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Adoption of Information and Communication Technology in Nigerian Small- to Medium-Size Enterprises

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This is to certify that the doctoral study by

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2016

Abstract

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by

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MBA, University of Phoenix, 2011

B.ENG, Ambrose Ali University, Nigeria, 1994

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Small- to medium-size enterprises (SMEs) play a vital role in a dynamic economy through job creation, poverty alleviation, and socioeconomic development in developed and developing countries. The purpose of this multiple case study was to explore how SME leaders in Lagos, Nigeria, adopted information and communication technology (ICT) as a business strategy to increase profitability and compete globally. Organizational leaders have adopted ICT so that their organizations can become more efficient, effective, innovative, and globally competitive. This study involved 4 SMEs that had successfully implemented ICT. The participants included 5 SME leaders from each of the SMEs. The data collection method included in-person semistructured interviews of participants and review of existing company data. Data were analyzed using inductive data analysis, which included member checking to ensure trustworthiness of interpretations and occurred until theoretical saturation had occurred. The technology acceptance model (TAM), which specifies the relationship between perceived usefulness, perceived ease of use, attitude toward computer use, and intention to use technology, was applied as a framework to explain the Nigerian SME's ICT adoption strategies. Four major themes emerged from the data analysis: ICT adoption factors, ICT roles and benefits, role of government, and SME success factors. The findings of this study may help SME leaders and government leaders address many of the factors inhibiting the adoption of ICT in SMEs. The findings of this study may positively affect social change by ensuring that SMEs are successful and able to create jobs, which in turn may help to alleviate poverty and promote socioeconomic development through adoption of ICT.

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Dedication

I would like to thank my wife, Uloma Okundaye; my daughter, Esohe Okundaye; and my two sons, Eduwa Okundaye and Osazeme Okundaye, for their support and encouragement through this doctoral journey. I would also like to thank my parents, Reuben and Nike Okundaye, for all of their support. Lastly, in loving memory of my late mother, Remi Okundaye, I say thank you for everything. I dedicate this work to them and to all my friends and family who have been with me on this journey.

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Section 1: Foundation of the Study

The implementation of information and communication technology (ICT) in small and medium-size enterprises (SMEs) is vital for the socioeconomic development of an economy, especially in developing countries (Apulu & Latham, 2011; Ghobakhloo, Hong, Sabouri, & Zulkifli, 2012). Leaders of SMEs incrementally use ICT-based electronic commerce to gain competitive advantage in the global marketplace (Ghobakhloo et al., 2012). Despite the growth of ICT-based electronic commerce within SMEs in developed countries, the rate of ICT adoption within SMEs in developing countries has remained relatively low (Asare, Gopolang, & Mogotlhwane, 2012; Azam & Quaddus, 2013). The low adoption rate of ICT by SME leaders in developing countries such as Nigeria has contributed to a low rate of economic development in these countries (Jones, Beynon-Davies, Pickernell, & Packham, 2014; Mokaya, 2012). Understanding the cause of the low adoption rate of ICT in Nigeria may help to improve SMEs' competitive advantages and foster positive economic development in the region. In this multiple case study, I explored the factors that influence SME leaders' adoption of ICT as a business strategy to increase profitability and achieve competitive advantage in the global market.

Background of the Problem

Small to medium-size enterprises are an integral part of innovation and growth in a dynamic economy; thus, SMEs have a vital role in job creation (Dermol & Tavčar, 2012; Gagliardi, 2013). In developed countries such as the United States and United Kingdom, SMEs account for over 99% of employers and contribute over 50% to the

country's gross domestic product (GDP; Gbandi & Amissah, 2014; Tobora, 2014). In developing countries such as Ghana, SMEs contribute approximately 70% to the GDP and account for approximately 92% of business (Asare et al., 2012). In Nigeria, SMEs conduct 90% of business in the country but contribute less than 10% to the GDP (Gbandi & Amissah, 2014).

Growth in ICT adoption within both large and small businesses in developed countries had been significant (Al-Debei & Al-Lozi, 2012; Ghobakhloo et al., 2012). However, the ICT adoption rate within SMEs in developing countries has remained relatively low (Asare et al., 2012; Mokaya, 2012). Innovation in ICT has contributed to the improvement of organizational performance and the achievement of competitive advantage for organizations within developed and developing countries (Al-Debei & Al-Lozi, 2012). Global competitiveness and the need to stimulate growth are compelling reasons why leaders of SMEs need to adopt ICT (Ghobakhloo & Tang, 2013). Researchers have conducted studies on the factors that affect ICT adoption by SME leaders in developing countries such as Nigeria (Apulu & Latham, 2011; Asare et al., 2012; Mokaya, 2012). However, not many studies exist on the factors that influence SME leaders to adopt ICT as a business strategy to achieve competitive advantage in the global market.

Problem Statement

Small to medium-size enterprises in developing countries have lower ICT adoption rates and different challenges compared to their counterparts in developed countries (Asare et al., 2012; Mokaya, 2012). The difference between ICT penetration

rates in developing and developed countries is substantial, as developed countries have a significantly higher Internet penetration rate of 78.3% compared to 32.4% for developing countries (International Telecommunication Union [ITU], 2014). Likewise, the percentage of households with computers in developed countries was 75.5%, compared to 27.6% for developing countries (ITU, 2014). The general business problem was that SMEs in developing countries have lower ICT adoption rates than their counterparts in developed countries, which contributed to SMEs being less likely to improve performance and compete globally (Asare et al., 2012; Ghobakhloo & Tang, 2013). The specific business problem was that some SME leaders have not adopted ICT as a business strategy to increase profitability and compete globally.

Purpose Statement

The purpose of this qualitative multiple case study was to explore how SME leaders use ICT adoption as a business strategy to increase profitability and compete globally. Four SMEs whose leaders had successfully implemented ICT served as case studies. This study had 20 participants, which included five leaders from each SME. The data collection method included semistructured interviews of participants. The selection of a sample ensured that the data were from decision makers within SMEs, particularly those who made the decision to implement ICT. The findings of this study may help SME and government leaders address many of the factors inhibiting the adoption of ICT in SMEs; thus, this would positively affect societal change by ensuring that these firms are successful, create more jobs, alleviate poverty, and promote socioeconomic development through adoption and use of ICT.

Nature of the Study

Selecting the appropriate research method and design is vital in a research study (Kipkulei, 2013). The research method and design influence the study result, which determines the conclusions drawn and recommendations made in a research study (Yin, 2013). Therefore, to identify the most appropriate research method and design for my study, careful review, comparison, and contrast of the different academic research methods and designs were necessary.

The qualitative case study research method is the most appropriate for research in information technology (Apulu & Latham, 2011). Researchers who use the qualitative methodology rely primarily on participants' interpretation of the topic under review (Yin, 2013). The qualitative research method with a multiple case study design includes a means to explore multiple events, programs, activities, processes, or individuals by collecting data using a variety of data collection methods, including interviews, review of existing documents, and observations of participants onsite over a period of time (Yin, 2013). The qualitative research method with a multiple case study design was most appropriate for my study because I explored the activities of multiple SMEs and collected data from multiple individuals using data collection methods that included in-person interviews and participant observation during the interview process. The qualitative research method served as a means by which I gained a deeper understanding of the phenomenon I was researching by putting forward inductive arguments based on feedback from participants without relying on deductive quantitative statistical analysis.

The case study design is a means to study a phenomenon within its natural context (Apulu & Latham, 2011; Yin, 2013). In contrast to other approaches, a qualitative case study design generally includes a focus on a distinct occurrence of events or on a single experience, where the researcher is able to gain a better understanding of the phenomenon (Houghton, Casey, Shaw, & Murphy, 2013). The case study research design involves exploring one or more cases that are units of activity bound by time (Yin, 2013). The case study research design is appropriate for providing context to the how and why of a research question because multiple methods of collecting data such as document review, observations of participants, interviews, or an examination of artifacts are available for the study (Yin, 2013). The multiple case study does not involve reporting on stories of individuals or groups, as in the case of phenomenology, ethnography, or narrative design (Yin, 2013). I chose the multiple case study design over other research designs, such as the phenomenology, narrative, or ethnography approaches, because my research study did not involve reporting on stories of individuals but involved the exploration of activities of multiple SME leaders. I applied a multiple case study design, rather than a single case study design, to augment my research findings from a single case by interviewing multiple SME leaders who had successfully implemented ICT as a business strategy to improve performance and gain global competitive advantage.

Research Question

The central research question was as follows: How do SME leaders use ICT adoption as a business strategy to increase profitability and compete globally? Each

interview started with questions to help develop a profile of the participants, thus establishing the framework for follow-up questions. A set of questions addressed the central question on how SME leaders in Lagos, Nigeria, use ICT adoption as a business strategy to increase profitability and compete globally. Another set of questions was necessary for further inquiry into the factors that influence SME leaders' adoption of ICT as a business strategy to increase profitability and achieve competitive advantage in the global market. Through the open-ended questions, participants provided additional information that was relevant to the study. The in-depth interview questions to address the main research questions follow.

Interview Questions

1. What business strategies contributed to your success as a SME?
2. What is your view on the role of ICT in SMEs in Nigeria?
3. In what ways did ICT adoption contribute to your SME's profitability?
4. How has ICT adoption helped your organization compete globally?
5. What factors influenced your decision to adopt ICT in Nigeria?
6. In your opinion, how significant is the influence of culture or a social belief system in relation to your ICT adoption decision?
7. What other factors contributed to your decision as a SME leader in Lagos, Nigeria, to adopt ICT?
8. What role can government and other private institutions play in promoting ICT adoption as a business strategy within SMEs in Nigeria?

Conceptual Framework

In this study, I applied the technology acceptance model (TAM) as a framework to explain the ICT adoption strategies of SME leaders in Nigeria. Davis developed the TAM in 1986 to explain how users perceive and use technology (Yeh, 2015). The TAM specifies the relationship between perceived usefulness, perceived ease of use, attitude toward computer use, and intention to use technology (Wunnava, 2015; Yeh, 2015). The TAM is an established theoretical model used to explain and predict user behavior toward ICT, where perceived usefulness is one of two causal antecedents of adoption and use of new technology (Ghobakhloo & Tang, 2013). The TAM is the most significant extension of Ajzen and Fishbein's theory of reasoned action (TRA; Azam & Quaddus, 2013; Rahayu & Day, 2015; Toft, Schuitema, & Thøgersen, 2014). The strength of TAM is that it replaced and expanded on many of the TRA measures of attitude with just two technology acceptance measures: perceived ease of use and perceived usefulness (Azam & Quaddus, 2013; Toft et al., 2014). The TAM also has roots in the theory of planned behavior (TPB), which is a modification of the TRA and emphasizes the measures of intention to use technology (Azam & Quaddus, 2013; Toft et al., 2014; Wunnava, 2015; Yeh, 2015). The TAM has been the most robust theory used in studies to explain user acceptance of ICT (Olise, Anigbogu, & Okoli, 2014). The most appropriate framework for analyzing the business strategies of SME leaders toward making decisions on ICT adoption was TAM, which was appropriate for exploring the effect of different factors, including culture, on the perceived usefulness and perceived ease of use of ICT, particularly among SME leaders in Lagos, Nigeria.

Definition of Terms

This study included several operational terms that needed definition for readers to gain a better understanding of their use. The definitions of these terms are as follows:

Electronic commerce: Electronic commerce is a method of conducting business that can take a variety of forms, including electronic data interchange, mobile telephones, direct link-ups with vendors and suppliers, Internet, intranet, extranet, electronic catalog ordering, and e-mails (Ghobakhloo & Tang, 2013).

Information and communication technology (ICT): Information and communication technology is a collection of hardware, software, and services within an organization used to process information to achieve a business goal (Tovar, 2012).

Small to medium-size enterprises (SMEs): Many researchers have struggled with different definitions of SMEs and have attempted to define SMEs in a qualitative manner that contrasts with the quantitative definition, which uses measures such as the number of employees, revenue, and net worth (Tovar, 2012). The Small and Medium Enterprises Development Agency of Nigeria's (SMEDAN's) definition of a *small business* specifies between 10 and 49 employees and an annual turnover of 5-49 million naira, whereas the definition of a *medium enterprise* specifies 50 to 199 employees with an annual turnover of 50-499 million naira (Apulu & Latham, 2011).

Assumptions, Limitations, and Delimitations

The participants selected for this multiple case study were five leaders from each of four SMEs who had successfully implemented ICT. Identifying the assumptions,

limitations, and delimitations of my doctoral study was important. The following assumptions, limitations, and delimitations were applicable to this study.

Assumptions

Assumptions in a research study are conditions that are outside the control of the researcher, but without which the study would become invalid or irrelevant (Simon & Goes, 2012). The key assumption made in this study was that the participants answered the questions truthfully and provided information based on their personal experience with the decision to adopt ICT within their business practice. Another assumption was that ICT adoption could help business leaders create competitive advantage in the global market.

Limitations

Limitations are potential weaknesses of a study that are not within the control of the researcher (Simon & Goes, 2012). The assumption of truthfulness and unbiased response from participants was a study limitation, as inaccurate information would invalidate the study outcome. A researcher's bias in interpreting research data was another limitation that had the potential to influence the outcome of this study; as such, it was important to identify and mitigate any bias resulting from data analysis through the process of member checking until data saturation occurred.

Delimitations

Delimitations of a study are the characteristics that define the study boundaries and limit the scope of the study (Simon & Goes, 2012). This research study had a limited scope because the study depended primarily on data collected from a small number of

SMEs in Lagos, Nigeria. The study finding from interviewing leaders from a small number of SMEs was insufficient to understand the behavior of a larger population of SMEs. This study took place within the boundaries of the metropolitan city of Lagos, Nigeria, and thus does not reflect the behavior of the entire population of SME leaders.

Significance of the Study

Small to medium-size enterprises are the backbone of any economy, and ICT investments within SMEs have contributed significantly to the growth of SMEs as well as the growth of economic sectors that adopt ICT (Taylor, 2013). Information and communication technology includes a wide range of possibilities for process improvement to gain competitive advantage and access new market opportunities (Apulu & Latham, 2011). Information and communication technology adoption can therefore be a significant contributing factor toward the success of SMEs and the development of economies that depend on SMEs for growth, particularly in developing countries.

Contribution to Business Practice

In Nigeria, a *small business* is any organization having between 10 and 49 employees and an annual turnover of 5 to 49 million naira, while a *medium enterprise* is any business with 50 to 199 employees and an annual turnover of 50-499 million naira (Apulu & Latham, 2011). Approximately 96% of businesses in Nigeria are small businesses (Tobora, 2014). In developed economies, SMEs contribute over 50% of the GDP on average (Tobora, 2014). In 2002, the secretary general of the United Nations, Kofi Annan, warned that ICT must be prominent in the effort to achieve the Millennium Development Goal of 2015 (Mukhtar, 2013). Therefore, the success of ICT

implementation within SMEs in Nigeria would trigger economic growth for both the organization and the country, with a possible effect on other sub-Saharan countries.

Researchers have identified multiple factors that influence the implementation of ICT in developing countries such as Nigeria. The cost of ICT implementation, available ICT skills, available infrastructure, and ICT knowledge are the primary factors that influence the implementation of ICT in Nigerian SMEs. The focus of this doctoral study was identifying those factors largely ignored in other studies on the factors impeding ICT adoption, particularly those factors influencing SME leaders' adoption of ICT as a business strategy to achieve global market competitive advantage, with a focus on Lagos, Nigeria. I also explored the effect of culture or belief systems on ICT adoption within SMEs in Lagos, Nigeria.

Attitude influences individuals' decisions to adopt, as well as any aversion to, technology (Elbeltagi, Al Sharji, Hardaker, & Elsetouhi, 2013). The culture or belief system of a group or society plays a role in the decisions made by individuals of that group (Erumban & De Jong, 2006). These decisions influence management or business practice and include the decisions made by SME leaders regarding using ICT for business purposes. Culture can therefore be a significant factor in the success of ICT implementation (Lee, Trimi, & Kim, 2013). Culture and language influence ICT adoption across nations (Al-Debei & Al-Lozi, 2012). Culture influences the success of ICT projects at both the organizational and the team levels (Lee et al., 2013). The phenomenon under study was ICT adoption within SMEs in Nigeria, which I explored in an effort to understand the factors that affect ICT adoption. I focused on the significant

role culture played in the decisions of SME leaders regarding ICT adoption. The ability of individuals and organizational leaders to adopt technology will have significant implications for social change and economic growth for these SMEs.

Implications for Social Change

The research findings serve to increase knowledge on the factors that influence ICT adoption by SME leaders in Nigeria, in addition to providing recommendations for action and further study. The significance of the study resides in its potential to bridge the gap between the economies of developing and developed countries by helping leaders of SMEs in developing countries such as Nigeria create and sustain competitive advantage in the global market through the adoption of ICT. Resolving the factors that influence ICT adoption in Nigeria would result in positive social changes in Nigeria and the rest of sub-Saharan Africa. Information and communication technology leaders within SMEs, as well as government policy makers, might be able to use the study findings to plan for ICT adoption in both developed and developing countries.

A Review of the Professional and Academic Literature

In the literature review, I explore some of the factors that affect ICT adoption in SMEs in developing countries such as in Nigeria. Other researchers have considered issues such as the role of ICT leadership within a sociocultural context and their effect on ICT adoption within SMEs in Nigeria (Sakiru, D'Silva, Othman, DaudSilong, & Busayo, 2013). The literature reviewed included strong evidence of a positive correlation between ICT and economic development in both quantitative and qualitative studies (Gagliardi, 2013; Kuofie, Boateng, Yellen, & Garsombke, 2011; Mustafa, 2015).

