of e-commerce the organization will become well known as people would be able to view products and services of the organization online.

However, from figure 3 below, analysis of interview transcript indicated that 22(88%) among 25 respondents mentioned that they use of e-commerce is beneficial to their organization, entrepreneur and customers, whereas 03(12%) among 25 respondents do not think that adopting internet technology is beneficial to their business operation. Figure 4.6 showed some of the benefits of adoption of e-commerce as it emerged from the coded interview transcript.

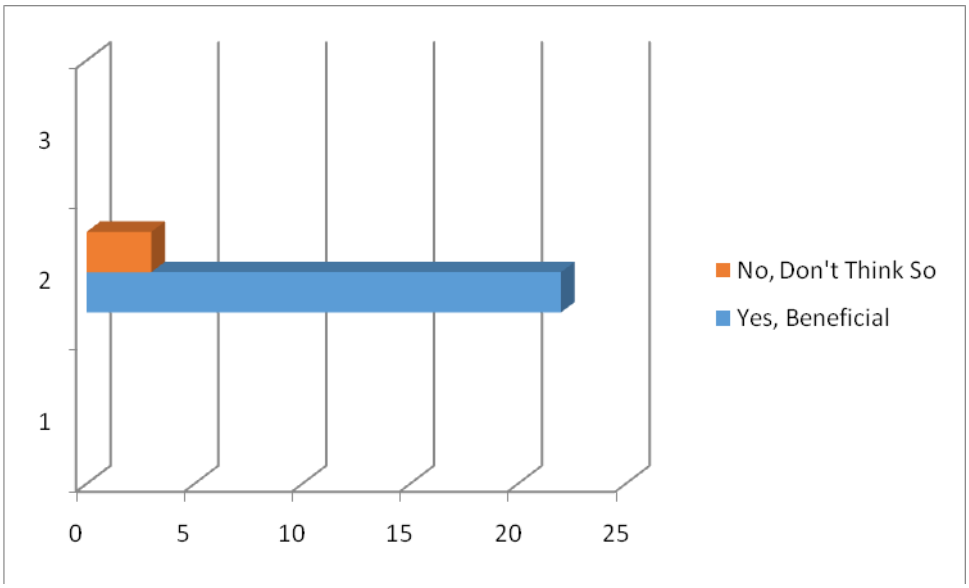

Figure 4.6: Benefits of Adoption of E-Commmerce

4.6.3.4 Enhancement of Business Performance through Adoption of Electronic Commerce

This section examined overall usefulness of adopting internet technology infrastructure in day to day business operation. However, responses from interview transcript revealed that implementation of electronic technology will bring about massive change in performance of the business. It would bring about increase in the rate of customer participation and this will result to more profitability. It will bring about change in market system by increasing efficiency of products and services delivered as a result of the use of technology. Business performance will be enhanced due to ease of trading activities via online platform.Business performance will be enhanced and organizational stress reduced if the venture owners implement electronic technology in their day to day operation. Internationalization of business activities is made easier, customer satisfaction enhanced, increased customer value, improved business growth, profitability and work processes enhanced due to competition from globalization.

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4.6.4 Challenges of Adoption of Electronic Commerce

4.6.4.1 Challenges of Adoption of Electronic Commerce as an Entrepreneur

In this study, the researcher tried to find out the challenges that small and medium sized firms in Nigeria face in the adoption of e-commerce technology. Findings from this study revealed that network issues, electrical fault, ignorance on the part of users of the platform, unwillingness of the employees and customers to accept new innovation, bank charges, inadequate capital, lack of knowledge for internet usage and amongst others. According to Abebe (2014), every new technology, when exposed and comes to the public faces so many difficulties. It takes time for people to get familiar with it. The other point is that since the technology like e-payment is new, there should be a substantial basis for its acceptability and expansion. Electronic commerce infrastructures are expensive and not easy and simple for anybody to apply them. Aziz (2010) mentioned that another problem is on how to expand and grow related e-commerce infrastructures such as telecommunications and allied services. The challenges in the embrace of e-commerce by SMFs can be perceived from the external factors that may include the economic, technological and social concerns. The internal challenges are poor internal infrastructure, inadequate ICT awareness and knowledge by management/owners. Perceived lack of benefits or value added of e-commerce to their business. In general the main challenges to embrace e-commerce are the following: Many organizations delay the adoption of e-commerce because of lack of internal enterprise (Abebe, 2014; Alberto et al., 2013; Aminu, 2013). Furthermore, Abbasi et al. (2010) found that managers or CEO's innovative and IT knowledge has positive effect toward adoption of e-commerce. However, if employees already know about e-commerce, the organization will be more disposed to adopt e-commerce. The challenge here is that the lack of knowledge and skills on ICT will not allow the SMF owner push for e-commerce development.