Researchers who perform qualitative case studies can conduct in-depth exploration and illustration of cases to gain a better understanding of the research topic and questions (Yin, 2013). The focus of this study was to explore how SME leaders in Lagos, Nigeria, used ICT adoption as a business strategy to increase profitability and compete globally.

The literature review consisted of an electronic database search using keywords selected from the research question such as *ICT*, *Nigeria*, *SME*, *developing countries*, and *developed countries*. For eligibility considerations, I considered certain factors to determine what literature to include or exclude from the study. In my literature review, 61 of the references cited were peer-reviewed journal articles. I included 94 references in this paper, of which 85.1% had a publication date between 2012 and 2016, which is within 5 years of my anticipated graduation date. Of the 94 total references, 90.4% were peer-reviewed studies published in English and published worldwide. The references used in this study included 85 journals (90.4%), two books (2.1%), three dissertations (3.2%), one magazine (1.1%), and three other seminar papers (3.2%). I applied electronic filters and conducted manual searches by reading titles, abstracts, and conclusions to select appropriate literature for review.

The aim of this literature review was to extract relevant data from authentic database sources that support the purpose of the study and to enable the exploration of factors that influence SME leaders' adoption of ICT as a business strategy to improve performance, increase profitability, and achieve competitive advantage in the global market, particularly in Lagos, Nigeria. The research literature reviewed for this section came from multiple sources, including ProQuest, EBSCOhost, Word Bank Database, and

other online sources, and I verified the literature found using Ulrich's Periodical Directory for peer review. This section includes the findings from the review of existing literature related to the topic of ICT adoption, particularly within SMEs in developing countries such as Nigeria. The researchers of other reviewed studies focused on identifying research theories appropriate for ICT-related research, thereby establishing the pillars of the conceptual framework of the study. To understand the significance of the study of ICT adoption in SMEs and the factors that influence SME leaders' adoption of ICT as a business strategy to improve performance, increase profitability, and achieve competitive advantage in the global market, it was important to identify the role SMEs have played in economic development.

Role of SMEs

Small to medium-size enterprises comprise the majority of firms in most economies, contribute significantly to innovation, and are vital in the development of economies within both developed and developing countries (Ghobakhloo et al., 2012; Mazzarol, Clark, & Reboud, 2014). Small to medium-size enterprises are the fuel of economic engines as well as efficient and prolific job creators in both developed and developing economies (Tambunan, 2011). The SME sector has played an important role in economic development, poverty alleviation, and employment in developing countries (Tarutė & Gatautis, 2014). The success of SMEs in any region would help to facilitate job creation, reduce poverty, increase GDP, and promote economic growth in the region.

Importance of SMEs. In Indonesia, which is a developing country, SMEs account for over 99.9% of all businesses and employ 96.2% of the workforce (Tambunan,

2011). Small to medium-size enterprises account for 99.7% of businesses in the United States and over 95% globally, and 90% of SMEs have some form of computer system as part of their daily operations (Ghobakhloo et al., 2012). Small to medium-size enterprises in Africa represent 90% of private business and contribute more than 50% of employment and the GDP of most African countries (Tambunan, 2011). In India, SMEs account for over 95% of firms and 60-70% of employment in the country (Sawhney, Mukherjee, Rahimian, & Goulding, 2014). In Nigeria, SMEs conduct 90% of business in the country and are the primary source of employment in the region (Gbandi & Amissah, 2014). Small to medium-size enterprises are the primary players in domestic economic activities within developing countries (Tambunan, 2011; Taylor, 2013) and are an integral part of innovation and growth in a dynamic economy; thus, SMEs play a vital role in job creation (Dermol & Tavčar, 2012; Gagliardi, 2013). Small to medium-size enterprises are a major source of employment, development, and commercialization of innovation and a means to improve global market competitiveness (Ghobakhloo et al., 2012; Ghobakhloo & Tang, 2013; Taylor, 2013).

In economically developed countries such as the United States, SMEs account for 99% of all firms, employ over 50% of private sector employees, account for 98% of exports, and generate 65% of new private sector jobs; thus, SMEs are the backbone of the U.S. economy (Thomas, 2014). Leaders of countries around the world and at all stages of economic development recognize SMEs as the keystone of economic growth and industrialization (Hassan & Olaniran, 2011). In developed economies, SMEs are the

largest employer of labor; as a result, SMEs have become a countervailing force against the economic power of larger enterprises (Mukhtar, 2013).

Developing SMEs through entrepreneurship has become a popular strategy for creating jobs, generating revenue, eliminating poverty, and creating an environment for socioeconomic growth within developing countries (Hassan & Olaniran, 2011). Strong, dynamic, and efficient SME sectors play a significant role in creating competitive advantage and ensuring sustainable economic development in both developed and developing countries (Taylor, 2013). The development of SMEs in any economy would consequently facilitate socioeconomic growth and reduce poverty, particularly in developing countries.

SMEs versus large enterprises. Some researchers have contended that larger organizations are more beneficial for economic growth because they are more likely to produce innovation than are smaller firms (Stam & van Stel, 2011), whereas others have argued that SMEs play a more significant role in economic development than their larger counterparts (Hassan & Olaniran, 2011). Larger organizations have many advantages over small firms, such as deeper levels of specialization, more advanced knowledge in science, an ability to leverage economies of scale, access to cheaper and larger financial resources, and better risk management (Ghobakhloo et al., 2012; Stam & van Stel, 2011). One significant disadvantage of SMEs compared to larger organizations is lack of compatible competence in the international market, in addition to the fact that liabilities of foreignness and latecomer disadvantage in the international market are more likely to affect SMEs negatively (Zhang, Ma, & Wang, 2014). Small and medium-size enterprises

lack the competence, market control, and resources that are invariably available to large firms; as such, the success of SMEs depends on innovative initiatives, ability to formulate and implement competitive strategies, and ability to respond to changing market conditions (Mazzarol, Clark, & Reboud, 2014; Mbizi, Hove, Thondhlana, & Kakava, 2013).

The advantages that SMEs have over larger organizations are inherent in their size. Small to medium-size enterprises and SME leaders have greater flexibility, less bureaucracy, less organizational hierarchy to manage, informal organizational cultures that facilitate better communication, and greater proximity to market; SME leaders are more ready to take on new, innovative ideas (Stam & van Stel, 2011; Zhang et al., 2014). Compared to leaders of larger enterprises, leaders of SMEs are more able to adapt to market conditions because of the size and flexible nature of SMEs (Elbeltagi et al., 2013). Compared to leaders of large organizations, leaders of SMEs can react more quickly and efficiently to changing market conditions through innovative initiatives (Wang, Hermens, Huang, & Chelliah, 2015).

However, SMEs differ from large organizations because of their leadership style, internal operations, existing assets, organizational structure, and reaction to environmental conditions (Mbizi et al., 2013). Though SMEs collectively have more workers than large organizations in the same industry, in many instances, SMEs also have roles complementary to those of large enterprises by providing earlier skills training for industrial workers (Hassan & Olaniran, 2011). Small firms have had an increasingly active role in global markets; thus, the development of SMEs could help government

leaders in developing countries to address poverty, contribute to economic development by creating jobs, and encourage entrepreneurial skills among the populace, which could result in increased income (Zhang et al., 2014). An increase in SMEs has resulted in an increase in economic activities in rural areas and serves as a source of growth for these regions (Elbeltagi et al., 2013).

Small to medium-size enterprises are the starting point from which domestic enterprises develop into larger corporations (Elbeltagi et al., 2013). Larger companies serve as a training ground for prospective entrepreneurs and may provide SMEs the opportunity to serve as distribution channels for products and services offered by the larger firms (Stam & van Stel, 2011). The development of SMEs also facilitates the success of large-scale enterprises, as SMEs serve as suppliers and providers of support services for large enterprises (van Stel, de Vries, & de Kok, 2014). Large firms can benefit from SMEs through knowledge overflow, the competitive environment resulting from SME innovativeness, and the flexibility SMEs provide large firms to increase productivity (van Stel et al., 2014). Because of the underrepresentation of large firms in developing countries, SME leaders must innovate and ensure structural changes within developing countries (Stam & van Stel, 2011).

The combined effort and collaboration between SMEs and large firms has led to innovation and structural changes in advanced economies (Stam & van Stel, 2011). From the arguments made in different research studies on the benefits of both large and small enterprises (Hassan & Olaniran, 2011; Stam & van Stel, 2011), the collaboration between large and small firms can also result in increased economic activities in developing

countries. It is therefore logical to conclude that both large and small firms have a symbiotic relationship in which one benefits from the other, and as such, they are mutually essential for economic growth.

SMEs in Nigeria. The emphasis of this study was ICT adoption by SME leaders in Nigeria. The importance of SMEs to economic development in developing countries, particularly Nigeria, is high when considering the importance of the Nigerian economy in the sub-Saharan region. Estimates of the number of SMEs in Nigeria indicate that they comprise approximately 85-90% of all business; thus, SMEs have the largest percentage of workers in the country (Gbandi & Amissah, 2014; Hassan & Olaniran, 2011). The policy of the Nigerian government is to develop the economy and eradicate poverty through the development of SMEs (Hassan & Olaniran, 2011). Small to medium-size enterprises in Nigeria contribute to social and economic development by transforming traditional or indigenous industries through the stimulation of indigenous entrepreneurship and technology, job creation, and wealth redistribution (Hassan & Olaniran, 2011). Leaders of SMEs in Nigeria face a number of challenges such as inadequate access to finance, shortage of skilled labor, improper financial and management practices, inadequate entrepreneurial skills, and inadequate ICT adoption in business management (Gbandi & Amissah, 2014; Hassan & Olaniran, 2011). The importance of SMEs in both developing and developed economies makes it vital to understand and explore which factors influence the success of SMEs, with an emphasis on how ICT adoption contributes to the success of these SMEs.

Factors affecting SME growth. Although several studies exist on the role of SMEs in economic development, the factors that affect the success of these SMEs, particularly the influence of ICT on SME growth, are equally important topics that deserve further discussion (Tambunan, 2011). Small to medium-size enterprises are important in economic development, but numerous factors impede their growth, particularly in developing countries such as Nigeria. These factors include lack of adequate credit; significantly low technological enhancement; inadequate and inefficient infrastructural facilities; shortage of skills; low entrepreneurial skills; and employee turnover that affects performance, productivity, and growth (Gbandi & Amissah, 2014; Tobora, 2014). The national climate for innovation, which involves issues such as government policy, costs of doing business, and quality of communication infrastructure, is a key factor that influences SME growth (Mazzarol, Clark, Reboud, Gough, & Olson, 2014). Other factors impeding SME development include limited access to appropriate technology, limited access to the global market, government policies, socioeconomic factors, available financial and nonfinancial assistance, weak institutional capacity, weak financial strength, top management leadership skills, managerial characteristics, and organizational culture (Mbizi et al., 2013; Nguyen, Mort, & D'Souza, 2015).

ICT Adoption in Developing and Developed Countries

A review of ICT adoption trends within both developed and developing economies can help to improve the understanding of the challenges of ICT adoption, particularly those faced by SME leaders in developing countries. The adoption and use of ICT represent an enabling mechanism by which organizational leaders improve the

efficiency and effectiveness of their business processes, as well as transform existing business models (Jones et al., 2014). Leaders of organizations, including SMEs, must adopt and use ICT to survive in the new business economy (Rahayu & Day, 2015). In the following sections, I discuss the benefits of ICT adoption to organizations in both developed and developing countries. I also provide an in-depth exploration of the factors that influence the adoption of ICT in SMEs, particularly in Nigeria.

ICT adoption in SMEs. The adoption and use of ICT have helped organizations achieve growth by becoming more efficient, effective, innovative, and globally competitive (Consoli, 2012; Jones et al., 2014; Tarutė & Gatautis, 2014). The use of ICT enables SMEs to compete at the same level as their larger counterparts in the global market (Agwu & Murray, 2015). Information and communication technology adoption within both large and small businesses in developed countries has significantly increased since 2005 (Al-Debei & Al-Lozi, 2012; Asare et al., 2012; Ghobakhloo et al., 2012). However, the rate of ICT adoption within SMEs in developing countries has remained relatively low and has contributed to the low rate of economic growth in the region (Asare et al., 2012; Ghobakhloo & Tang, 2013; Jones et al., 2014; Mokaya, 2012; MacGregor & Kartiwi, 2010). Compared to large organizations that have noticeably profited from ICT adoption, the rate of ICT adoption within SMEs has remained relatively low (Ghobakhloo et al., 2012; Ghobakhloo & Tang, 2013).

One key factor that has contributed to the achievement of growth potentials within SMEs has been the use of ICT (Apulu & Latham, 2011). Leaders of SMEs need to adopt ICT to gain competitive advantage and to access the global market (Ghobakhloo & Tang,

2013). The adoption of ICT has contributed to the improvement of organizations' performance and the achievement of competitive advantage for organizations within both developed and developing countries (Al-Debei & Al-Lozi, 2012; Tarutė & Gatautis, 2014). The small size and less complicated structure of SMEs, compared to larger firms, make them more flexible in response to changes, which is an advantage and a precursor for successful ICT implementation (Consoli, 2012; Ghobakhloo et al., 2012). Because SMEs have an advantage regarding ICT adoption due to their size and flexibility, and because years in business or ICT experience have no significant effect on ICT adoption, other factors must exist that contribute to the low rate of ICT adoption in SMEs. Later in this study, I discuss the factors that affect ICT adoption. First, exploring the benefits of ICT adoption is important, particularly for SMEs in developing countries.

Advantages of ICT adoption. The adoption and use of ICT improves access to information, fosters effective communication, and improves process and market efficiency for organizations (Mustafa, 2015). Large and small organizations in developed and developing economies can rapidly become formidable competitors while using ICT to create competitive advantage and become market leaders (Elbeltagi et al., 2013). Organizations can use ICT as the means to facilitate strategic planning, future research, and business forecasting for both process efficiency and effectiveness (Agwu & Murray, 2015; Keller & Von der Gracht, 2014). Adopting ICT influences the flexibility of an organization, where companies whose leaders adopt ICT are more likely to perform better in the market and exhibit product or service differentiation (Tarutė & Gatautis, 2014).

Three of the basic characteristics of ICT are its pervasive nature as it spreads across economic sectors, its ability to improve over time and hence lower cost for users, and its ability to spawn innovation by facilitating research and development of new products, services, or processes (Mustafa, 2015). The adoption of ICT presents opportunities for organizational leaders to improve operational efficiency, reduce transaction cost, facilitate coordination between suppliers, expand market reach, and gain a competitive advantage in the global market (Mustafa, 2015). The adoption of ICT has had a positive effect on firms' productivity, directly and indirectly resulting in growth, profitability, employee and customer satisfaction, increased market value, and positive social and environmental impact (Tarutė & Gatautis, 2014). The next few sections include an exploration into the benefits of ICT from different perspectives, particularly within SMEs in developing countries.

Advantages of ICT to SMEs. Leaders of SMEs have adopted ICT to enhance product and service innovations and create competitive advantage (Gagliardi, 2013; Wang et al., 2015). Leaders of SMEs need to experience significant benefits from ICT use and spending to gain the confidence of senior management and employees (Tovar, 2012). Information and communication technology is a strategic vehicle through which SME leaders are able to achieve and sustain competitive advantage (Ghobakhloo et al., 2012; Tambunan, 2011). Information and communication technology increases the efficiency of organizations and enables effective decision making to explore business opportunities and maximize benefits (Elbeltagi et al., 2013). The adoption and use of ICT represents a fundamental avenue for organizations to compete and grow when

properly exploited (Higon, 2012). Adopting new technologies rapidly in SMEs can help to create innovative products and compete globally (Higon, 2012).

Aligning organizational and productive processes with ICT tools fosters good business performance (Consoli, 2012). Organizations that have more ICT applications as part of their business operations have higher levels of engagement in process and product innovation (Higon, 2012). The primary focus of ICT adoption and use is to help organizational leaders achieve cost reduction, enhance efficiency, and generate competitive advantage through new product innovation (Higon, 2012). Information and communication technology diffusion can affect economic growth, promote technology diffusion and innovation, improve the quality of decision making in organizations, increase demand, and reduce cost of production (Elbeltagi et al., 2013; Gagliardi, 2013; Mustafa, 2015). Using ICT has significantly improved the performance of firms, where enterprise leaders who fully adopt ICT are more likely to be market leaders or gain market share and employ management practices that lead to higher margins than those companies that use technology in a limited capacity (Higon, 2012).

***Advantages of ICT in developing countries*.** Changes in the workforce composition in favor of a highly skilled or educated workforce are a benefit of ICT investment in developed countries (Kuofie et al., 2011). Evidence exists of a strong positive correlation between ICT and economic development, which emerged in quantitative and qualitative studies regarding the effect of ICT on economic performance in developed and developing countries (Cardona, Kretschmer, & Strobel, 2013). Such positive correlation was also evident between organizations' adoption of ICT and

organizational growth, where there is evidence of changes in the workforce composition in favor of highly skilled or educated workers because of ICT adoption (Cardona et al., 2013; Taylor, 2013). This evidence of positive correlation gained support in a study by Kuofie et al. (2011) that showed a positive correlation between IT adoption and economic development in developed countries. Evidence in several studies (Coelho, Segatto, & Frega, 2015; Gagliardi, 2013; Mustafa, 2015; Tovar, 2012) thus showed ICT adoption was beneficial to organizational development and to promoting economic growth, particularly in developing countries.

One investigation into the effect of ICT on employees' jobs within service organizations in India and the influence of the service sector on the Indian economy included an emphasis on the role ICT played in the Indian economy (Venkatesh, Bala, & Sykes, 2010). Although ICT adoption improved job characteristics, employees reported that ICT adoption resulted in significantly lower job satisfaction and performance (Venkatesh et al., 2010). This view by Venkatesh et al. (2010) contradicted many studies (Coelho et al., 2015; Gagliardi, 2013; Tovar, 2012) on the benefits of ICT where the researchers found ICT improved operational efficiency and job performance and created economic growth.

Ghana is a developing country that has experienced growth in ICT adoption, particularly in using mobile ICT technology, which resulted in economic growth in the region (Kuofie et al., 2011). Information and communication technology contributed significantly to developing the Ghanaian economy, with over 81% of participants in Kuofie et al.'s (2011) study agreeing that all sectors of the economy have benefited from

mobile phone and ICT diffusion. The benefits of ICT adoption are attainable only after successfully implementing ICT projects (Higon, 2012).

Information and communication technology adoption and use has increasingly become a dependent factor in the successful operation of organizations in most industries; thus, rapid development in ICT has changed the conventional way to conduct business in many organizations (Apulu & Latham, 2011). There is a need for leaders of organizations, including SMEs, to develop some form of competitive advantage using ICT (Ghobakhloo et al., 2012; Tambunan, 2011). Small and medium-size enterprises play a vital role in developing the Nigerian economy and contribute significantly to industrial development in Nigeria; thus, the adoption and use of ICT by SME leaders would foster the growth of these SMEs and the country's economy (Apulu & Latham, 2011). However, the use of ICT has yet to reach its maximum capacity in many developing countries, particularly in rural areas such as in Nigeria (Apulu & Latham, 2011; Osotimehin, Jegede, Akinlabi, & Olajide, 2012). Adopting ICT may help bring about economic development, particularly in rural areas with many SMEs. To appreciate the benefit of ICT, it is important to understand the disadvantage of ICT when not properly implemented, as well as to explore the factors that affect ICT adoption, particularly within SMEs.

Disadvantages of ICT adoption. Information and communication technology adoption leads to reduced operating and production costs and may result in unsustainable production (Balaceanu & Apostol, 2012). Overproduction occurs when organization output surpasses consumer demand, which would result in wasting both raw materials

and other resources (Balaceanu & Apostol, 2012). Disposing of any excess production output results in financial losses for the organization and could have a negative effect on ecosystems (Balaceanu & Apostol, 2012). Therefore, the unintended consequence of a poorly planned and implemented ICT strategy could result in financial losses for an organization, as well as a negative effect on the environment.

Factors affecting ICT adoption. Next, I discuss the regional factors affecting ICT adoption. I review the factors influencing ICT adoption in SMEs, particularly in developing countries, followed by a review of the factors affecting ICT adoption in SMEs compared to their larger counterparts. I then explore the factors affecting ICT adoption from different perspectives such as the factors peculiar to the region (i.e., developing or developed countries) and the factors peculiar to SMEs, particularly within developing countries.

Factors affecting ICT adoption in SMEs compared to large firms. Leaders of SMEs are not fully taking advantage of the potential benefit of ICT compared to large companies, partly because of the limited resources, technology, and capabilities of these SMEs (Consoli, 2012; Rahayu & Day, 2015; Tarutė & Gatautis, 2014). These limitations have been significant challenges in many organizations, particularly SMEs, as they are more prone to suffering the effect of these limiting factors because of size and resource limitations (Consoli, 2012). The shortage of ICT skills and lack of adequate finances experienced in SMEs compared to large organizations have more significant consequences for SMEs than for large firms, thus limiting the ability of SME leaders to create or sustain competitive advantage (Tambunan, 2011).

The barriers to ICT adoption for SMEs include internal and external barriers. The internal barriers include the characteristics of the owner/manager, organizational characteristics, cost of adoption and implementation, and return on investment (Tarutė & Gatautis, 2014). External barriers include infrastructure, social, cultural, political, legal, and regulatory barriers (Agwu & Murray, 2015; Tarutė & Gatautis, 2014). Inhibiting factors of ICT adoption among SMEs when compared to large firms included organizational (such as lack of skilled personnel and coherent ICT strategy), financial (such as high investment cost), infrastructural (such as access to power, Internet bandwidth, and reliable Internet connection), and technological (such as the learning curve of evolving technology) factors (Consoli, 2012).

Factors affecting ICT adoption in SMEs in developing countries. The factors that affect ICT implementation in developing and developed countries are largely similar; however, these factors have significant differences in their order of importance (MacGregor & Kartiwi, 2010). The low rate of ICT implementation in developing countries is the result of a number of impeding factors (Asare et al., 2012; Bressler, Bressler, & Bressler, 2011; Mokaya, 2012). Factors that affect the low adoption rate of ICT include low ICT skill level, the cost of implementing ICT, low capital base of SMEs, and lack of infrastructure needed to support ICT adoption (Asare et al., 2012; Awiagah, Kang, & Lim, 2015; Mokaya, 2012). One major factor impeding ICT adoption is the prohibitive cost of ICT implementation, particularly the cost associated with rapidly changing technology (Bressler et al., 2011). Other ICT adoption barriers and constraints identified in developing countries included lack of adequate infrastructure, poor

education, financial limitations, political barriers, and sociocultural challenges (Taylor, 2013).

Some developing countries such as Ghana and Botswana have received recognition by many Western governments and financial institutions for their leadership in good governance and economic development (Asare et al., 2012). However, the leaders of SMEs in these countries still face many ICT adoption challenges, such as insecurity, poor infrastructure, inadequate technical knowledge, regular power outages, and lack of an appropriate forum to educate SME leaders on the proper implementation and use of ICT (Asare et al., 2012). The effect of ICT adoption and the growth of SMEs in developing countries indicated the role of government policies toward the successful implementation of ICT is important to the development of SMEs as well as regional economic growth (Asare et al., 2012; Ghobakhloo et al., 2012). To eliminate any gap between the ICT adoption needs of SMEs and the support government is providing, government leaders must understand precisely what support SMEs need to implement ICT successfully (Ghobakhloo et al., 2012).

Many SME leaders have been slow to exploit the benefits of e-business because they lack important ICT competencies (Ashurst, Cragg, & Herring, 2012). A common theme thus identified in many studies on the factors impeding ICT adoption, particularly in developing countries, is the lack of available financing, cost of ICT implementation, and lack of government-provided infrastructure to support ICT adoption prerequisites. Therefore, the factors affecting ICT adoption have a more significant effect on SMEs, particularly in developing countries where knowledge on ICT benefits, resources, and

infrastructure are not readily available to support seamless ICT adoption (Ashurst et al., 2012; Awiagah et al., 2015; Tovar, 2012).

Leaders of SMEs in developing countries have had to manage several challenges when adopting ICT. The lack of knowledge on the use and benefits of ICT is a significant factor that impedes ICT adoption for many SMEs, particularly in developing countries (Tovar, 2012). One peculiar inhibiting factor limiting ICT adoption in SMEs in developing countries is the concern about the lack of customers and vendors who have adopted ICT as a method of commerce (MacGregor & Kartiwi, 2010). Many SME leaders in developing countries were not certain that e-commerce would suit their products or services or were not certain it would suit how they ran their day-to-day operations, including how their customers and vendors conducted business (MacGregor & Kartiwi, 2010).

One of the attributes of ICT that resulted in the successful implementation of e-commerce by SME leaders in urban Kenya, a developing country in Africa, is the ability of SME leaders to see visible benefits resulting from ICT use (Wanyoike, Mukulu, & Waititu, 2012). Such visible benefits include the ability for ICT to simplify work routines, promote efficient communication and coordination between various value chain partners, increase productivity, and improve customer service that resulted in increased customer satisfaction (Wanyoike et al., 2012). Many SME leaders saw ICT and e-commerce as avenues to expand their global market reach (Wanyoike et al., 2012). However, many did not perceive ICT as a means of developing new products or services (Wanyoike et al., 2012), which could explain why many SME leaders use basic ICT

features such as word processing, printing, phone calls, and faxing; using ICT for advanced functions such as analysis, planning, and decision making was a limitation (Apulu & Ige, 2011). Until SME leaders, particularly in developing countries, address this lack of awareness of ICT benefits, the ICT adoption rate will remain relatively low for SMEs in the region (Jones et al., 2014).

Studies exist on the factors that affect ICT adoption in SMEs in developing countries such as in Nigeria (Apulu & Latham, 2011; Awiagah et al., 2015; Ghobakhloo et al., 2012). However, the researchers of these studies largely ignored other factors that contribute to the adoption rate of ICT in SMEs in developing countries, such as the role of ICT leadership within these SMEs and the sociocultural belief systems of the leaders of these SMEs. I focused on exploring the effect of factors largely ignored in recent studies and explored the effect of the culture or belief systems of SME leaders on ICT adoption within SMEs in Nigeria.

ICT Leadership

The lived experience of ICT decision makers may explain the beliefs and views of these decision makers toward IT adoption (Tovar, 2012). The influence of this lived experience and the correlation between leadership style and ICT adoption may increase the understanding of how SME leaders make decisions to adopt ICT. In this section, I explored leadership types, particularly how leadership types affect ICT adoption within SMEs.

Leadership types. Leaders of organizations, particularly SMEs, should be aware of the leadership style adopted by their knowledge managers (Analoui, Doloriert, &

Sambrook, 2013). The dimensions of leadership include transformational, transactional, and passive-avoidant (Analoui et al., 2013). Transformational leadership is a leadership style that transforms employees by altering their ideals, values, morale, and interest to motivate them to perform better than initially expected (Stentz, Plano Clark, & Matkin, 2012; Vermeulen, Van Acker, Kreijns, & van Buuren, 2014). Transactional leadership is a leadership style characterized by a mode of management based on rewards and punishments of subordinates in accordance with the objectives set by the organizational hierarchy (Leduc, Guilbert, & Vallery, 2015). Passive-avoidant leadership is a leadership style in which managers avoid decision making, pay little attention to their subordinates, or only pay attention when their subordinates have done something wrong (Frooman, Mendelson, & Murphy, 2012).

Leadership types in SMEs. Employee motivation, performance, and knowledge management activities increase when knowledge managers or decision makers adopt transformational and transactional leadership styles (Analoui et al., 2013; Vermeulen et al., 2014). A study on the relationship between leadership style and job satisfaction among employees of SMEs in Nigeria revealed a significant relationship between leadership style and employee job satisfaction that affected productivity (Sakiru et al., 2013). Transformational leadership style is the most commonly used leadership style within SMEs in Nigeria, and transformational leadership style is an important style for leaders of SMEs to use to achieve the mission, objectives, and developmental goals of the organization (Sakiru et al., 2013).

Influence of leadership style on ICT adoption. Adequate conditions within an organization, including management support and appropriate leadership style, favor successful ICT implementations (Consoli, 2012). The personal quality of a leader is crucial in the approach to decision making within an organization; therefore, understanding leadership style is important in ICT adoption, particularly for SMEs. An association may exist between SME leaders' leadership style and the appointment of ICT coordinators, the development of ICT initiatives, and other ICT-related initiatives that foster successful ICT implementation (Sakiru et al., 2013). Four ICT competencies are important to a firm's development: IT leadership, business system thinking, architectural planning, and making the technology work (Ashurst et al., 2012).

Management styles play a significant role in how organizational leaders or knowledge managers make strategic decisions, including the use of ICT to create competitive advantage and sustainable growth (Consoli, 2012; Tovar, 2012). Leaders who adopt transformational leadership style, promote a culture that empowers followers, and encourage collaboration are ideal for technological innovation (Seyal, 2015). It is beneficial for organizations, particularly SMEs, when leaders or knowledge managers adopt transformational and transactional leadership styles (Analoui et al., 2013). Therefore, I inferred from the studies by Sakiru et al. (2013), Analoui et al. (2013), and Vermeulen et al. (2014) that adopting transformational and transactional leadership styles within SMEs in Nigeria would facilitate ICT adoption within SMEs in the region. The implication of these studies (Ashurst et al., 2012; Consoli, 2012; Sakiru et al., 2013) helped identify effective leadership styles that may result in successful ICT

implementation and the resulting socioeconomic effect on developing countries, as explored next.

Effect of Culture on ICT Adoption

Culture is the values, beliefs, norms, and general behavioral patterns of members of a group or category of people that distinguishes them from members of other groups (Azam & Quaddus, 2013). Any national culture has variations in individual needs as well as in individual, team, and organizational behavior (Erumban & De Jong, 2006). Nevertheless, all individuals live and work within a cultural environment in which certain values, norms, attitudes, and practices are more or less dominant and serve as shared sources of socialization and social control (Erumban & De Jong, 2006).

Noneconomic factors that affect ICT adoption decisions include the cultural and psychological aspects of individuals, organizations, societies, and countries (Erumban & De Jong, 2006). National culture is a factor that affects ICT adoption, regardless of the economic condition of the country (Erumban & De Jong, 2006). Culture and language influence ICT adoption across nations (Al-Debei, 2012). Culture can influence individuals' decisions to adopt and use technology (Osubor & Chiemeke, 2015). Adoption decisions vary between different societies and is based on the attitudes of the people in these communities; as such these social characteristics may influence the decisions to adopt and use ICT (Erumban & De Jong, 2006). Attitude influences individuals' decision to adopt, and their aversion to, technology (Elbeltagi et al., 2013).

The culture or belief system of a group or society plays a role in the decisions made by individuals of that group (Erumban & De Jong, 2006). These decisions

influence management or business practice and include the decisions made by SME leaders regarding the adoption and use of ICT for business purposes (Osubor & Chiemeke, 2015). A study on the influence of culture on ICT adoption and use in SMEs in Bangladesh revealed a significant association of in-group collectivism, ethical culture, local value, perceived usefulness, and perceived ease of use (Azam & Quaddus, 2013). Culture influences the success of ICT projects at both the organizational and the team levels (Lee et al., 2013). Culture can therefore be a significant factor in the success of ICT implementation (Lee et al., 2013; Osubor & Chiemeke, 2015).

A study on the influence of culture on mobile phone adoption patterns in the United States and South Korea using two of Hofstede's cultural dimensions revealed the United States had a Type I cultural dimension and South Korea had a Type II cultural dimension (Lee et al., 2013). Hofstede's cultural dimensions model classifies national cultures into four types, although Hofstede's dimensions suggested two extreme cultural types for study: Type I (individualistic, weak uncertainty avoidance, and low long-term orientation) and Type II (collectivistic, strong uncertainty avoidance, and high long-term orientation; Lee et al., 2013). Culture innovation factor has a higher effect on technology adoption in Type I than it does in Type II, whereas culture imitation factor has a higher level of influence for Type II than it does for Type I (Lee et al., 2013). Research by Al-Debei and Al-Lozi (2012), Azam and Quaddus (2013), Erumban and De Jong (2006), and Lee et al. (2013) thus indicated the effect of accessibility and culture on the ICT adoption decision for both personal and business use. Understanding how leadership attitude and

culture affect ICT adoption decisions within organizations, particularly within SMEs, is therefore important.

Socioeconomic Influence of ICT Adoption

Information and communication technology and its components have an interlinked relationship with socioeconomic development at both micro and macro levels. Information and communication technology has accelerated economic growth and has contributed to improving the lives of the inhabitants of the world by bringing about new ways of creating livelihoods for people (Doong & Ho, 2012). Empirical evaluation has shown a positive correlation between ICT development and GDP per capita growth (Tambunan, 2011). Perhaps one of the indicators of socioeconomic development is the positive correlation between ICT investment and GDP per capita growth.

The implementation and application of ICT has been a significant driving force behind many socioeconomic changes (Ghobakhloo et al., 2012). The social benefits of ICT, particularly for developing countries, include poverty alleviation, job creation, revenue generation, and creating an environment for socioeconomic growth (Hassan & Olaniran, 2011; Tarutė & Gatautis, 2014; Zhang et al., 2014). An increase in SMEs has resulted in an increase in economic activities in rural areas and serves as a source of growth for these regions (Elbeltagi et al., 2013). Small to medium-size enterprises are vital in socioeconomic development, particularly for developing countries (Tambunan, 2011), and leaders of SMEs who adopt ICT provide growth opportunities for the SMEs (Consoli, 2012), which in turn provides socioeconomic benefits within the developing countries.

Information and communication technology helps support human activities that enhance the efficiency and effectiveness of SMEs, particularly in Nigeria, and has revolutionized the way people and organizations operate, resulting in improved efficiency across both personal and business processes (Apulu & Latham, 2011). A correlation exists between ICT adoption and socioeconomic development (Kuofie et al., 2011; Venkatesh et al., 2010). Therefore, when properly implemented, the shift toward ICT investment would lead to increased socioeconomic development in developing countries.

Culture influences ICT adoption and use, but ICT adoption and use also significantly affects cultural values (Hansen, Postmes, van der Vinne, & van Thiel, 2012). Cultures continuously evolve with a dynamic interaction between people and their environment (Hansen, Postmes, van der Vinne, & van Thiel, 2012). The adoption and use of ICT has played an important role in the dynamic interaction between people and their environment; as such, ICT adoption has had a significant influence on cultural values (Hansen et al., 2012).