4.6.4.2 Challenges of Adoption of Electronic Commerce as a Customer

The study examined the challenges small and medium sized firm owners in Nigeria face in the adoption of e-commerce technology. The perspective the researcher is trying to understand in this section is to determine how customers adopt e-commerce technology in their day to day purchase of goods and services. However, this study reported the following as among the problems customers encounter in the adoption of e-commerce in Nigeria. They are; lack of awareness of how the e-commerce technology works, language barrier as all e-commerce platform are written in English language, surcharges, network problems, ignorance of knowledge of e-commerce machines or gadgets, resistance to change by some of the customers. In fact Ayo et al. (2011) found in his study that virtually all organization in Nigeria have online presence and internet access (In fact it is a status quo) primarily due to high number of cyber cafes and telecommunication companies that offers internet access to all and sundry at a fee. One can safely conclude that while availability of simple basic infrastructure and cost can no longer be a challenge the question to pose is to what use are these infrastructures being put to use by the potential customers. Hence, the ultimate is for businesses to have website that is efficient and effective to target niche market and attract the right customer to company products and services. The issues of security, trust and privacy are amongst the most critical determinants to the success of e-commerce adoption for online consumers and businesses. According to Abbasi et al. (2010), security can be protection of

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transactional detail of the customers and privacy of the personal information of the respondents. With the knowledge that e-commerce makes information on products and the market as a whole readily available online there is always the fear of hackers who could gain access to organization's computer systems (Abebe, 2014; Alberto et al., 2013). Nonetheless, Aminu (2013) also talked about the ability to manipulate digitized outputs. There is therefore the need to trust the system.

4.6.4.3 Challenges of Adoption of Electronic Commerce as an Organisation

This section examined the problems small and medium sized firms in Nigeria encounter in the adoption of e-commerce technology. Analysis of interview transcript of this study revealed the following; lack of customers enlightenment about the gadgets, it is very hard for the organization especially in area of creating awareness, inadequate awareness on the part of employees and customers on how to use the platform. In addition, proper compliance on how the system works, this probably could be due to low level of literacy on the part of the users. Customers have to be assured of the usefulness of the technology and security of their information before they will be confident to use it. Above all, inadequate telecommunication and network infrastructure may also be a major hindrance to the adoption of e-commerce by organizations in Nigeria. However, in the same view with empirical results, organisations adopting e-commerce in developing countries face problems such as lack of telecommunications infrastructure, lack of qualified staff to develop and support e-commerce sites, lack of skills among consumers in order to use the internet, lack of timely and reliable systems for the delivery of physical goods, low bank account and credit card penetration, low income, and low computer and internet penetration (Almoawi and Nasser, 2011; Ahmet and Savrul, 2012). Most of the international economies depend basically on the role of SMFs in supporting national economy. Hence, SMFs contribute significantly to the economies of the African continent, representing around 90% of all businesses, and providing the main source of jobs and income for African people. Many SMFs in developing countries are not achieving even minimal levels of e-commerce adoption. In addition, the adoption of web-enabled transaction processing by small business has not been as widespread as would expect. It has been demonstrated previously that the rate of e-commerce adoption in SMFs has been low. The literature suggests that in most developing countries, e-commerce adoption has been hindered by the quality, availability and cost of access to necessary infrastructure whilst developed countries have employed a relatively accessible and affordable infrastructure for e-commerce adoption (Afshar et al., 2011; Ahmad et al., 2010; Al-Shaikh et al., 2010).

4.6.4.4 Elimination of Challenges Faced in the Adoption of Electronic Commerce

This section explored how the challenges encountered by small and medium sized firms in the adoption of e-commerce could be eliminated. Analysis of responses from interview transcript indicated the following; by making improvements in work processes and equipment. The problems could also be eliminated by the improvement of electricity and good network infrastructure in Nigeria. It has been demonstrated previously that the rate of e-commerce adoption in SMFs has been low. Afshar et al. (2011) argued that adoption of e-commerce has been hindered in most developing countries by the quality, availability and cost of access to necessary infrastructure whilst developed countries have employed a relatively accessible and affordable infrastructure for such. Furthermore, as reported in this

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study, proper awareness among the populace, reduction in bank charges and other charges involved with the use of e-commerce transactions. Introduction of public policy that will encourage usage of the technology, change in leadership causes inconsistent policy, and also that will guarantee safety and security of online information. Organizations should engage trained and knowledgeable personnel to manage network infrastructure in the country.

4.6.5 Factors Influencing Electronic Commerce Adoption

Previous research has established the factors that influence different information technology adoptions (Abebe, 2014; Alberto et al., 2013; Aminu, 2013). These factors can be categorized as organizational readiness, compatibility, external pressure, perceived ease of use, and perceived usefulness. Organizational readiness was conceptualized as the financial and technological resources at the disposal of the firm to adopt new technology. Aziz (2010) opined that organizational readiness includes the top management's enthusiasm to adopt IT, existing technology infrastructure, compatibility of the firm's e-commerce, and culture and values. Compatibility has been found to be a significant factor that impacts on adoption of IT and e-commerce (Afshar et al., 2011). Thus, EP includes competition, the government, industry, and reliance on firms that are using e-commerce. Perceived EU addressed the extent to which a firm's perceived adoption of e-commerce would be effortless. Finally, PU implies the extent to which a firm using e-commerce perceived it to be useful in terms of an improvement in corporate job performance. The above findings from earlier studies complimented the current research in the sense that the aim of the researcher is to find out the factors that influence the adoption of electronic commerce technology among small and medium sized firms in Nigeria. After careful transcription, coding and analysis of interview data, this study found that the following factors encourage and or discourage small and medium sized firms to adopt electronic commerce technology in Nigeria. Some of the influencing factors as found in this study are; advancement in technology, simple and comfortable for customers to trade online, it is less time consuming, so it helps to free up time for people to do other things. In addition, the prevailing culture and belief system of the people in the community also influence the adoption of electronic commerce technology. It is also faster and somehow safer to trade on the internet rather than moving cash from one point to the other. If the online platform is not in doubt and the citizens trust the system by believing that there is adequate security for the information they provide online, there will be more patronage for the organizations and this will bring more profits to them. Other factors that emerge from this study are; the desire to reduce stress, change of business strategy, nature of customers, lack of cash at hand from customers, media publicity, ease of workload, easy transaction, business accuracy, accountability. In another dimension growth of businesses will be enhanced and this could lead to internationalization of the firm. Awa et al. (2011) posited that in small businesses relative advantage is the key positive variable influencing IT adoption in organizations. Azam and Quaddus (2013) put forward that most IT/IS adoption research has shown that the relative advantage is an important influencing factor and that this factor is positively related to the adoption decision. Earlier studies found that not only the relative advantage but also competitive pressure, consultant support and managerial enthusiasm motivate the growth of IT application of small businesses (Ahn and Matsui, 2011; Al-Fadhli, 2011; Alghamdi et al., 2012; Aminu, 2011). In addition, Aminu (2011) argued that perceived direct benefits prior EDI experience and perceived level of

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support from vendor were positive variables, while neither the level of perceived ease of use nor the governments influence was significant factors.

4.6.6 Improvement of Adoption of Electronic Commerce

4.6.6.1 Government Support to Encourage Electronic Commerce Adoption

This section examined how adoption of electronic commerce technology could be made effective among small and medium sized firms in Nigeria. The aim of this question is to enable interviewee suggest ways for both government and investors to better improve the environment of businesses by making it easier for small and medium sized firms to adopt modern technology infrastructure. In view of the above, this study revealed the following as ways that government could help make the adoption of e-commerce effective for small firms. They are; by providing loans at low interest rates from government, provide grants for small firms to improve work processes, policies that make it friendly for businesses and citizens to conveniently use electronic technology. Ensure that organizations that provide such technologies do not over-charge customers and other users. Ensure proper trainings are conducted for would be operators of these technology infrastructures. Government across board should improve road, electricity and network infrastructures as this would help in the delivering of goods and services that are ordered online by customers across the nation. They should introduce and implement highly punitive measures to would be online thieves and this will deter future thieves and encourage people to trade online. Aziz (2010) opined that perceived trust is the firm believe in the competence of an entity to act dependably, securely and reliably within a specified context (assuming dependability covers reliability and timeliness). Similarly, they defined distrust as the lack of firm belief in the competence of an entity to act dependably, securely and reliably within a specific context. Ayo et al. (2011) found that major challenges identified by respondents as impediments to B2C e-commerce acceptance include high tendency of internet fraud, reliability of payment instrument, insufficient information on the e-commerce site. There is need for the stakeholders to trust the system of e-commerce. Since these issues are fundamental they must be addressed otherwise the survival of e-commerce will be threatened. Abbasi et al. (2010) noted the relatively under developed credit card industry in many developing countries is also a barrier to e-commerce. E-commerce means more interaction with computers rather than people and Boateng et al. (2011) noted that not everyone has equal access to the technology. Those who do not have are at disadvantage and forcing them to use e-commerce placed them in stressful situation. Many would prefer the status quo. This is where orientation of stakeholders as well as training to increase computer knowledge, skills and applications can be a catalyst for SMFs to key into this new way of doing business. According to Boateng et al. (2011), competitive pressure has positive influence towards adoption of technologies. The norm has been that businesses tend to seek close relationship with each other by wanting to operate with the same attitude and with the same process. So acquisition by one will influence the acquisition by the other in order to promote more opportunities for growth especially in the area of supply chain management. Government also has a role to play particularly in providing the needed support that would facilitate the adoption of e-commerce (Bolongkikit et al., 2015). Government can simplify the rules and regulations as well as provide technical infrastructures for easy adoption of e-commerce. Boateng et al. (2011) concluded in his study

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that though the level of government support and (provision) of infrastructure vary from country to country (and) between countries (they) may affect organizations ability to utilize and adopt e-commerce. Moreso government may set the lead mandating that transactions with public agencies be done online.

4.6.6.2 Areas of Business Improvement with Appropriate Government Support

This section explored the areas small and medium sized firm's businesses are expected to improve with appropriate support from government in e-commerce technology adoption. After careful analysis of the interview transcript, the study reported on the following; that more income will accrue to the businesses if government provides appropriate support for SMFs to adopt e-commerce technology. In addition, the organizations will experience rapid business expansion with adequate support from government. Government could provide subsidized electronic gadgets and organize workshops and enlightenment campaign to train small business owners, employees and the entire citizens on how to use electronic infrastructure. Introduction of public policies and regulations that will build confidence in the citizens to adopt e-commerce technology will increase the number of people who trade online, and this will go a long way to help the small and medium sized businesses in the country. Introduction of electronic platform of trading will help employees deliver work targets and meet schedules, hence, ensuring high level of profitability to the organizations. Providing appropriate support for SMFs to adopt e-commerce will increase high value for the organizations products and services. This will eventually lead to international patronage and will increase foreign earnings for the business owners and Nigeria at large. Support for adoption of electronic commerce technology will improve financial record keeping of small and medium sized firms, improvement of financial records could be a requirement for them to access local credits from financial institutions and they could also get better ratings from international financiers or investors. This study also found that by introducing appropriate policies that will guarantee the security and safety of information provided by clients on the internet, customers will be confident to trade online. Hence, this will result to more business transactions, less flow of traffic on the road, and will result to more businesses for the business owners.