The adoption and use of ICT helps organizations, particularly government agencies, increase transparency and as such reduces corruption (Charoensukmongkol & Moqbel, 2014). Corruption is the consequence of a problem between public and government agents, where difficulty concerning inadequate supervision results in the abuse of public resources by these government agents (Li, 2014). Information and communication technology provides the means to supervise the activities of government agents, thereby helping to reduce corruption (Li, 2014). With the use of ICT, most government transactions can take place using the Internet, thereby eliminating the face-

to-face contact between citizens and government agencies and reducing the chances of bribery and corruption (Charoensukmongkol & Moqbel, 2014). The findings from several studies (Apulu & Latham, 2011; Charoensukmongkol & Moqbel, 2014; Hansen et al., 2012; Kuofie et al., 2011; Venkatesh et al., 2010) had important implications in effectively using ICT to address poverty, job creation, economic inequalities, corruption, and other socioeconomic issues. The last topic explored was conceptual frameworks appropriate for ICT adoption-related studies.

ICT Adoption Theories

In this study, I employed a qualitative multiple case study approach to explore how SME leaders in Lagos, Nigeria, use ICT as a business strategy to compete in the global marketplace. I reviewed multiple technology adoption theories and models to explore individuals' ICT adoption behavior. One adoption theory reviewed included the theory of reasoned action (TRA), which explains an individual's behavior based on his or her behavioral intent; thus is influenced by the individual's attitude towards the behavior and subject norm (Rahayu & Day, 2015; Wunnava, 2015). The TRA is limited in its inability to compromise in situations where the individual does not have a choice or when actual behavior and intent are highly correlated (Rahayu & Day, 2015).

Another theory I examined for my study was the theory of planned behavior (TPB) which was an extension of TRA to address its limitations and emphasize the measures of intention to use technology (Azam & Quaddus, 2013; Toft et al., 2014; Yeh, 2015). The TPB added new construct to TRA called the perceived behavioral control (PBC); thus TPB identified three factors that influences behavioral intent, which are the

attitude toward behavior, subject norm, and PBC (Rahayu & Day, 2015). The TRA and TPB still had significant limitations, particularly the assumption that there was correlation between intent and behavior, as such either theory was weak in situations where there was high correlation between intent and behavior (Rahayu & Day, 2015).

The innovation diffusion theory (IDT) was developed by Rogers, not to focus on individual perspective, but on a broader psychological and sociological theory; with a greater focus on process-oriented perspective to explain how innovation can be received and dispersed between people (Rahayu & Day, 2015). Therefore, an individuals' view of the relative advantage, compatibility, complexity, trial-ability, and observability of the innovation influences his or her technology adoption behavior (Wanyoike et al., 2012). However, I applied the TAM to explain the ICT adoption attitude of SME leaders in my study, as this model addresses many of factors and limitations identified in the TRA, TPB, and IDT.

Davis developed the TAM in 1986 with a goal of explaining how users perceive and use technology (Ghobakhloo & Tang, 2013; Toft et al., 2014; Yeh, 2015). The TAM specifies the relationship between perceived usefulness, perceived ease of use, attitude toward computer use, and intention to use technology (Wunnava, 2015; Yeh, 2015). The model is an established theoretical model used to explain and predict user behavior toward ICT (Ghobakhloo & Tang, 2013). The TRA was the basis for TAM and involved an attempt to identify the fundamental variables of technology acceptance (Toft et al., 2014; Yeh, 2015). The TAM is an extension of TRA proposed by Davis (1986) to explain why users accept or reject ICT. The TAM will serve as the basis to explain how

external variables influence belief, attitude, and intention to use technology (Awiagah et al., 2015; Wunnava, 2015) and will serve as a framework for analyzing the attitude of SME leaders toward adopting ICT.

The TAM includes two cognitive beliefs: perceived usefulness and perceived ease of use of technology (Awiagah et al., 2015; Davis, 1986). The TAM specifies that the behavioral intentions, attitude, perceived usefulness of the technology, and its perceived ease of use directly or indirectly influence the actual use of technology (Ghobakhloo et al., 2012). Based on TAM, internal and external factors influence a user's intention to use ICT by influencing the perceived usefulness and perceived ease of use of the system (Awiagah et al., 2015). The TAM is the most robust theory used to explain users' acceptance of technology (Olise et al., 2014; Toft et al., 2014; Wunnava, 2015). I used TAM to explore the effect of factors such as culture on the perceived usefulness and perceived ease of use of ICT, particularly among leaders in Nigerian SMEs.

Transition and Summary

The purpose of this study was to advance knowledge on the factors that affect ICT adoption in developing countries, particularly within SMEs in Nigeria. Many researchers have shown that the adoption of ICT, particularly in SMEs, has led to increased growth opportunities for both large and small enterprises in developing and developed countries (Al-Debei & Al-Lozi, 2012; Ghobakhloo et al., 2012). I focused this study on the factors that affect ICT adoption by SME leaders as a business strategy to increase profitability and compete globally, particularly within SMEs in Lagos, Nigeria. I addressed the gap in existing literature regarding other factors such as the influence of culture on ICT

adoption, cost of ICT implementation, available ICT skills, available infrastructure, and ICT knowledge as the primary impeding factors of ICT adoption in Nigerian SMEs. This qualitative research study with a multiple case study approach was appropriate for collecting data from 20 SME leaders of four selected SMEs in Nigeria using semistructured interviews. Decision makers within SMEs and government policy makers may use the findings of this study to plan for ICT adoption.

In the following section of this study, I restate the purpose of my study, describe my role as the researcher, identify the study participants, expand on my chosen research method and design, describe the population and sampling methods, and elaborate on the data collection and analysis techniques used. Section 2 also includes a discussion of my ethical research process, as well as a discussion on how I ensured the reliability and validity of the study. Section 3 includes my research findings, their application to professional practice, and implications to social change. In Section 3, I conclude with recommendations for action and further research and a reflection on my experience within the DBA doctoral study process.

Section 2: The Project

In this study, I explored the factors that influence SME leaders' adoption of ICT as a business strategy to increase profitability and compete in the global market. The participants for this multiple case study included five SME leaders from each of four SMEs who had successfully implemented ICT in Lagos, Nigeria. The central focus of this study was the effect of factors largely ignored in other studies that influence SME leaders' adoption of ICT, including exploring the influence of culture or a belief system on ICT adoption within SMEs in Lagos, Nigeria, particularly how this affects the use of ICT as a business strategy to achieve global competitive market advantage. In this section, I emphasize the purpose of the study and discuss my role as the researcher, the research participants, the research method and design, population and sampling, ethical research, data collection, and the data analysis technique for this study. This section concludes with a discussion of the reliability and validity of the study.

Purpose Statement

The purpose of this study was to explore the factors that influence SME leaders' adoption of ICT as a business strategy to increase profitability and compete in the global market. I used a multiple case study research design, with four SMEs whose leaders had successfully implemented ICT serving as the sources of participants. I interviewed 20 participants: five from each SME. The data collection method included semistructured interviews. Purposeful interview questions served to ensure that I collected only data relevant to this study. The focus of the interview questions was to explore the factors that influence SME leaders' adoption of ICT as a business strategy to increase profitability

and compete globally. Many researchers have shown that ICT adoption benefits both large and small organizations; thus, the knowledge acquired in my study may help those seeking to address other factors that affect ICT adoption within SMEs in Lagos, Nigeria, including the influence of culture.

Role of the Researcher

Researchers should not take their role for granted, and their role should be clear (Halpern & Leite, 2015). Researchers should reflect on what type of data they need to collect, explore, analyze, and present the research data in an organized fashion (Oates & McDonald, 2014). A researcher's responsibility is to strive for neutrality, ensure that the research data are reliable, and analyze and interpret the data in an ethical manner (Halpern & Leite, 2015; Nelson, London, & Strobel, 2015). A researcher's role related to ethics is to comply with the basic ethical principles as identified in the *Belmont Report*, which include respect for persons, beneficence, and justice (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979).

Preparing for interviews involves documenting all protocols observed during the interview and ensuring that participants have control over the sharing of research data and results (Nelson et al., 2015; Oates & McDonald, 2014). The protocols include documenting interview questions, identifying the appropriate setting with little distraction, explaining the purpose and format of the interview, addressing confidentiality terms, indicating the duration of the interview, and providing follow-up contact details to the participants (Halpern & Leite, 2015; Nelson et al., 2015; Oates & McDonald, 2014). As part of the research design, I relied on primary and secondary data collected from

direct interviews, observations, and review of documents collected with related secondary research data.

Experience in the research topic enables a researcher to have a deeper understanding of the research study compared to a researcher with no experience (Halpern & Leite, 2015). Familiarity with the field of study increases the chances that participants will provide reliable answers to the research questions (Halpern & Leite, 2015). I am a senior IT consultant with over 19 years of experience working as a software developer and IT project manager in the insurance, banking, health care, and retail industries for both large and small businesses. Therefore, the research topic is familiar to me. Given my professional exposure to multiple industries, including large and small businesses in both developed and developing economies, I was able to bring a range of perspectives and knowledge to this study. My IT management role includes making ICT adoption decisions, IT infrastructure procurement, production support, and vendor management.

Participants

The participants for this multiple case study were 20 SME leaders from four SMEs, with five participants selected from each SME who had successfully implemented ICT in Lagos, Nigeria. Some of the participants were also owners of the small businesses and responsible for decisions regarding ICT adoption within their organization. In qualitative research, sample size is not as significant as it is in quantitative research; however, a sample size between five and 25 is ideal for qualitative research data collection (Draper & Swift, 2012). It is necessary to interview and collect data from

sufficient participants to mitigate the likelihood of bias based on a few individual perceptions (Yin, 2013). It is important to keep participants' information secure and confidential (Singh, Manna, & Bhasin, 2013). To guarantee confidentiality and protect the participants in this study, the names of individuals and organizations in the study remained confidential.

The use of a purposive sampling technique ensures the selection of only participants who will provide data related to a study (Olise et al., 2014). Four SMEs whose leaders had successfully implemented ICT served as case studies for this research. I interviewed 20 participants: five participants from each SME. A list of SMEs obtained from a representative at SMEDAN contained the information needed to select the SMEs for this study.

Research Method

The qualitative research method was most appropriate for this study because this method involves collecting and analyzing qualitative narrative data to explore a specific research question (Stentz et al., 2012). The social constructive worldview involves the assumption that individuals seek to understand the world they live in by developing subjective meanings of what they observe or experience (Yin, 2013). Using a qualitative research method requires an assessment of the researcher's role in the study; thus, the result of a study depends on the level of transparency with which the researcher describes the data collection and analysis process (Halpern & Leite, 2015). The goal of qualitative research is to rely primarily on participants' interpretation of the topic under review (Yin,

2013). Therefore, the qualitative research method involves making inductive arguments to answer research questions.

The quantitative and qualitative research methods differ in their strategy of inquiry, method of data collection, data analysis, and data interpretations (Yin, 2013). Researchers use the qualitative research method to develop a holistic understanding of a complex process or a real-life experience, where precise measurements or a predetermined hypothesis is not likely (Kipkulei, 2013). In contrast to the quantitative research method, the qualitative research method involves collecting and analyzing qualitative narrative data to explore and understand specific research questions (Stentz et al., 2012). A quantitative research method involves collecting and analyzing quantitative numeric data using statistics and experimental methods to make a deductive argument to address a specific research question (Stentz et al., 2012); as such, a quantitative research method was not appropriate for my study. The goal of this study was to gain an in-depth understanding of the research topic by relying on the participants' interpretation of the complex study topic; as such, a deductive statistical analysis of data was not necessary to study the factors that affect ICT adoption within SMEs in Nigeria.

The third research method commonly used in academic research is the mixed method design, which is a combination of the quantitative and qualitative research methods for collecting and analyzing data in a single study or a series of studies to explore and explain specific research questions (Stentz et al., 2012). Researchers use the mixed method design to apply both a deductive and an inductive approach to research. A combination of deductive and inductive approaches provides researchers the tools needed

to test research hypotheses using statistical analysis and the means to explore gaps in the deductive research by relying on observation, interviews, and review of research artifacts. I did not apply mixed method research in my study because the participants' interpretation of the study topic was sufficient to develop inductive conclusions for the research questions. I focused on the views and interpretations of the participants to arrive at deductive conclusions without relying on a quantitative analysis of data.

Research Design

Qualitative research includes the following research designs: constructivist, grounded theory, ethnography, narrative, phenomenological, and case study (Kipkulei, 2013). Researchers conduct case study research to explore events, programs, activities, processes, or individuals by collecting data using a variety of methods, including review of existing documents and observations of participants onsite over a period of time (Yin, 2013). I chose the qualitative research method and a multiple case study design to explore the activities of multiple SMEs, and I collected data from multiple participants using data collection methods that included in-person interviews and limited participant observation during the interview process. In contrast to other approaches, a qualitative case study generally includes a focus on a distinct occurrence of events or a single experience so that the researcher gains a full understanding of the phenomenon under investigation (Houghton et al., 2013). The case study research design is appropriate for providing context to the how and why of a research question because multiple methods of collecting data, such as document review, observations of participants, interviews, or examination of artifacts, are available to the researcher (Yin, 2013). In my research, the

data collection method and analysis included in-depth interviews of 20 SME leaders within four selected SMEs in Lagos, Nigeria, observations of these participants onsite, and examination of existing documents and artifacts relating to ICT implementation to address the how and why of the research questions.

I conducted each interview with one participant at a time in a private setting at his or her respective work site and provided each participant with copies of the transcribed and interpreted interview data for member checking. The interviews and member checking continued with multiple participants until no new information was available to ensure data saturation. Data saturation is necessary to ensure that the researcher has gathered adequate and accurate information that reflects the views of the study participants (Coenen, Stamm, Stucki, & Cieza, 2012; Kolb, 2012).

The case study research design serves as a means to conduct an in-depth exploration and illustration of cases that may allow researchers and readers to gain a better understanding of the research topic and questions (Yin, 2013). The case study research design was appropriate because it served as a means to understand the views of participants in relation to their cultural beliefs and the ways in which these cultural beliefs or social values affect the decision to adopt ICT. I chose the multiple case study design over other qualitative designs such as phenomenological, narrative, or ethnographic approaches because this research study did not involve reporting on stories, as in the case of ethnography or narrative designs. The focus of this study was not researching a phenomenon within a group of people; as such, the phenomenological approach was not suitable. The qualitative grounded theory approach involves

developing theories based on data collected from observations (Yin, 2013). As the development of new theory was not part of this study, the grounded theory design was not suitable for my research.

The case study research approach involves exploring one or more cases at a time (Yin, 2013). The case is a unit of activity bound by time (Yin, 2013). In this multiple case study design, I explored four SMEs and treated each as a unit case; leaders in all of the SMEs had successfully implemented ICT as a business strategy to improve performance and compete globally. Synthesizing the results of each case provided inductive answers to my research questions, thus making a case study the most appropriate research design for my study.

Population and Sampling

The purpose of this research study was to explore the factors that influenced SME leaders' adoption of ICT as a business strategy to improve performance, increase profitability, and achieve competitive advantage in the global market. The goal was to identify other factors that influenced ICT adoption decisions to help address the low rate of ICT adoption, particularly within Nigerian SMEs. This study involved the collection, review, and analysis of data collected from a sample of SMEs in Nigeria. Leaders of SMEs, particularly ICT decision makers within the SMEs, comprised the sample.

Though the sample size in a qualitative study is not as significant as in a quantitative study, it is necessary to interview and collect data from a sufficient number of participants to mitigate the likelihood of bias based on a few individual perceptions (Yin, 2013). A sample size between five and 25 is ideal for qualitative research data

collection (Draper & Swift, 2012). Twenty SME leaders within four SMEs selected from a SMEDAN database of SMEs provided sufficient data. Participant selection using a purposive nonrandom sampling technique involves choosing participants based on an understanding of the population and the purpose of the study (Olise et al., 2014; Robinson, 2014; Yin, 2013). This study involved a purposive selection of SME leaders involved in ICT adoption decisions. Other sampling techniques such as the random sampling method were not appropriate for this study, as a deliberate selection of participants was necessary to obtain relevant information from participants with ICT knowledge.

Data saturation is necessary to ensure that a researcher gathers sufficient and accurate information that represents the view of the participants (Coenen et al., 2012; Kolb, 2012). I conducted interviews with multiple participants and provided them with copies of the transcribed and interpreted interview data for member checking. Interviews and member checking continued until no new information emerged to ensure data saturation. I analyzed and coded the data collected to identify common themes and to ensure data saturation, and the process continued until no new coding or themes emerged. The interviews stopped as soon as I achieved data saturation.

Ethical Research

A doctoral study does not limit ethical consideration to the process of collecting data, but requires it at every stage of the study (Yin, 2013). Ethical issues could occur prior to conducting the study; at the beginning of the study; or during the process of collecting, analyzing, and reporting the data and publishing the study (Yin, 2013). Prior

to conducting any research in a community, researchers have an ethical obligation to identify and weigh possible risks and benefits to the community and its members (Roberts, 2015). It is important to consider several possible ethical issues, including protecting confidential information, establishing respectful relationships with participants without stereotyping, recognizing vulnerable populations to the outcome of the research, and putting participants at risk (Yin, 2013). The key ethical issues of particular importance in a qualitative study include ensuring confidentiality of participants, obtaining informed consent, providing confidentiality, ensuring voluntary participation of subjects in the research, and providing adequate and clear information about the research (Nováková, 2015). Ethical considerations are important aspects of any research study.