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CHAPTER 5: DISCUSSIONS AND CONCLUSION OF THE RESEARCH

5.1 Introduction

This section presents the salient questions the researcher explored. The aim of this study was to explore the level of awareness and readiness of e-commerce technology adoption by small and medium sized firms in Nigeria. Examine the perceived benefits of adoption of e-commerce technology among small and medium sized firms in Nigeria. Explore the challenges small and medium sized firms in Nigeria encounter in the adoption of e-commerce technology. Find out key factors influencing the adoption of e-commerce technology among small and medium sized firms in Nigeria. Proffer suggestions for government to support e-commerce technology adoption among small and medium sized firms in Nigeria. In addition, this thesis highlighted on the background of the problem which then leads to the problem statement, research questions and the objectives of the study in order to understand the studied context. The basis for the discussion and conclusion chapter is to further illuminate and present a vivid description of the understanding of the themes that have emerged from the data analysis chapter as it directly answers the five research questions posed at the beginning of this study (Chapter 1). Because several themes emerged from this study which are presented and discussed in earlier chapter (Chapter 4), there is need to consider another chapter for a clear presentation of the themes that directly answers the research questions for this study, and this clearly showed that the objectives for the research have been achieved. This section was aimed at answering the five research questions surrounding the adoption of electronic commerce technology by small and medium sized firms in Nigeria.

This study further aimed to find out the adoption of electronic commerce technology by small and medium sized firms in Nigeria. Hence, the discussion commenced by understanding the themes that have emerged from the literature survey before delving into the sub-themes from the interview schedule and then finally the emerging themes as grounded in the interview data. This Chapter included key findings from the research conducted. It included information about 25 small and medium sized firms in Nigeria. Some of those firms were restaurants, supermarkets, boutiques, furniture shops all located in Maiduguri, Borno state, Nigeria. The participants chosen for this study are owners of small and medium sized firms. They were all randomly selected, some of them have implemented electronic commerce technology, some partially, while some not at all. All the firms interviewed are properly registered by the required government regulations to carry out businesses in Nigeria. However, based on the study findings, it was found that several influencing factors, benefits, challenges, government support, awareness and readiness of e-commerce adoption, all as found in Nigeria are mentioned here. For this reason, the following are the specific objectives of this study:

5.2 Research Objectives

1 1: Find out the level of knowledge and readiness of e-commerce technology adoption by small and medium sized firms in Nigeria.
2 2: Examine the perceived benefits of adoption of e-commerce technology among small and medium sized firms in Nigeria.

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3 3: Explore the challenges small and medium sized firms in Nigeria encounter in the adoption of e-commerce technology.
4 4: Find out key factors influencing the adoption of e-commerce technology among small and medium sized firms in Nigeria.
5 5: Suggest how government could support e-commerce technology adoption among small and medium sized firms in Nigeria.

5.3 Research Questions

1 1: What is the level of knowledge and readiness of e-commerce technology and how is it been adopted among small and medium sized firms in Nigeria?
2 2: How beneficial is the adoption of e-commerce technology among small and medium sized firms in Nigeria?
3 3: What challenges do small and medium sized firms in Nigeria face in the adoption of e-commerce technology?
4 4: What are the factors that influence the adoption of e-commerce technology among small and medium sized firms?
5 5: How can government improve adoption of e-commerce technology among small and medium sized firms in Nigeria?

Research Question 1: What is the level of knowledge and readiness of e-commerce technology and how is it been adopted among small and medium sized firms in Nigeria?

5.3.1 Level of Awareness and Readiness to Adopt Electronic Commerce

Electronic commerce (EC) has been defined in several ways depending on the context and research objective of the author. Electronic commerce has been perceived in SMFs as the utilization of ICT and applications to support business activities. The study elaborated the definition where they refer e-commerce as a set of technology that is utilized to support online business transactions between the organizations and their direct end customers and between the organizations and others within their business network(s). Meanwhile, a more specific definition was provided where it was stated that "e-commerce is the process of buying, selling, transferring, or exchanging products, services and/or information using computer networks mostly the Internet and Intranets." Electronic commerce comprises of exchanges of information to the customers and suppliers, leading towards the process of selling and making the transaction through online networks. However, this research finds similarity with literatue review that entrepreneurs and users knowledge are important ingredients for the determination of electronic commerce implementation in Nigeria. This is because awareness among the aforementioned category of people go-along way in understanding electronic commerce adoption research.

However, in this study, electronic commerce has been defined in various perspectives depending on the understanding of each individual. From the various definitions collated from the content analysis of the interview transcript. The concept of electronic commerce was described as the use of more upgraded technological and electronic means to conduct business activities. In addition, it is the process by which businesses and consumers buy and sell goods through electronic platforms or medium. Simplistically put, electronic commerce

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can also be viewed as cashless or rather electronic transactions, and or electronic marketing. In another dimension, it can also be perceived as the process of engaging or using the internet to carry out business transactions. Eventhough this particular study has reported on various definitions and descriptions of the concept of electronic commerce as understood by the participants of this research. The study also found that only a negligible number of the respondents opined that they do not fully or rather some say that they do not understand what the term electronic commerce means.

Electronic commerce refers to sharing of business information, maintaining business relationships and conducting business transactions by means of telecommunication networks. It also means a form of business transaction involving inter-firm alignment, where supposedly independent parties/firms interact and collaborate real-time through electronic networks rather than physical contacts. These suggest that electronic commerce encompasses electronic trading, electronic messaging, electronic data interchange, electronic fund transfer, electronic mail (e-mail), facsimile (FAX), electronic catalogue, bulletin board services, shared databases and directories, electronic news and information services, electronic payroll, electronic forms, and other types of electronic data transmission. In conclusion, the study found that majority of the small and medium sized firms have an idea of what electronic commerce entails.

On the readiness to adopt electronic commerce among small and medium sized firms in Nigeria, this research found that many of the small and medium sized firms are already implementing electronic commerce in their business operations, some are partially implementing it, while very few are not willing to adopt it. Hence, findings revealed that majority of the respondents of this study reported that they are fully ready and are implementing the use of electronic commerce technology in conducting business transactions. However, further analysis of the data reported that adoption of e-commerce by small and medium sized firms depend on managements' decision. Some of the respondents mentioned that they are very ready to implement and enhance more e-commerce technology if appropriate infrastructure is made available by the owners of the organization. However, considering the numerous benefits accruable to the organization, business owners opined that they are willing to adopt electronic commerce technology in delivering their products and services.

Research Question 2: How beneficial is the adoption of e-commerce technology among small and medium sized firms in Nigeria?

5.3.2 Benefits of Adoption of Electronic Commerce

In this study, the researcher reported on findings regarding the benefits accruable in the adoption of electronic commerce from the perspective of the entrepreneur. There are empirical observations that SMF owners have been actively searching for solutions and methods that are suitable to adopt and integrate e-commerce into their business processes. However, if the implementation of e-commerce succeeds, the potential benefits for small and medium business includes: increased sales, improved profitability, increase productivity, reduce costs associated with inventory, procurement and distribution, improving the quality

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of service, and guarantee competitive position. On the other hand, if the implementation of e-commerce does not work, it will impact heavily on SMFs with their limited resources. The empirical result from past studies compliment that of the recent findings about the need to understand the benefits of adopting e-commerce technology by small and medium sized firm owners. This study further reported that investing in internet technology infrastructure by small and medium sized firms owners provide the following benefits: reduction of stress, less time consuming, it help in reducing the movement of money (cashless policy of FGN) from one location to another, makes business transaction less cumbersome for the participants. In addition to this, adoption of electronic commerce improves market transaction, it enhances proper saving of revenue, as business owners would not have direct access to cash realized on a daily basis. This study also indicated that adoption of electronic commerce lessen the stress in product and service advertisement, saves time from the dimension of customers, business owners/entrepreneurs and employees because operations are made seemless. This enhances customer satisfaction as business funds are secured and proper accountability enhanced.

However, from the perspective of the customers, the study found that the benefits of adopting e-commerce technology by customers of small and medium sized firms are: making transaction or buying easy, reduces the stress of going to bank, makes the transaction easy, enjoy cashless system of marketing, lessen customers stress due to wide awareness, comfortability with service and product. In addition, it makes customers to feel well at home i.e even without cash they can come for transaction knowing fully well that without cash at hand they can still transact businesses and money deducted from their bank account through online internet platform. This study also revealed that with e-commerce transaction, customers can receive goods paid for at the comfort of their home. However, past studies also stressed that the possibility of shopping online from anywhere is the most obvious and most commonly cited advantage of e-commerce, and was found to be the most important perceived consumer benefits of internet shopping. In addition, since the boundaries of e-commerce are not defined by geographical or national borders, consumers will benefit from a wide selection of vendors and products, including a wider availability of hard-to-find products. The internet can provide consumers with up-to-the minute information on prices, product availability, product types, product alternatives, etc. And consumers may benefit from the shopping process being faster in the market-space than in the market-place as a result of the rapidity of the search process and transactions.

From the perspective of the organization, this research revealed that they benefits of adopting e-commerce technology by small and medium sized firms include: increase in organisation's revenue base, ease of work and enhances profitability, it will also increase the number of customers as customers will be satisfied, it will reduce the movement of money both from customer and organization. However, to a great extent introduction of electronic commerce enhances positive business operations. It provides suitable or conducive environment for competition. Electronic commerce increases the rate of customer patronage, makes or improves the efficiency of doing business and enhances ease of work processes on the side of the organization's employees.