A university researcher must obtain ethical approval from a review board prior to conducting research on human subjects (Roberts, 2015). I obtained permission from the Walden University Institutional Review Board (IRB) to collect and analyze the research data. Based on the requirements of Walden University's IRB, compliance with the university's ethical standard was vital. The prospective participants of this study were adults over the age of 18 years and were not prisoners. Participants selected were not under my supervisory control. Participants did not receive any payments, compensation, reimbursement, free services, extra credit, or other gift items as an incentive for participating in the study. Personal identifying information such as addresses, locations, or institutions will remain confidential and undisclosed to protect the privacy of the participants.

Obtaining written consent from participants before enrolling them in a study ensures that their participation is voluntary. A researcher must provide sufficient information about a study to prospective participants to ensure that they make informed decisions about participating (Roberts, 2015). I provided adequate and relevant information to participants to explain the study's aims and purpose. The information provided to participants helped to explain the methods selected to protect participants' identity and confidentiality, the duration of interviews, data use, and the storage of data for 5 years to protect the rights of participants. I will maintain the data collected for this study in a safe place for 5 years to protect the confidentiality of participants.

The participants were aware of their right to withdraw from the study at any time during the study. The participants did not have to provide notice, written or otherwise, before withdrawing from the study. I ensured that participants were aware that participation in this study was voluntary and that I would respect the decision of each participant regarding whether he or she chose to participate in the study. Participants had the right to withdraw from this study at any time, for any reason, regardless of whether data collection was complete, and without any advance notice to me. Participants had the right to ignore any question they were uncomfortable with, and a decision to withdraw from the study did not have any negative impact on the participant. The participants did not feel pressured to remain in the study for any duration of time or against their will. I did not provide any incentive to participants, and I worked with the participants to ensure that the time spent in the interview was at their convenience and thus posed minimal disruption to their work or personal schedule. Participants used the informed consent

form (see Appendix A) to acknowledge in writing their understanding of all the study requirements, including the fact that they were free to withdraw from the study at any time. The informed consent form (see Appendix A) constituted the participants' agreement to participate in this study.

Data Collection

Data collection in a case study can involve documentation review, review of archival records, interviews, direct observation of participants and events, and review of physical artifacts (Yin, 2013). In this section, I explore the data collection instruments used to gather evidence for the case study, data collection and organization techniques, and data analysis methods. I start by discussing the data collection instruments for my research study.

Instruments

A variety of data collection instruments are available to researchers, including interviews, reviews of existing documents and records, surveys, questionnaires, aptitude tests, attitude tests, leadership tests, and personality tests (Yin, 2013). In a qualitative study, interviews are the key and help researchers to focus directly on the research topic by providing perceived causal inference and explanations of the research topic (Englander, 2012; Kipkulei, 2013; Yin, 2013). Interviews are the preferred method of data collection when a researcher intends to probe deeper and ask follow-up questions to the participant's previous responses; interviews have a better rate of response (Kipkulei, 2013). I collected interview data from 20 SME leaders within four SMEs in Lagos, Nigeria, and asked open-ended questions to provide further insight to the study.

Interview questions also covered areas to help understand the factors that influence ICT adoption within the organization. Collecting data at the participants' site and reviewing research data on other factors affecting ICT adoption helped identify themes in my data analysis.

Interviews as a form of data collection have weaknesses. Interviews are prone to bias when interviewers articulate the questions poorly (Yin, 2013). The response from participants may also be subject to bias or inaccuracy because of poor recall and reflectivity, where participants tell the interviewer what they think the interviewer wants to hear (Yin, 2013). There is no formula in the interview process; as such, different groups of researchers cannot generate or guarantee the same results or replicate investigations (Kipkulei, 2013). The interview protocol I used for this research study is in Appendix B. The interview consisted of open-ended questions designed to provide answers that would align with my research study.

The reliability of any research study is a measure of the consistency of the research approach (Kipkulei, 2013). Researchers can achieve reliability and validity in a qualitative case study through data source triangulation by comparing data from different sources, including interviews, participant observation, member checking, review of existing documents, and additional feedback from participants (Houghton et al., 2013; Yin, 2013). I applied member checking to ensure the reliability and validity of the data collection instrument and the process for this study. Member checking ensures data validity and reliability, and member checking continues until data saturation occurs in the data collection process (Caretta, 2015; Houghton et al., 2013). Member checking

involves conducting interviews with participants and providing each participant a copy of the researcher's interpretation of the interview data to verify the accuracy of data captured (Houghton et al., 2013; Yin, 2013). The interviews and member checking continued until no new information was available, therefore ensuring data saturation. Proper documentation of the data collection process and research approach ensures the reliability and validity of a study (Yin, 2013). To improve the data collection process and ensure validity of the study, researchers may also rely on multiple or different sources, data collection methods, investigators, and theories to corroborate the evidence and validate the data collection instrument (Podsakoff, MacKenzie, & Podsakoff, 2012).

The instruments used in the collection of research data must be reliable to reduce any error in data collection and analysis (Kipkulei, 2013). The interview protocol for this research study is in Appendix B. This instrument consisted of open-ended questions designed to solicit answers from participant that aligned with my research study. The researcher's responsibility is to ensure appropriate precautionary measures are in place to confirm the validity of the study (Kolb, 2012). Such precautionary measures include reflexivity, documentation, theoretical sampling, negative case analysis, and transferability of the study (Kolb, 2012). An instrument is valid if it measures what the researcher intends to measure (Kipkulei, 2013). The validity of a study is the degree to which the data collection process and instrument accurately reflect the concept the researcher is attempting to measure (Seyal, 2015). The assurance of confidentiality, and the understanding that participation in this study was voluntary without expectation of

any form of reward, further ensure validity and reliability of the data collection process (Simon & Goes, 2012).

Data Collection Technique

The data collection method and analysis included in-depth interviews of SME leaders within selected SMEs in Lagos and an examination of existing documents and artifacts relating to ICT implementation within these organizations to answer the how and why of the research questions. Interviews have become the primary data collection technique for qualitative research associated with human scientific studies (Englander, 2012). However, researchers rely on multiple data sources to ensure they collect sufficient and unbiased data (Yin, 2013). These data sources include individual in-depth interviews, ethnographic observations, and a review of other documents on the study topic (Yin, 2013). Six data collection methods that are appropriate for a case study are review of documents, archival records, interviews, direct observation, participant observation, and physical artifacts (Yin, 2013). Semistructured interviews, observations, and document review are appropriate data collection techniques in a qualitative case study (Apulu & Latham, 2011). Structured interview, observation, and review of existing documents are the most effective data collection techniques for discovering and understanding the context of the studied phenomenon in a case study (Yin, 2013). Interview questions should be short, simple, and open-ended to avoid ambiguous formulations and to ensure the basis of the data collected is the invaluable personal experience of the interviewee (Halpern & Leite, 2015). Interviews, participant observations, and reviews of existing documents were appropriate to answer the research

question because participants were able to provide information that led to determining the research theme. Other methods of collecting data, such as reviews of archival records and physical artifacts, can also help answer the research question because they serve as an additional source of information to support information collected using other methods.

Member checking involves interviewing participants to collect data, transcribing and interpreting the interview data, and providing participants copies of the interpreted interview data to ensure the accuracy of data captured (Houghton et al., 2013; Yin, 2013). Member checking continues until data saturation occurs, at which point no new information emerges from the interview (Houghton et al., 2013). Member checking should occur during the transcription phase of the interview data and not after the analysis and synthesis of the data (Houghton et al., 2013). Member checking should occur when participants are able to recognize and provide feedback only on the experience they have described in the interview and not the experience shared by other participants (Houghton et al., 2013). I conducted interviews with one participant at a time in a private setting at his or her respective work site and provided copies of the interpreted interview data for member checking. The interviews and member checking continued until no new information was available to ensure data saturation. Data saturation is necessary to ensure a researcher has gathered adequate and accurate information that reflects the views of the study participants (Coenen et al., 2012; Kolb, 2012). There was no pilot study after I received IRB approval.

Data Organization Techniques

Three principles of data collection that are applicable to all data evidence sources are using multiple sources of evidence in a study, organizing and documenting research evidence, and maintaining a chain of study evidence to increase the reliability of the information presented in the study (Yin, 2013). The technique of organizing research data is important, particularly in a case study, due to the volume of information and evidence. Microsoft Word was the tool used to transcribe the data collected from interviews and observations; Mendeley citation manager was appropriate to identify citations and references; and NVivo was suitable for analyzing the data, identifying themes within the data, and creating matching codes. Securing data in filing cabinets provided additional protection of participants' information, and using codes to replace names of participants or the organization they represented ensured participants' confidentiality. Using codes and terms also helps identify common themes in collected data (Jones et al., 2014). Qualitative data collection and analysis involves reviewing the data for content, developing codes for the data, and categorizing the codes into common themes (Elo et al., 2014). Code definition must be clear and should not overlap, such that two or more rounds of independent coding will produce similar results (Elo et al., 2014). Grouping the codes that emerge based on constructs that reflect different views expressed by the participants ensured the proper categorization of these themes. Codes such as P1, P2, P3, and so forth represented individual participants, and S1, S2, S3, and so forth represents the SMEs. I will maintain all raw data in a locked container for 5 years, at which time I will destroy such data.

Data Analysis Technique

In a qualitative study, data analysis consists of preparing and organizing the data for analysis, including text and image data; reducing the data into themes using processes that involve coding and condensing the codes; and presenting the data in figures, tables, or a discussion (Yin, 2013). Data analysis in a case study consists of exploring the research data; categorizing the data; and tabulating, testing, or sometimes recombining the evidence to draw empirically based conclusions (Yin, 2013). The data analysis methods of a case study research approach consist of a detailed description of the case and its settings.

In this study, I asked semistructured interview questions (see Appendix B) with the goal of obtaining in-depth information to address the central research question. The techniques of analyzing case study research data do not have clear definitions, which makes analyzing case study data a difficult process (Yin, 2013). Pattern matching, explanation building, time-series analysis, logic models, and cross-case synthesis may be helpful in overcoming the challenges of analyzing case study data (Yin, 2013).

Qualitative case study research is dependent on the ability to collect data and conduct interpretative analysis of the data (Stentz et al., 2012). Computer-assisted tools such as NVivo facilitate data analysis, including identifying themes in the data and coding and categorizing the large amount of narrative text collected during the open-ended interviews (Kipkulei, 2013; Yin, 2013). I analyzed the data using inductive data analysis, which involved building patterns, themes, and categories using a bottom-up approach by collating the data into increasingly abstract categories of information. As a

research study evolves, the inductive approach is used by the researcher to establish the appropriate theme for the research (Yin, 2013). The meaning the participants ascribed to the relationship between culture and ICT adoption had primary consideration. My interpretation of the data contributed to the outcome of the research. I identified sections of the study in which my interpretation of the data may constitute bias or limitations.

In the study, I used P1, P2, P3, and so forth to identify participants, while S1, S2, S3, and so forth represented the SMEs as separate cases. Other codes identified characteristics within the data such as the different factors that influence ICT adoption decisions, not limited to the effect of culture. These codes allowed for easy categorization, analysis, and interpretation of the data. The data collected helped provide a snapshot of the cases studied, and from this data, I identified themes that emerged, with the goal of answering the central research question.

Triangulation refers to the use of multiple forms of qualitative research, not the combination of qualitative and quantitative (mixed) methods to study a phenomenon (Denzin, 2012; Houghton et al., 2013). The purpose of triangulation is to secure an in-depth understanding of a research question by confirming data accuracy and completeness (Denzin, 2012). The four types of triangulation in a case study are data triangulation, investigational, theories, and methodological triangulation (Yin, 2013). Data triangulation methods include interviews, participant observation, direct observation, physical artifacts, document review, and archival records (Yin, 2013). I applied methodological triangulation method in this study and brought in data collected

from interviews, member checking, on-site participant observations, and review of existing documents.

Reliability and Validity

It is important for information collected from participants to be valid and reliable; otherwise, the entire study would not accurately reflect the view of the population. The reliability of any research study is a measure of the consistency of the research approach (Kipkulei, 2013). Researchers can achieve the reliability and validity of a qualitative case study through data source triangulation by comparing data from different sources, including interviews, observation of participants, member checking, review of existing documents, and additional feedback from participants (Houghton et al., 2013; Yin, 2013). I applied these data triangulation methods in my study to ensure the data collected were valid and reliable.

To ensure the reliability and validity of this study, I ensured data saturation occurred by conducting interviews with participants and providing each participant copies of the transcribed and interpreted interview data for member checking. The interviews and member checking continued until no new information was available. Proper documentation of the case study research approach and steps taken throughout the research process ensured the reliability and validity of the study (Yin, 2013). Therefore, the reliability of the research process ensured the validity of the study.

Reliability

It is beneficial to clarify a researcher's bias from the onset of a study so readers understand the researcher's position and can identify any bias or assumptions made by

the researcher (Yin, 2013). It is equally important for a researcher to indicate in a research report any past experience, prejudice, bias, and orientation, including any philosophical assumptions that may influence the research study (Yin, 2013). To mitigate the effect of bias, researchers may also rely on multiple or different sources, data collection methods, investigators, and theories to corroborate the evidence (Podsakoff et al., 2012).

I ensured that readers are aware of my position on the research topic and are able to identify any bias or assumptions I have made. Readers of this study will be aware of my professional experience, particularly if it had any influence or resulted in bias toward the study outcome. Other methods of mitigating bias include peer review, triangulation, eliminating motivational factors that may cause bias, minimizing task difficulty in the participants' response, conducting external audits of research data, and testing the validity of the research conclusion (Podsakoff et al., 2012). In this study, I conducted peer review, triangulation, eliminated motivational factors that may cause bias, minimized task difficulties, conducted external audits of research data, and tested the validity of the research findings. The ability to mitigate errors in the research process is a measure of the reliability of the study. The instruments used in the collection of research data must be reliable to reduce any error in data collection and analysis (Kipkulei, 2013). Collecting research data from multiple sources, such as document review, interview, and participant observation, helped mitigate bias and ensure the reliability of the study.

Member checking involves providing participants transcripts of their interview to ensure the accuracy of data captured (Houghton et al., 2013; Yin, 2013). Member

checking should occur during the transcription phase of the interview data and not after the analysis and synthesis of the data (Houghton et al., 2013). Member checking should occur at a point in the research when participants are able to recognize and provide feedback only on the experience they have described in the interview and not the experience shared by other participants (Houghton et al., 2013). To improve the dependability and credibility of this study, I conducted member checking by providing transcripts of my interpretation of the interview to participants for them to review for validity. Participants were aware of the confidentiality of the study and understood that their participation was voluntary, without an expectation of any form of reward, thus ensuring the data collected from the study remained unbiased and truthful (Simon & Goes, 2012).

Validity

An instrument is valid if it measures what the researcher intends to measure (Kipkulei, 2013). The validity of a study is the degree to which the study accurately reflects the concept the researcher is attempting to measure (Seyal, 2015). Two types of validity exist in a research study: internal and external (Kipkulei, 2013; Kolb, 2012; Seyal, 2015). Internal validity refers to the degree of accuracy identified in the collected data (Kipkulei, 2013; Kolb, 2012). External validity refers to the degree to which the researcher can generalize the study findings when removing it from the managed environment of the research study (Kolb, 2012; Venkatesh et al., 2010; Yin, 2013). In research, establishing validity includes not only collecting data but also every stage of the research process (Yin, 2013). Some of the eight strategies Yin (2013) described to

establish quality, reliability, and validity in qualitative research include having a prolonged engagement and persistent observation to build trust with participants, learning the culture, and identifying distorted information introduced by either the informant or the researcher. Validating a study helps build confidence and trust regarding the outcome of the study for its intended audience.

I applied my knowledge, skills, and experience in the IT industry to collect reliable and valid data to address the central research questions of this study. Open-ended questions with follow-up questions helped eliminate any ambiguity in participants' responses, as well as identify themes in the data collected. Establishing prolonged engagement with the interviewees helped me learn more about the participants as well as identify any distortions in the information provided. Prolonged engagement with participants in a qualitative case study allows researchers to identify any bias or distorted information (Yin, 2013). The validation strategy in a study includes conducting in-person interviews, observing participants on site, reviewing existing documents, and member checking (Apulu & Latham, 2011). Collecting data from multiple participants and from different sources using different methods of data collection and analysis ensured the validity of my study.

Transferability is the ability to transfer the findings or methods of a study from one group to another or the extent to which one determines how the findings of one inquiry are applicable in other contexts or with other participants (Houghton et al., 2013; Yin, 2013). The notion that a particular study outcome can be an example used within a broader group or context is a determinant of the transferability of the study (Rapport,

Clement, Doel, & Hutchings, 2015). A researcher's responsibility is to provide detailed descriptions for readers to make informed decisions regarding whether a study's outcome is transferable to their specific contexts (Houghton et al., 2013). I adhered to the protocols of a qualitative study and provided detailed information so readers can determine the transferability of the study finding.