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5.3.3 Enhancement of Business Performance through Adoption of E-Commerce

The implementation of electronic technology will bring about massive change in performance of the business. It would bring about increase in the rate of customer participation and this will result to more profitability. It will bring about change in market system by increasing efficiency of products and services delivered as a result of the use of technology. Business performance will be enhanced due to ease of trading activities via online platform. Business performance will be enhanced and organizational stress reduced if the venture owners implement electronic technology in their day to day operation. Internationalization of business activities is made easier, customer satisfaction enhanced, increased customer value, improved business growth, profitability and work processes enhanced due to competition from globalization.

Research Question 3: What challenges do small and medium sized firms in Nigeria face in the adoption of e-commerce technology?

5.3.4 Challenges of Adoption of Electronic Commerce

Small and medium sized firms encounter certain problem in the adoption of e-commerce as every new technology, when exposed and comes to the public faces so many difficulties. It takes time for people to get familiar with it. The other point is that since the technology like e-payment is new, there should be so many things that should be invented and prepared as a base for expanding it. Most of the equipment used in the propagation of e-transaction is expensive and not easy and simple for anybody to apply them. Other problems are to expand and grow the other areas engaged in or are part of e-commerce, like telecommunication and other related services. The challenges in the embrace of e-commerce by SMFs can be perceived from the external factors that may include the economic, technological and social concerns. The internal challenges are poor internal infrastructure, lack of ICT awareness and knowledge by management/owners and worker's insufficient financial resources. In general, the main challenges to embrace of e-commerce are the following: many organizations delay the adoption of e-commerce because of lack of internal enterprise. In addition, managers or CEO's innovative and IT knowledge has positive effect toward adoption of e-commerce and if employees already know about e-commerce, the organization will be more disposed to adopt e-commerce. The challenge here is that the lack of knowledge and skills on ICT will not allow the SMF owner to push for e-commerce development. Considering the challenges of adopting e-commerce from the perspective of the entrepreneur, the study revealed that network issues, inadequate knowledge of the customers, electrical fault, bad network, ignorance on the part of users of the platform, unwillingness of the entrepreneur to accept new innovation, bank charges, inadequate capital, lack of knowledge on the part of the business owner may serve as barriers to e-commerce adoption.

The study examines the challenges small and medium sized firm owners in Nigeria face in the adoption of e-commerce technology. The perspective the researcher is trying to understand in this section is to determine how customers adopt electronic commerce technology in their day to day purchase of goods and services. However, this study reported the following as among the problems customers encounter in the adoption of electronic commerce in Nigeria. They are: lack of awareness of how the electronic commerce

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technology works, surcharges, network problems, ignorance of knowledge of e-commerce machines or gadgets, resistance to change by some of the customers. In addition to these: lack of awareness of how the electronic commerce technology works, problems of network inconsistency and poor network, transaction error and lack of knowledge of the customers. However, virtually all organizations in Nigeria have online presence and internet access primarily due to high number of cyber cafes and telecommunication companies that offer internet access to all and sundry at a fee. One can safely conclude that while availability of simple basic infrastructure and cost can no longer be a challenge, the question to pose is to what use the infrastructures is being put to use by the potential customers. Hence, the ultimate is for businesses to have website that is efficient and effective to target niche market and attract the right customers to company products and services. The issue of security, trust and privacy are amongst the most critical determinants to the success of e-commerce adoption for online consumers and businesses.

This study revealed that from the organization viewpoint, the following may pose as barriers to e-commerce adoption: lack of customers enlightenment about the gadgets, it is very hard for the organization especially in area of creating awareness, inadequate awareness on the part of employees and customers on how to use the platform. In addition, proper compliance on how the system works, this may be due to low level of literacy on the part of the users. Customers have to be assured of the usefulness of the technology and security of their information before they will be confident to use it. Above all, inadequate telecommunication and network infrastructure may also be a major hindrance to the adoption of electronic commerce by organizations in Nigeria. However, in the same view with empirical results, organisations adopting e-commerce in developing countries face problems such as lack of telecommunications infrastructure, lack of qualified staff to develop and support e-commerce sites, lack of skills among consumers needed in order to use the internet, lack of timely and reliable systems for the delivery of physical goods, low bank account and credit card penetration, low income, and low computer and internet penetration. Most of the international economies depend basically on the role of SMFs in supporting the national economy in different countries. Small and medium sized firms contribute significantly to the economies of the African continent, representing around 90% of all businesses, and providing the main source of jobs and income for African people. Many SMFs in developing countries are not achieving even minimal levels of e-commerce adoption. In addition, the adoption of web-enabled transaction processing by small businesses has not been as widespread as would expect. It has been demonstrated previously that the rate of e-commerce adoption in SMFs has been low. The literature suggests that in most developing countries, e-commerce adoption has been hindered by the quality, availability and cost of access to necessary infrastructure whilst developed countries have employed a relatively accessible and affordable infrastructure for e-commerce adoption.

Research Question 4: What are the factors that influence the adoption of e-commerce technology among small and medium sized firms?