Credibility is the element of a study that allows others to recognize the participants' experiences described within a study; as such, credibility is the degree of confidence others will have in the truthfulness of the data and its analysis (Houghton et al., 2013; Hudson et al., 2014). Credibility is the conformity of the study findings with reality (Rapport et al., 2015). A researcher must conduct research in a manner that is demonstrable and believable to the reader (Houghton et al., 2013). Prolonged engagement, persistent observation, triangulation, peer debriefing, and member checking are means by which I established credibility in this qualitative multiple case study.

Dependability refers to the constancy of the study findings over time (Hudson et al., 2014). A study is dependable when other researchers understand and can follow the trail of decisions used by a researcher in a study (Houghton et al., 2013; Rapport et al., 2015; Yin, 2013). This decision trail is a clear definition of the study process, including study purpose, participant selection, data collection and analysis techniques, data interpretation and findings represented, and techniques used to establish credibility of the study (Rapport et al., 2015). Readers may not agree with the interpretation of the researcher; however, a study is dependable if readers are able to understand the means by

which a researcher derived study findings (Houghton et al., 2013). Abiding by the protocols of a qualitative study will ensure the dependability of the study.

Confirmability refers to readers' ability to verify the neutrality and accuracy of the research data (Houghton et al., 2013). A study's validity improves when readers are able to compare and verify the consistency and accuracy of data collected from multiple sources (Houghton et al., 2013; Yin, 2013). Confirmability establishes objectivity in a study, where the study finding is linkable back to the participant data and not the researchers' assumptions (Houghton et al., 2013; Rapport et al., 2015). I ran queries within software such as NVivo, Microsoft Excel, and Mendeley to demonstrate confirmability. A study is reliable and valid when a researcher has established credibility, dependability, transferability, and confirmability.

Transition and Summary

This section included a reiteration of the purpose statement for additional clarity on the goal of my research. I chose the multiple case study research design for my study, which led to a better understanding of the central research question by conducting in-depth interviews with the study participants. The participants for this multiple case study included 20 SME leaders from four SMEs, with five participants selected from each SME who had successfully implemented ICT in Lagos, Nigeria. Section 2 included a discussion of the data collection instrument and techniques, data analysis method, reliability, and validity of the study. Section 3 includes a discussion of the application of my research study to professional practice and the implication of the study for social change.

Section 3: Application to Professional Practice and Implications for Change

This section includes an overview of the study, the findings, the application of this study to professional practice, and the implications of the study for social change. This section also includes recommendations for action based on my study findings, recommendations for further study, reflection on my experience within the doctoral study, and a summary and conclusion of the study. Included in this section, along with the study findings, are the themes I identified as part of my data analysis, a discussion of how these themes relate to the study findings, and the connection between these findings and the conceptual framework used as the research basis for this study.

Overview of Study

The purpose of this study was to explore the factors that influence SME leaders' adoption of ICT as a business strategy to increase profitability and compete in the global market. I identified four SMEs as community research partners for my study. I e-mailed letters of cooperation (see Appendix C) to each community partner and received consent via e-mail from these community partners prior to contacting their employees. I received Walden University IRB approval upon receipt of community partner consent and proceeded to contact individual participants. I interviewed five participants from each SME, with a total of 20 participants interviewed for the study. Each participant received a consent form (see Appendix A) explaining the purpose of the study, the procedures, the nature of the study, their rights, and risks and benefits of participating, and each individual consented to participate in the study prior to starting the interviews.

Participants responded to eight semistructured interview questions (see Appendix B), and after extensive analysis of the data, I produced 32 codes to help identify common themes in the data collected. The data analysis and coding continued until no new codes or themes emerged, which indicated that data saturation had occurred (Jones et al., 2014). I grouped the codes into four major themes: ICT adoption factors, ICT roles and benefits, role of government, and SME success factors. I used the themes to categorize participants' views on the central research question: How do SME leaders in Lagos, Nigeria, use ICT adoption as a business strategy to increase profitability and compete globally? Identifying themes in the data helped to emphasize the meaning participants ascribed to the central research question (Stentz et al., 2012). I used NVivo to facilitate my data analysis, code the data, and reduce the codes into themes to categorize the large amount of narrative text collected during the open-ended interviews. I used member checking to ensure accurate data collection, and I ensured that data saturation occurred before concluding the interviews and member-checking process.

Presentation of the Findings

The overarching research question for this study was as follows: How do SME leaders in Lagos, Nigeria, use ICT adoption as a business strategy to increase profitability and compete globally? Small to medium-size enterprises are an integral part of innovation and growth in a dynamic economy and play a vital role in job creation (Dermol & Tavčar, 2012; Gagliardi, 2013). In developed countries such as the United States and United Kingdom, SMEs account for over 99% of employers and contribute over 50% to the country's GDP (Gbandi & Amissah, 2014; Tobora, 2014). In developing

countries such as Nigeria, SMEs are responsible for 90% of business in the country but contribute less than 10% to the GDP (Gbandi & Amissah, 2014). Growth in ICT adoption within both large and small businesses in developed countries has been significant (Al-Debei & Al-Lozi, 2012; Ghobakhloo et al., 2012). However, ICT adoption rates within SMEs in developing countries had remained relatively low (Asare et al., 2012; Mokaya, 2012). In this study, I explored the factors that influence SME leaders' adoption of ICT as a business strategy to achieve competitive advantage in the global market.

I obtained a list of SMEs from the SMEDAN and identified four SMEs as the community partners in my study. I received conditional approval from the Walden University IRB prior to contacting the community partners for consent to participate in my study. Each community partner received a letter of cooperation via e-mail for consent, and I forwarded copies of the consent to Walden IRB for final approval to collect data, after which I proceeded to contact participants, who were employees of the SMEs, for their consent to participate in my study. Each participant provided a convenient time and place for an in-person interview. Five in-person interviews took place at each SME, and each interview lasted an average of 30 minutes, with an additional 15 to 30 minutes needed for member checking. To maintain the confidentiality of each community partner and individual participant, I used the codes S1, S2, S3, and S4 to represent each community partner and P1, P2, P3, P4, and P5 to represent the participants. For example, S1-P1 indicates Participant 1 of SME 1, while S2-P1 indicates Participant 1 of SME 2.

The research method and design for this study was a qualitative multiple case study and my data collection strategy involved collecting interview responses, transcribing the data, performing member checking, and analyzing the data. This research method and design led to patterns, themes, and opposing views based on the participants' experience adopting ICT as a business strategy to increase profitability and compete globally. Interviews, data transcription, and member checking continued until the participants provided no new information, which ensured that data saturation occurred (Caretta, 2015; Houghton et al., 2013). The participants interviewed had participated in ICT adoption decisions within their respective organizations.

The participants each responded to eight semistructured interview questions (see Appendix B), and after data transcription, member checking, and data saturation, I loaded the data collected into NVivo 11. An extensive analysis of the data using NVivo resulted in the generation of 33 distinct codes that I further categorized into four major themes: ICT role and benefits, ICT adoption factors, role of government, and SME success factors. The categorized themes that emerged provided a structure through which to examine the participants' views on the central research question.

ICT Role and Benefits

The response for this theme originated from Interview Questions 2, 3, 4, and 7 (see Appendix B), which explored participants' views on the role and benefits of ICT in the context of their business operation as well as in a broader context. The analysis of the participants' responses on the role and benefits of ICT produced nine distinct codes: job creation, efficiency productivity and growth, crime and fraud prevention, financial

benefits, improved communication, advertisement, competitiveness, globalization, and customer relationship (see Figure 1). Participants provided different examples of the roles and benefits of ICT in their respective organizations and the broader community.

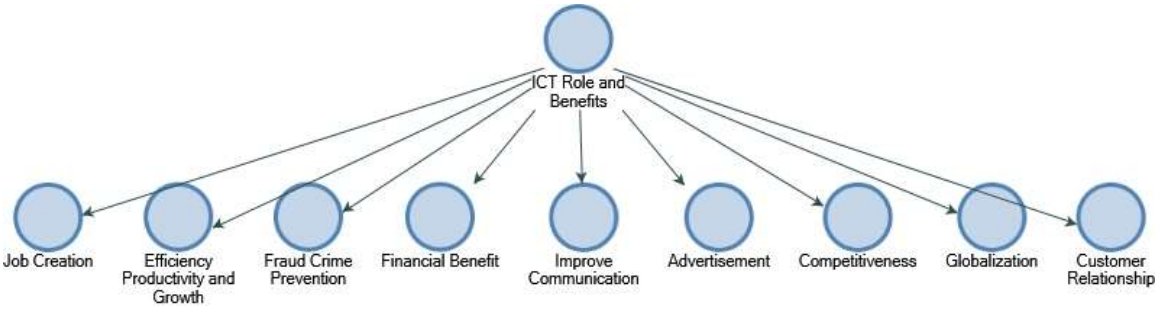

Figure 1. ICT role and benefits theme and its related codes.

All participants agreed that ICT adoption leads to more jobs, financial benefits, improved efficiency, increased productivity, and growth, which confirmed the findings from multiple studies on the socioeconomic benefits of ICT adoption, particularly in developing countries, which include poverty alleviation, job creation, revenue generation, and economic growth (Hassan & Olaniran, 2011; Tarutė & Gatautis, 2014; Zhang et al., 2014). Several participants emphasized that ICT adoption led to increased productivity and efficiency within their respective organizations and resulted in a significant increase in revenue. The adoption and use of ICT constitute an enabling mechanism by which organizations improve the efficiency and effectiveness of their business processes, as well as transform existing business models (Jones et al., 2014).

Some participants focused on using ICT adoption for advertisement. For example, several participants said that they used ICT to create awareness of their products and services using Internet services such as Google Ads, Facebook, Instagram, and other social media platforms to advertise their products and services. Several

participants responded that they were able to keep in touch with customers and could effectively advertise and communicate information about their product or service via the company's website and other online ICT tools. For example, Participant S1-P3 responded that organizational leaders hired a marketing and brand consultant to promote the firm's products and services using the company's website and other social media platforms so that the business would reach a wider range of consumers, vendors, and business partners. Business entities have found various uses for ICT, particularly the Internet, to advertise, generate revenue, and perform other business functions (Awiagah et al., 2015; Terzi, 2011). Organizational leaders use websites to advertise new products and to change marketing and other production processes (Higon, 2012). Several of the participants interviewed confirmed that they used their websites as a means to highlight their products or services as well as to communicate with their customers effectively.

About 25% of the participants interviewed said that ICT adoption will reduce fraud and help to prevent financial crimes, as the adoption of ICT had resulted in greater accountability and proper audit trails compared to when they used paper-based record keeping in their business process. In an attempt to reduce the cost of banking services and to address money laundering, corruption, fraud, and other financial crimes, leaders at the Central Bank of Nigeria (CBN) introduced a new cashless policy that became effective June 1, 2012. The cashless policy at CBN restricted the daily cash withdrawal or deposit limit to 500,000 naira for individuals and 3,000,000 naira for corporate entities (Abiodun, Sunday, Chukwudi, Phalecs, & Blessing, 2013). The objective of the cashless policy at CBN was to increase the use of ICT for financial transactions in all sectors of

the economy, both for large and small businesses, while reducing the cost of banking services, fraud, and other financial crimes (Abiodun et al., 2013).

Researchers in multiple studies agreed with the view of some participants that ICT adoption will help in coping with and preventing corruption, fraud, and crime (Abiodun et al., 2013; Charoensukmongkol & Moqbel, 2014; Li, 2014); however, other studies exist that contradict this view. Some researchers had emphasized the increase in cybercrime and other dangers related to Internet-based technologies, particularly in financial transactions in Nigeria, where many experts agree that the infrastructure needed to secure such electronic-based transactions are insufficient or nonexistent, with an estimated 60% vulnerability to fraud (Abiodun et al., 2013; Awiagah et al., 2015; Schaper, 2015). Online trading exposes SMEs to the unexpected risk of increased vulnerability to scams and other fraudulent transactions (Schaper, 2015). The increase in ICT use in financial transactions exposes consumers to Internet-based fraud, hacking, virus attack, losses, and other undue financial charges (Abiodun et al., 2013; Awiagah et al., 2015).

All participants responded positively to using ICT to gain competitive advantage both in their local market and globally. Company leaders who use ICT-based e-commerce can achieve competitive advantage and cost savings through reduced advertising costs, product differentiation, timely market responses, and improved customer relationships (Awiagah et al., 2015). Leaders of SMEs incrementally use ICT to gain competitive advantage in the global marketplace (Apulu & Latham, 2011; Ghobakhloo et al., 2012; Ghobakhloo & Tang, 2013). Participant S1-P2 responded,

> In the present knowledge economy, there is a need for organizations, including SMEs, to develop some forms of competitive advantage with the use of ICT in order to be successful. . . . When we looked at what the competition was doing, we realized the only way for our business to grow was to leverage the use of technology.

The need for organizations to increase market share and gain competitive advantage within their respective industries drives globalization. Global competitiveness and the need to stimulate growth are compelling reasons why leaders of SMEs need to adopt ICT (Ghobakhloo & Tang, 2013). Most participants interviewed focused their business on the local market, but approximately 20% of the respondents agreed that they could use ICT to reach a global market, which would help increase their market share and revenue growth. Through ICT, business leaders can reach millions of people globally and offer numerous benefits and opportunities to businesses, particularly SMEs (Awiagah et al., 2015). Such global expansion would be beneficial to leaders of SMEs in Nigeria looking for new market opportunities and seeking to compete globally.

Improved customer relationships were among the benefits of ICT identified by several participants. For example, participants responded that they were able to establish two-way communication with their customers using online ICT tools for customer support, comments, suggestions, feedback, and inquires. Many employees of the SMEs inteviewed used Internet marketing and sales as a significant aspect of their revenue generation and used e-commerce platforms for online sales and support. Adopting ICT has had positive effects on firm productivity, directly and indirectly resulting in growth,

profitability, increased market value, employee and customer satisfaction, and positive social and environmental impacts (Tarutė & Gatautis, 2014).

ICT Adoption Factors

Participants' responses to Interview Questions 5, 6, 7, and 8 (see Appendix B) provided the framework for the theme ICT adoption factors. While analyzing the participants' responses, I identified 11 distinct codes from which the ICT adoption factors emerged (see Figure 2). The codes were technology type, financial, infrastructure, skills and resources, government, culture, ICT training, trust, perceived benefits, trend, and generation.

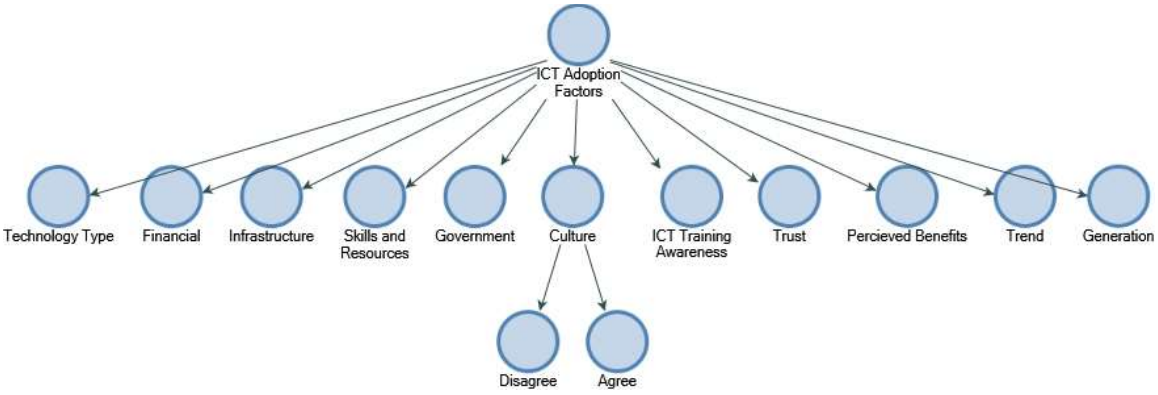

Figure 2. The ICT adoption factors theme and its related codes.

Participants identified several factors as influencing their decision to adopt ICT. All participants agreed that the financial cost of implementing ICT, particularly for SMEs, was a significant factor that was considered before deciding to adopt ICT. According to the participants interviewed, the initial investment in ICT adoption is restrictive to many small businesses that can barely afford the cost of running their daily operation. The costs of purchasing software and computers, hiring skilled ICT personnel,

and training existing staff, as well as other costs associated with ICT adoption, wereare prohibitive for many small businesses (Asare et al., 2012; Awiagah et al., 2015; Consoli, 2012).

Several participants indicated that the decision to adopt technology depends on the type of technology. These participants agreed that having a company website is necessary for any type of business. Participants also indicated that using online technology, such as social media, online advertising, e-mail, and other means to communicate with customers and vendors is vital in the success of any organization. These types of technology are readily available, have a low cost of adoption, are easy to learn, and are affordable to most small businesses. However, some participants noted that many other forms of technology are not readily available, require skilled ICT resources to implement, and are prohibitively expensive for many small businesses. For example, the implementation of some accounting software, customer relationship management software, and enterprise resource planning technology is unaffordable for many SMEs, and the leaders of such SMEs will need to look for alternative, less expensive solutions to provide similar functionality, including relying on manual paper-based solutions.

One of the major factors identified by the study participants was lack of reliable infrastructure to support ICT adoption in Nigeria. The unreliable power supply, limited and expensive Internet service, unreliable and expensive telecommunications, bad roads, and other infrastructural services not readily available in Nigeria were some of the examples participants cited as influencing their decision to adopt technology. The

leaders of many SMEs must provide the infrastructural services they need to succeed, so they have limited resources left to invest in ICT. Factors that affect the low adoption rate of ICT, particularly for SMEs in developing countries, include low ICT skill level, financial limitations of SMEs, the cost of implementing ICT, and lack of infrastructure needed to support ICT adoption (Asare et al., 2012; Awiagah et al., 2015; Mokaya, 2012, Taylor, 2013).

All participants agreed that because of the importance of SMEs, particularly toward economic development, government has a responsibility to provide not only the infrastructure needed to support all businesses, both large and small, in Nigeria, and to ensure it passes laws and regulations that will allow small businesses to compete favorably with their larger counterparts. Larger organizations have significant advantages over small firms, such as having a deeper level of specialization, having more advanced knowledge in technology, being able to leverage economies of scale, having access to cheaper and larger financial resources, and being able to mitigate risk by spreading the risk into other market opportunities (Ghobakhloo et al., 2012; Stam & van Stel, 2011). Leaders of SMEs lack the competence, market control, and resources available to large firms; as such, the success of SMEs depends on their leaders' ability to be innovative, formulate and implement competitive strategies, and respond to changing market conditions under favorable government laws and regulations (Mazzarol, Clark, & Reboud, 2014; Mbizi et al., 2013). Therefore, the policy of the Nigerian government is to develop the economy, help create jobs, and eradicate poverty through the development of SMEs (Hassan & Olaniran, 2011; Zhang et al., 2014).

The effect of ICT adoption and the growth of SMEs in developing countries indicated the role of government policies in the successful implementation of ICT is important to the development of SMEs as well as to regional economic growth (Asare et al., 2012; Ghobakhloo et al., 2012). To eliminate any gap between the ICT adoption needs of SMEs and the support government is providing, government leaders must understand precisely what support SMEs need to implement ICT successfully (Ghobakhloo et al., 2012). Support from government is critical to the success of SMEs and the economic growth of the region.

Culture is a significant code that emerged within the factors that influence ICT adoption in SMEs in Lagos, Nigeria. About half of the participants who discussed the influence of culture on ICT adoption contended that culture had no place or influence on the decision to adopt ICT in their respective organizations. As discussed earlier, these participants argued that other factors, such as cost of implementation, available ICT skills, unreliable public infrastructure, availability of financial resources, and government support for SMEs, were the critical factors that influenced the decision to adopt ICT, not cultural or social belief systems. For example, S3-P2 commented, "In business, social and cultural beliefs do not or should not be allowed to influence our decisions. So as an individual, the only thing I think of when making business decisions is the growth of the company." The view of Participant S3-P2 and others who concurred contradicted studies that indicated attitude influences individuals' decision to adopt and their aversion to technology. The culture or belief system of a group or society plays a role in the decisions made by individuals of that group (Erumban & De Jong, 2006).

Participants who agreed that culture played a significant role in their decision making, including the decision to adopt technology, confirmed the findings of several studies on the influence of culture on decision making, particularly in business. Culture or belief plays a role in individual decision making and influences management or business practice, including the decisions made by SME leaders regarding the adoption of ICT for business purposes (Elbeltagi et al., 2013). Culture influences the success of ICT projects at both the organizational and the team levels (Lee et al., 2013). Culture can therefore be a significant factor in the success of ICT adoption in an organization (Al-Debei & Al-Lozi, 2012; Lee et al., 2013).

Other ICT adoption factors identified by participants in their responses include the need for ICT training that promotes awareness about the benefits of ICT adoption and increases the availability of ICT skilled resources. Some participants noted the issue of trust or distrust of technology played a role in their decision to adopt technology. Participant S4-P1 replied that consumers would be less likely to adopt ICT if they did not feel secure performing business transactions online. Most participants indicated that the perceived benefits of ICT adoption also played a critical role in their decision to adopt ICT. These participants reported that they made informed decisions on whether to adopt ICT based on the perceived benefits and return on investment on the type of technology to adopt. Some participants noted that the basis of their decision to adopt ICT was the fact that this was the trend in business, as many customers and vendors were already using ICT in critical aspects of their business operations; as such, they expected any trading partner to be ICT-ready. A few participants noted that ICT adoption in business

is a generational norm, such that businesses owned or managed by the older generation are less likely to adopt new technology, while the reverse is true with the youngest generation of entrepreneurs and business managers.

Role of Government

The response for this theme originated from Interview Questions 5, 7, and 8 (see Appendix B) regarding the role of government in facilitating ICT adoption within SMEs in Nigeria. The analysis of the participants' responses on the role and benefits of ICT produced six distinct codes: the need for government to adopt ICT, assist with education and training, provide equitable opportunities for businesses, provide financial assistance, infrastructure, and regulations to support SMEs (see Figure 3). Several participants responded that government should lead by example by adopting ICT within government agencies. These participants noted that organizations, both large and small, can benefit from government ICT adoption initiatives to facilitate the need for businesses to adopt ICT. According to these participants, if government adopts ICT for transactions such as tax collection, business registration, bill payment, and other financial and administrative processes, the leaders of many small businesses will feel encouraged or required to implement ICT as part of their organizational process when doing business with the government. With the use of ICT, most government transactions can take place using the Internet, which eliminates the face-to-face contact between citizens and government agencies, thereby helping to reduce the cost of doing business with the government (Charoensukmongkol & Moqbel, 2014).

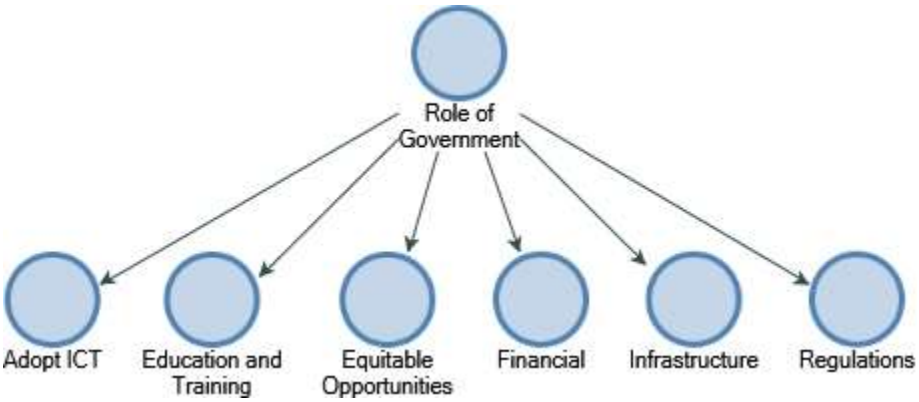

Figure 3. The role of government theme and its related codes.

All participants also identified the lack of a reliable public infrastructure as a significant factor affecting the adoption of ICT, particularly in SMEs. Small and medium enterprises are crucial vehicles to archive national economic objectives of poverty alleviation, job creation, and the development of entrepreneurial competence, including creating indigenous technology (Azman & Ali, 2015). The success of SMEs depends on several factors, including access to reliable infrastructural facilities (Azman & Ali, 2015). Infrastructure is the physical and organizational structure that guides and supports a society in terms of water, electricity, roads, bridges, telecommunication, sewers, and many other factors needed for the effective operation of any society or enterprise (Azman & Ali, 2015). The government needs to improve existing infrastructural facilities in Nigeria to support the development of SMEs in the country (Azman & Ali, 2015; Gbandi & Amissah, 2014; Hassan & Olaniran, 2011).

Other participants noted that the government does more than provide infrastructure and can help provide financial support for SMEs to subsidize the cost of ICT adoption, provide ICT training facilitates, create equitable opportunities to support

small business development, and pass laws and regulations that support the growth of SMEs. The national climate for innovation, such as government policy, cost of doing business, and quality of communication infrastructure, is a key factor that influences SME growth (Mazzarol, Clark, Reboud, Gough et al., 2014). Factors that affect the low adoption rate of ICT include low ICT skill level, the cost of implementing ICT, low capital base of SMEs, and lack of infrastructure needed to support ICT adoption (Asare et al., 2012; Awiagah et al., 2015; Consoli, 2012; Mokaya, 2012). The factors affecting ICT adoption have a more significant effect on SMEs, particularly in developing countries where knowledge on ICT benefits, resources, and infrastructure are not readily available to support seamless ICT adoption (Ashurst et al., 2012; Awiagah et al., 2015; Tovar, 2012).

SME Success Factors

The theme SME success factors emerged primarily from participants' response to Interview Questions 1, 2, 3, 4, 5, and 7 (see Appendix B). In my data analysis, I identified seven distinct codes from which the theme SME success factors emerged (see Figure 4). All participants interviewed concurred that their decision to implement ICT as part of their business strategy was largely responsible for their business success. Participant S4-P5 noted that the widespread adoption of ICT in Nigeria and the decision to adopt ICT within the organization had resulted in significant growth in the firm's operations as well as helped reduce the cost of doing business.

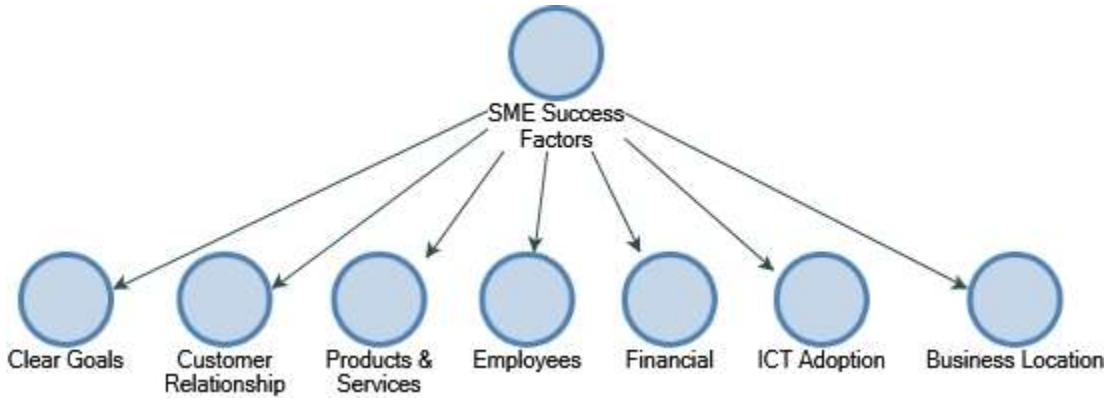

Figure 4. The SME success factors theme and its related codes.

Leaders who have adopted and used ICT have helped their organizations achieve growth by becoming more efficient, effective, innovative, and globally competitive (Consoli, 2012; Jones et al., 2014; Tarutė & Gatautis, 2014). The adoption and use of ICT improved access to information, fostered effective communication, and improved process and market efficiency for organizations (Mustafa, 2015). Large and small organizations in both developed and developing economies rapidly became formidable competitors by using ICT to create competitive advantage and to become market leaders (Elbeltagi et al., 2013). Organizations can use ICT as the means to facilitate strategic planning, future research, and business forecasting for both process efficiency and effectiveness (Agwu & Murray, 2015; Keller & Von der Gracht, 2014).

All participants also indicated that having a strong product or service brand is crucial to the success of any business. These participants noted that organizations must deliver its products and services at a time, quality, quantity, and cost anticipated by the market to be successful. Participant S3-P3 noted that a successful business strategy can effectively and efficiently deliver goods and services to consumers at the right time,

quality, quantity, and price. A strong product or service brand represents the core values of an organization and its products or services in ways that consumers can relate (Yeh, 2015). Consumers are more likely to purchase products or services with positive brand images because this has the effect of lowering consumers' perceived risk and increasing their perceived value (Yeh, 2015). The SME leaders who adopt new technologies rapidly create innovative products and compete globally (Higon, 2012). E-commerce and ICT have changed the way organizations conduct business and forced companies to provide innovative products and services more effectively and efficiently according to consumers' needs (Al-Debei & Al-Lozi, 2012; Asare et al., 2012; Ghobakhloo et al., 2012; Mustafa, 2015).

Another factor identified by some participants as key to the success of their business is how the organization relates with its customers. According to these participants, the adoption of ICT and having innovative products or services, without having good customer relationships, will be insufficient to make any business a success. The relationship between customers and organizations is important because customers buy products or services from these organizations (Khalique, Shaari, & Hassan, 2011). Some visible benefits of ICT adoption include the ability to simplify work routines, promote efficient communication and coordination between various value chain partners, increase productivity, and improve customer service that results in increased customer satisfaction (Wanyoike et al., 2012). The adoption of ICT has had a positive effect on firms' productivity, directly and indirectly resulting in growth, profitability, employee motivation, and customer satisfaction (Tarutė & Gatautis, 2014). Leaders of SMEs must

implement effective marketing strategies and effective management of customer relationships at all times to be effective (Osotimehin et al., 2012).

All participants indicated that the availability of financial resources to SMEs is crucial to their business success. Larger organizations have many advantages over small firms, including the ability to leverage economies of scale, access to cheaper and larger financial resources, and the ability to mitigate business and financial risk (Ghobakhloo et al., 2012; Stam & van Stel, 2011). Leaders of SMEs in Nigeria face a number of challenges such as inadequate access to finance, improper financial and management practices, inadequate entrepreneurial skills, and inadequate ICT adoption in business management (Gbandi & Amissah, 2014; Hassan & Olaniran, 2011). Participant S3-P5 contended that leaders of large organizations can find additional capital easier to fill the gap where government has failed, compared to leaders of SMEs who barely have the capital needed to run their daily operation. Other participants noted that setting clear strategic business goals, choosing the right location for the business, feeling motivated, having skills, and rewarding employees adequately were key to their success.

The theory that was most suitable for the conceptual framework in this study was the TAM because it specifies the relationship between perceived usefulness, perceived ease of use, attitude toward computer use, and intention to use technology (Wunnava, 2015; Yeh, 2015). The TAM is an established theoretical model used to explain and predict user behavior toward ICT (Ghobakhloo & Tang, 2013). The findings of this study explained users' behavior toward ICT based on the perceived role, benefits, and

challenges of ICT adoption. The findings also predicted how users will behave toward ICT under different factors that influence ICT adoption, particularly in Lagos, Nigeria.

Applications to Professional Practice

The intent of this study was to explore the factors that influence SME leaders' adoption of ICT as a business strategy to achieve competitive advantage in the global market. The findings of this study are valuable to leaders of SMEs and government agencies, as well as other community partners looking to explore and understand the benefits and challenges of ICT adoption, particularly for SMEs in Lagos, Nigeria. The study finding contributes to the body of knowledge on the factors that influence ICT adoption in SMEs in Lagos, Nigeria.

The SME sector has played a significant role in economic development, poverty alleviation, and job creation in both developed and developing countries (Ghobakhloo et al., 2012; Tambunan, 2011; Tarutė & Gatautis, 2014). However, SME leaders face multiple challenges in achieving profitability, growth, and competitiveness locally and globally, particularly in Lagos, Nigeria. The findings from this study fit into four major themes: SME role and benefits, ICT adoption factors, role of government, and SME success factors. Each theme contributes to the professional practice within SMEs, particularly in Lagos, Nigeria.

Role and Benefits of ICT to SMEs

The study findings categorized under the SME role and benefits theme has significant implications on SMEs leaders' attitude toward ICT adoption and the ways they perceive the usefulness of ICT, particularly the benefits that ICT would bring to

their respective organizations. The leaders of organizations, including SMEs, must adopt and use ICT to survive in the new business economy (Rahayu & Day, 2015). Organizational leaders adopt and use ICT to achieve significant growth by becoming more efficient, effective, innovative, and globally competitive (Consoli, 2012; Jones et al., 2014; Tarutė & Gatautis, 2014). Most significantly, SME leaders use ICT to compete at the same level as their larger counterparts in the global market (Agwu & Murray, 2015). The findings from this study may help leaders of SMEs make informed decisions on ICT adoption and the impact toward achieving their strategic objectives of innovation, growth, profitability, and competitiveness.

Factors That Influence ICT Adoption in SMEs

The study findings included several factors that affect ICT adoption by SME leaders in Lagos, Nigeria. These factors include the type of technology, availability of financial resources, the need for reliable infrastructure, availability of ICT skilled resources, role of government, culture, attitude toward technology, perceived benefits, training, and generational differences. The findings from this study aligned with other studies on the impact of ICT adoption in SMEs in developing countries, where financial limitations, unreliable infrastructure, skills shortage, ICT knowledge gap, and insufficient government support emerged as factors that inhibit ICT adoption, with SMEs affected more than larger organizations (Consoli, 2012; Rahayu & Day, 2015; Tambunan, 2011; Tarutė & Gatautis, 2014). Understanding the implications of these factors, particularly to SMEs, will result in better decision making by SMEs and would provide government

agencies and other community partners the tools needed to make informed decisions on addressing some of the ICT adoption challenges.

The Role of Government

With a clear understanding of the role, benefits, and challenges faced by SME leaders regarding ICT adoption, the role of government in addressing many of these challenges in Lagos, Nigeria, becomes clear. The effect of ICT adoption and the growth of SMEs in developing countries indicate the role of government policies toward the successful implementation of ICT is important for developing SMEs as well as for regional economic growth (Asare et al., 2012; Ghobakhloo et al., 2012). Government has a responsibility to provide infrastructural facilities, financial support, and regulations to promote and support the growth of business, particularly SMEs, in society (Ghobakhloo et al., 2012; Mazzarol, Clark, & Reboud, 2014; Mbizi et al., 2013). Government leaders must understand precisely what support leaders of SMEs need to implement ICT successfully, thereby eliminating any gap between the ICT adoption needs of SME leaders and the government's responsibility (Ghobakhloo et al., 2012). The Nigerian government can help facilitate the development of SMEs by providing financial aid, technical training centers, reliable infrastructure, and regulations that support ICT adoption. Decision makers within SMEs and government policy makers may use the findings of this study to plan for successful ICT adoption.