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5.3.5 Factors Influencing Electronic Commerce Adoption

Previous research has established the factors that influence different information technology adoptions. These factors can be categorized as organizational readiness, compatibility, external pressure, perceived ease of use, and perceived usefulness. Organizational readiness was conceptualized as the financial and technological resources at the disposal of the firm to adopt electronic commerce technology. Organizational readiness includes the top management's enthusiasm to adopt IT, existing technology infrastructure, compatibility of the firm's e-commerce, and culture and values. Compatibility has been found to be a significant factor that impacts on adoption of IT and e-commerce. External pressure (EP) includes competition, government, industry, and reliance on firms that are using e-commerce. Perceived EU addressed the extent to which a firm's perceived adoption of e-commerce would be effortless. Finally, PU implies the extent to which a firm using e-commerce perceived it to be useful in terms of an improvement in corporate job performance. The above findings from earlier studies compliments the current research in the sense that the aim of the researcher is to find out the factors that influence the adoption of electronic commerce technology among small and medium sized firms in Nigeria. After careful transcription, coding and analysis of interview data, this study found that the following factors encourage small and medium sized firms to adopt electronic commerce technology in Nigeria. Some of the influencing factors as found in this study are: advancement in technology, simple and comfortable for customers to trade online, it is less time consuming, so it help to free up time for people to do other things. In addition, the prevailing culture and belief system of the people in the community also influence the adoption of electronic commerce technology. It is also faster and somehow safer to trade on the internet rather than moving cash from one point to the other. If the online platform is not in doubt and the citizens trust the system by believing that there is adequate security for the information they provide online, there will be more patronage for the organizations and this will bring more profits to them. Other factors that emerge from this study are: the desire to reduce stress, change of business strategy, nature of customers, lack of cash at hand from customers, media publicity, ease of workload, easy transaction, business accuracy, accountability. In another dimension, growth of businesses will be enhanced and this could lead to internationalization of the firm.

Research Question 5: How can government improve adoption of e-commerce technology among small and medium sized firms in Nigeria?

5.3.6 Government Support to Encourage Electronic Commerce Adoption

In this study, the finding revealed that, the emulation of the steps taken by the government of USA and other successful countries in e-commerce technology has helped Nigerian government to certain extent to properly channel the country through modern technology activities. This can be seen in areas of investment in technology infrastructure and SMFs financing. Even though investment in this sector is encouraging, certain fears still exist as put forward by some stakeholders in the industry. They mentioned that the rate of adoption of e-commerce is still low in the country despite the effort of government and other stakeholders. However, this study revealed that should government encourage adoption of e-commerce, business performance will be enhanced. However, the following are ways that government could help make the adoption of e-commerce effective for small firms. They are: to provide

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loans at low interest rates, provide grants for small firms to improve work processes, introduce policies that make it friendly for businesses and citizens to conveniently use electronic technology. Ensure that organizations that provide such technologies do not over charge customers and other users. Ensure proper trainings are conducted for would be operators of the technology infrastructures. Government across board should improve road, electricity and network infrastructures as this would help in the delivering of goods and services that are ordered online by various customers across the nation. They should introduce and implement highly punitive measures to would be online thieves and this will deter future thieves and encourage people to trade online. Empirical findings showed that perceived trust is the firm belief in the competence of an entity to act dependably, securely and reliably within a specified context. Similarly, distrust is described as the lack of firm belief in the competence of an entity to act dependably, securely and reliably within a specific context. In addition, major challenges identified by this study as impediments to B2C e-commerce acceptance include high tendency of internet fraud, reliability of payment instrument, insufficient information on the e-commerce site. Hence, there is need for the stakeholders to trust the system of e-commerce. Since these issues are fundamental they must be addressed otherwise the survival of e-commerce will be threatened. In another opinion, the relatively under developed credit card industry in many developing countries is also a barrier to e-commerce implementation.

E-commerce means more interaction with computers rather than people and moreover, not everyone has equal access to e-commerce technology, those who do not have are at disadvantage and forcing them to use e-commerce placed them in stressful situation. Many would prefer the status quo. This is where orientation of stakeholders as well as training to increase computer knowledge, skills and applications can be a catalyst for SMFs to key into this new way of doing business. The competitive pressure has positive influence towards adoption of technologies. The norm has been that businesses tend to seek close relationship with each other by wanting to operate with the same attitude and with the same process. So acquisition by one will influence the acquisition by the other in order to promote more opportunities for growth especially in the area of supply chain management. Government also has a role to play particularly in providing the needed support that would facilitate the adoption of e-commerce. Government can simplify the rules and regulations as well as provide technical infrastructures for easy adoption of e-commerce. Though the level of government support and (provision) of infrastructure vary from country to country (and) between countries (they) may affect the organization ability to utilize and adopt e-commerce. Moreso government may set the lead by mandating that transactions with public agencies should be online.

Small and medium sized firms believe that they could improve their businesses if government provides appropriate support in electronic commerce technology adoption. In view of this, the following were found as areas where performance of small firms could improve. The areas are: organizations will experience rapid business expansion with adequate support from government, government could provide subsidized electronic gadgets and organize workshops and enlightenment campaign to train small business owners, employees and the entire citizens on how to use electronic infrastructure. Introduction of public policies and

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regulations that will build confidence in the citizens to adopt electronic commerce technology will increase the number of people who trade online, and this will go a long way to help the small and medium sized businesses in the country. Introduction of electronic platform of trading will help employees deliver work targets and meet schedules, hence, ensuring high level of profitability to the organizations. Providing appropriate support for small and medium sized firms to adopt electronic commerce will increase high value for the organizations' products and services. This will eventually lead to international patronage and increase foreign earnings for the business owners and Nigeria at large. Support for adoption of electronic commerce technology will improve financial record keeping of small and medium sized firms, improvement of financial records could be a requirement for them to access local credits from financial institutions and they could also get better ratings from international financiers or investors. This study also found that by introducing appropriate policies that will guarantee the security and safety of information provided by clients on the internet, customers will be confident to trade online. Hence, this will result to more business transaction, less flow of traffic on the road, and will result to more businesses for the business owners.

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APPENDIX A

Faculty of Management Sciences
Oxford University, Namibia.
August, 2017

Letter of Informed Consent

Dear Sir/Ma,
I am a PhD research student with the above mentioned university. I am conducting a qualitative research on the topic: **ELECTRONIC COMMERCE TECHNOLOGY ADOPTION AMONG SMALL AND MEDIUM SIZED FIRMS IN NIGERIA.** The main purpose of this research is to find out the challenges and benefits of electronic commerce technology adoption among small and medium sized firms in Nigeria. The outcome of this research will be used strictly for academic work. In view of the above, I wish to solicit for your precious time to respond to the under listed interview questions. Kindly be informed that this will be a tape recorded interview but be assured of strict confidentiality as your identity will not be disclosed anywhere in the study.

Thank you for your anticipated kind cooperation.

Alhaji Abisor Kabir
Tel: +234-703-472-0099

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Objectives of the Study

1. To find out the level of knowledge and readiness of e-commerce technology adoption by small and medium sized firms in Nigeria.
2. To examine the perceived benefits of adoption of e-commerce technology among small and medium sized firms in Nigeria.
3. To expose the challenges small and medium sized firms in Nigeria encounter in the adoption of e-commerce technology.
4. To find out key factors influencing the adoption of e-commerce technology among small and medium sized firms in Nigeria.
5. Suggest how government could support e-commerce technology among small and medium sized firms in Nigeria.

Research Questions

1 What is the level of knowledge and readiness of e-commerce technology adoption among small and medium sized firms in Nigeria?
2 How beneficial is the adoption of e-commerce technology among small and medium sized firms in Nigeria?
3 What challenges do small and medium sized firms in Nigeria face in the adoption of e-commerce technology?
4 What are the factors that influence the adoption of e-commerce technology among small and medium sized firms in Nigeria?
5 How can adoption of e-commerce technology be made effective among small and medium sized firms in Nigeria?

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APPENDIX B: Interview Schedule for Small and Medium Sized Firms in Nigeria

How Small and Medium Sized Firms Adopt E-Commerce Technology in Nigeria

Introduction

Section A: Demographics of Respondents

First of all, please tell me about your personal background:

- How old are you?
- How old were you when you established this company?
- What is your Educational qualification?
- What is your Professional qualification?
- What is your marital status?
- What is your position in this company?

Also about your company background:

- What year did you set up your company?
- How many staff do you have?
- Do you adopt technology in your business operation?
- What kind of business do you operate?

Section B

1.0 The first question is about the level of knowledge and readiness to adopt e-commerce technology by small and medium sized firms.

1.1 What do you understand by the term electronic commerce technology?

1.2 Mention some examples of small businesses who adopt electronic commerce technology?

1.3 Mention some electronic commerce tools that can be used in business transactions?

1.4 How ready is your business in adopting e-commerce technology?

2.0 The second question is about the benefits inherent in the adoption of e-commerce technology among small and medium sized firms.

2.1 As an entrepreneur, what benefits do you derive in the adoption of electronic commerce technology?

2.2 What benefits do your customers derive in the adoption of electronic commerce technology by your firm?

2.3 What benefits have your organization derived by adopting e-commerce technology?

2.4 How do you think adoption of electronic commerce technology would enhance performance of your business?

3.0 The third question is on the challenges small and medium sized firms in Nigeria face in the adoption of e-commerce technology.

3.1 As an entrepreneur, what challenges do you encounter in the adoption of electronic commerce technology?

3.2 What problems do your customers encounter in the adoption of electronic commerce technology by your firm?

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3.3 What impediments do your organization encounter by adopting e-commerce technology?
3.4 How do you think challenges faced in the adoption of electronic commerce technology could be eliminated for enhanced performance of your business?
4.0 The fourth question is on the factors that influence the adoption of e-commerce technology among small and medium sized firms.
4.1 Kindly mention the factors that influence your business to adopt electronic commerce technology? If already using it.
4.2 Kindly mention the factors that interest your business to want to adopt electronic commerce technology? If already not using it.
5.0 The fifth question is on how adoption of e-commerce technology can be made effective among small and medium sized firms.
5.1 What support do you expect from government that could encourage your business to adopt e-commerce technology?
5.2 In what areas would your business improve if government provide infrastructures for your business to adopt e-commerce technology?
5.3 In what ways can government help to encourage the adoption of e-commerce technology among small and medium sized firms?
Thank you