Application of SME Success Factors

In this study, I identified the factors that have contributed to the success of SMEs in Lagos, Nigeria, including the adoption and use of ICT, innovative products and

services brand, good customer relationships, access to financial resources, setting clear strategic business goals, and having the right employees. Leaders who have adopted and used ICT have helped businesses become efficient, effective, innovative, and globally competitive (Consoli, 2012; Jones et al., 2014; Tarutė & Gatautis, 2014). The use of ICT has transformed business processes, and leaders have developed innovative products and services more effectively and efficiently to meet consumers' needs (Asare et al., 2012; Mustafa, 2015; Osotimehin et al., 2012). One visible benefit of ICT adoption is its ability to help improve customer service, which results in increased customer satisfaction (Wanyoike et al., 2012). However, ICT adoption by SME leaders becomes a challenge without access to financial resources to offset the cost of rapidly changing technology (Ghobakhloo et al., 2012; Stam & van Stel, 2011). Setting clear strategic business goals with the right workforce contributed to the success of the SMEs whose leaders participated in this study; thus, leaders of SMEs in Lagos, Nigeria, can use the findings in this study to address some of the challenges they face with growth, profitability, and global competitiveness.

Implications for Social Change

Findings from this study may facilitate an increase in ICT adoption by leaders of SMEs in Nigeria by addressing many of the challenges of ICT adoption within SMEs, providing insight into the benefits of ICT adoption, addressing inhibiting factors of ICT adoption, and providing recommendations for action. Based on the literature reviewed and the findings from this study, SMEs are an integral part of innovation and growth in a dynamic economy; thus, SMEs play a critical role in job creation, poverty alleviation, and

socioeconomic development in both developed and developing countries (Gagliardi, 2013; Ghobakhloo et al., 2012; Mazzarol, Clark, & Reboud, 2014; Tarutė & Gatautis, 2014). Adopting ICT will result in the success and growth of SMEs, which positively affects social change by creating jobs, alleviating poverty, and developing the local economy (Agwu & Murray, 2015; Apulu & Latham, 2011; Jones et al., 2014).

The ability of individuals and organizational leaders to adopt technology has significant implications for social change and economic growth. The research findings may lead to increased knowledge on the factors that influence ICT adoption by SME leaders in Nigeria through resolutions to the identified factors. These study findings may bridge the gap between the economies of developing and developed countries by helping leaders of SMEs in developing countries such as Nigeria create and sustain competitive advantage in the global market through adopting ICT. Therefore, these study findings may have positive implications for social change by serving as a source of vital information with which SME leaders can explore strategies for growth, profitability, and global competitiveness using ICT, resulting in job creation, poverty alleviation, and socioeconomic development.

Recommendations for Action

In this study, I identified two critical roles in the successful adoption and use of ICT: the role of SME leaders and the role of government. Due to the increasingly important role SMEs play in job creation, poverty alleviation, and the socioeconomic development of any region (Azman & Ali, 2015; Gagliardi, 2013; Ghobakhloo et al., 2012; Mazzarol, Clark, & Reboud, 2014; Tarutė & Gatautis, 2014), government leaders

have a significant role to play in ensuring SMEs have the resources needed to succeed. Leaders of SMEs also have a critical role to play in the successful adoption of ICT in their organizations.

Recommendations for SME Leaders

Leaders of SMEs must ensure the basis of decisions to adopt ICT within their organizations is sound business logic toward growth, efficiency, effectiveness, and competiveness (Agwu & Murray, 2015; Elbeltagi et al., 2013; Keller & Von der Gracht, 2014), with consideration for the socioeconomic role of SMEs in job creation, poverty reduction, and economic growth (Azman & Ali, 2015). Leaders of SMEs must take critical steps to support the adoption and use of ICT in their organizations by (a) identifying the appropriate types of technology that meet organizations' strategic objectives, (b) identifying the cost and source of financing for ICT projects, (c) hiring skilled ICT resources or train existing employees on using and supporting ICT projects, (d) determining the appropriate leadership style for ICT adoption and organizational success, and (e) providing ongoing training and support for new ICT projects as business needs evolve.

Recommendations for Government

The national climate for innovation, such as government policy, cost of doing business, and quality of telecommunication and other infrastructural facilities, is a key factor that influences SME growth (Mazzarol, Clark, Reboud, Gough et al., 2014). The adoption and use of ICT has helped leaders of organizations, particularly SMEs, achieve the strategic objectives of growth, efficiency, effectiveness, innovation, and global

competitiveness (Agwu & Murray, 2015; Consoli, 2012; Jones et al., 2014; Tarutė & Gatautis, 2014). Government leaders need to put laws and regulations in place that support SMEs, provide tax incentives for ICT adoption by SMEs, offer financial incentives and loan guarantees to SMEs toward ICT adoption, support ICT training centers, and take appropriate steps to promote and adopt ICT use within all government agencies. Most important, government leaders need to ensure leaders of SMEs have access to reliable infrastructure, including regular electricity, reliable telecommunication, good roads, and other infrastructural facilities that would help reduce the cost of doing business, particularly in Nigeria. I may publish the results of this study in scholarly journals, business journals, magazines, periodicals, or other conference or training materials for easy dissemination.

Recommendations for Further Study

I recommend researchers conduct further studies to explore other factors that influence SME leaders' adoption of ICT as a business strategy to increase profitability and achieve competitive advantage in the global market. Researchers should focus on addressing the limitations and delimitations of my study. The assumptions of truthfulness and unbiased responses from participants were a study limitation, as inaccurate information would invalidate the study outcome. Researchers should address this limitation by comparing the findings from other qualitative multiple case studies with the findings of my study. Further studies should extend the scope of this study to include other geographical areas in Nigeria. The outcome of such studies may extend the body of knowledge on the factors that affect ICT adoption in developing countries, particularly in

Nigeria. The findings of such studies will be a source of information for SME leaders, researchers, and government agencies to help address many of the challenges leaders of SMEs face, especially in Nigeria.

The impact of culture on ICT adoption, particularly by SME leaders, is one aspect of this study that needs further research. Individuals' attitude influences their decision to adopt, or their reluctance toward, technology (Elbeltagi et al., 2013). The culture or belief system of a group or society plays a role in the decisions made by individuals of that group (Erumban & De Jong, 2006). Culture influences the success of ICT projects at the organizational and the team levels (Lee et al., 2013). Culture and language can therefore be a significant factor in the decision to adopt and use ICT across nations (Al-Debei & Al-Lozi, 2012; Lee et al., 2013), which makes culture an important factor that requires further exploration.

Researchers can also explore the role of leadership style on ICT adoption by SME leaders in Nigeria. Leadership styles play a significant role in how organizational leaders or knowledge managers make strategic decisions, including on the use of ICT to create competitive advantage and sustainable growth (Consoli, 2012; Tovar, 2012). Leaders of organizations, particularly SMEs, should be aware of the leadership style adopted by their knowledge managers (Analoui et al., 2013). Studies exist on the factors that affect ICT adoption by SMEs in developing countries such as in Nigeria (Apulu & Latham, 2011; Awiagah et al., 2015; Ghobakhloo et al., 2012). However, researchers have largely ignored the role of ICT leadership style within SMEs. The lived experience of ICT decision makers may explain the beliefs and views of these decision makers toward IT

adoption (Tovar, 2012). Therefore, further research on the influence of this lived experience and the correlation between leadership style and ICT adoption may increase the understanding of how SME leaders make decisions to adopt ICT.

Reflections

My doctoral study has been a challenging journey, and I hope that with great challenges come greater rewards. This doctoral study has been a life lesson for me that has led me to broaden my scope of knowledge as I reviewed existing literature. In my field of information technology, I had made several assumptions on the role, benefits, and challenges of ICT adoption, but through this doctoral study, I gained the information needed to confirm or refute some of my assumptions. I had the opportunity to meet with leaders of SMEs and to interview them in person, which led to an increase in self-confidence and communication skills. Many of the participants were my peers in the ICT industry and they provided valuable insight into areas of the industry previously unknown or unclear to me.

I chose a research topic that reflected my professional experience and passion for ICT and the value technology offers in both business and personal life. I ensured my professional experience as an information technology specialist did not create any bias by using member checking during data collection to validate my data transcription and interpretation. I started this research study without any preconceived notion of the outcome or findings of the study and ensured the findings of this study reflected the views of the participants through repetitive interviews, transcription, and member checking until data saturation occurred. I ensured that participants did not feel

uncomfortable participating in the study and provided full disclosure in an informed consent form provided to and signed by each participant to ensure each participant fully understood the terms and conditions of participation.

With great mentorship and guidance by my Walden university chair, second committee member, university research reviewer, and the IRB, I successfully navigated the challenges and mostly unknown terrain of my doctoral study. My chair patiently mentored and encouraged me to endure and overcome challenges when I sometimes felt overwhelmed by the rigors of this study. It is with sincerity and utmost gratitude that I thank all who were a part of my doctoral study journey.

Summary and Study Conclusions

The purpose of this qualitative multiple case study was to explore how SME leaders in Lagos, Nigeria, use ICT adoption as a business strategy to increase profitability and compete globally. The aim of this study was to advance knowledge on the factors that affect ICT adoption in developing countries, particularly within SMEs in Nigeria. Many researchers have shown that the adoption of ICT, particularly by SME leaders, has led to increased growth opportunities for both large and small enterprises in developing and developed countries (Al-Debei & Al-Lozi, 2012; Ghobakhloo et al., 2012). I focused this study on the factors that affect ICT adoption by SME leaders as a business strategy to increase profitability and compete globally, particularly within SMEs in Lagos, Nigeria. I addressed the gap in existing literature regarding other factors such as the influence of culture on ICT adoption, cost of ICT implementation, available ICT skills, available

infrastructure, and ICT knowledge gap as the primary impeding factors of ICT adoption in Nigerian SMEs.

In Section 2, I restated the purpose of my study, described my role as the researcher, identified the study participants, expanded on my chosen research method and design, described the population and sampling methods, and elaborated on the data collection and analysis techniques used for this study. Section 2 included a discussion of my ethical research process, as well as a discussion on how I ensured the reliability and validity of this study. Section 2 also included the framework for data collection.

In Section 3, I provided an overview of the study, presented my findings, discussed the application of this study to professional practice, and included the implications for social change. I further offered recommendations for action based on my study findings, recommendations for further study, and reflections of my experience within the DBA doctoral study. Section 3 included the themes I identified as part of my data analysis, a discussion on how these themes related to my findings, and how my findings connected to the conceptual framework used as the research basis for this study.

References

Abiodun, O. O., Sunday, A. I., Chukwudi, O. A., Phalecs, J., & Blessing, O. (2013). Achieving cashless economy in Nigeria: The cloud computing approach and imperative of Nigeria's CBN for effective coordination. *International Journal of Multidisciplinary Sciences and Engineering*, *4*(6), 20-26. Retrieved from http://www.ijmse.org/

Agwu, E. M., & Murray, P. J. (2015). Empirical study of barriers to electronic commerce uptake by SMEs in developing economies. *International Journal of Innovation in the Digital Economy*, *6*(2), 1-19. doi:10.4018/ijide.2015040101

Al-Debei, M., & Al-Lozi, E. (2012). Implementations of ICT innovations: A comparative analysis in terms of challenges between developed and developing countries. *International Journal of Information, Business and Management 4*, 224-252. Retrieved from http://ijibm.elitehall.com/

Analoui, B. D., Doloriert, C. H., & Sambrook, S. (2013). Leadership and knowledge management in UK ICT organisations. *Journal of Management Development*, *32*, 4-17. doi:10.1108/02621711311286892

Apulu, I., & Ige, E. O. (2011). Are Nigeria SMEs effectively utilizing ICT? *International Journal of Business and Management, 6*(6), 207-214. doi:10.5539/ijbm.v6n6p207

Apulu, I., & Latham, A. (2011). The benefits of ICT adoption: An empirical study of Nigerian SMEs. *Proceedings of the European Conference on Information Management & Evaluation*, pp. 483-491. Retrieved from http://academic-conferences.org/2-proceedings.htm

Asare, S. D., Gopolang, B., & Mogotlhwane, O. (2012). Challenges facing SMEs in the adoption of ICT in B2B and B2C e-commerce: A comparative case study of Botswana and Ghana. *International Journal of Commerce and Management*, *22*, 272-285. doi:10.1108/10569211211284485

Ashurst, C., Cragg, P., & Herring, P. (2012). The role of IT competences in gaining value from e-business: An SME case study. *International Small Business Journal, 30*, 640-658. doi:10.1177/0266242610375703

Awiagah, R., Kang, J., & Lim, J. I. (2015). Factors affecting e-commerce adoption among SMEs in Ghana. *Information Development*. Advance online publication. doi:10.1177/0266666915571427

Azam, M. S., & Quaddus, M. (2013). Examining the influence of national culture on adoption and use of information and communication technology: A study from Bangladesh's SME perspective. *International Technology Management Review*, *3*, 116-126. doi:10.2991/itmr.2013.3.2.5

Azman, N., & Ali, M. (2015). The effect of finance, infrastructure and training on the performance of small and medium scale enterprises (SMEs). *International Journal of Business and Technopreneurship*, *5*, 421-452. doi:10.12691/jbms-4-1-1

Balaceanu, C., & Apostol, D. (2012). Development and eco-efficiency in the information society. *International Journal of Academic Research in Business and Social Sciences*, *2*(10), 443-451. Retrieved from http://www.hrmars.com/

Bressler, M. S., Bressler, L. A., & Bressler, M. (2011). A study of small business technology adoption and utilization. *Academy of Entrepreneurship Journal, 17*(2), 49-60. Retrieved from http://www.alliedacademies.org/index.php

Cardona, M., Kretschmer, T., & Strobel, T. (2013). ICT and productivity: Conclusions from the empirical literature. *Information Economics and Policy*, *25*(3), 109-125. doi:10.1016/j.infoecopol.2012.12.002

Caretta, M. A. (2015). Member checking: A feminist participatory analysis of the use of preliminary results pamphlets in cross-cultural, cross-language research. *Qualitative Research*. Advance online publication. doi:10.1177/1468794115606495

Charoensukmongkol, P., & Moqbel, M. (2014). Does investment in ICT curb or create more corruption? A cross-country analysis. *Public Organization Review*, *14*, 51-63. doi:10.1007/s11115-012-0205-8

Coelho, T. R., Segatto, A. P., & Frega, J. R. (2015). Analysing ICT and development from the perspective of the capabilities approach: A study in South Brazil. *Electronic Journal of Information Systems in Developing Countries*, *67*(2), 1-14. Retrieved from http://www.ejisdc.org

Coenen, M., Stamm, T. A., Stucki, G., & Cieza, A. (2012). Individual interviews and focus groups in patients with rheumatoid arthritis: A comparison of two qualitative methods. *Quality of Life Research: An International Journal of Quality of Life Aspects of Treatment, Care and Rehabilitation*, *21*, 359-370. doi:10.1007/s11136-011-9943-2

Consoli, D. (2012). Literature analysis on determinant factors and the impact of ICT in SMEs. *Procedia-Social and Behavioral Sciences*, *62*, 93-97. doi:10.1016/j.sbspro.2012.09.016

Davis, F. D. (1986). *A technology acceptance model for empirically testing new end-user information systems: Theory and results* (Doctoral dissertation). Retrieved from http://hdl.handle.net/1721.1/15192

Denzin, N. K. (2012). Triangulation 2.0. *Journal of Mixed Methods Research*, *6*(2), 80-88. doi:10.1177/1558689812437186

Dermol, V., & Tavčar, M. I. (2012). Global SMEs' strategy. *International Journal of Management, Knowledge and Learning*, *1*, 109-123. Retrieved from http://www.toknowpress.net/journals/ijmkl/

Doong, S. H., & Ho, S. (2012). The impact of ICT development on the global digital divide. *Electronic Commerce Research and Applications*, *11*, 518-533. doi:10.1016/j.elerap.2012.02.002

Draper, A., & Swift, J. A. (2012). Qualitative research in nutrition and dietetics: Data collection issues. *Journal of Human Nutrition and Dietetics, 24*, 3-12. doi:10.1111/j.1365-277X.2010.01117.x

Elbeltagi, I., Al Sharji, Y., Hardaker, G., & Elsetouhi, A. (2013). The role of the owner-manager in SMEs' adoption of information and communication technology in the United Arab Emirates. *Journal of Global Information Management*, *21*(2), 23-50. doi:10.4018/jgim.2013040102

Elo, S., Kaariainen, M., Kanste, O., Polkki, T., Utriainen, K., & Kyngas, H. (2014). Qualitative content analysis: A focus on trustworthiness. *SAGE Open*, *4*, 1-10. doi:10.1177/2158244014522633

Englander, M. (2012). The interview: Data collection in descriptive phenomenological human scientific research. *Journal of Phenomenological Psychology*, *43*, 13-35. doi:10.1163/156916212X632943

Erumban, A. A., & De Jong, S. B. (2006). Cross-country differences in ICT adoption: A consequence of culture? *Journal of World Business*, *41*, 302-314. doi:10.1016/j.jwb.2006.08.005

Frooman, J., Mendelson, M. B., & Murphy, J. K. (2012). Transformational and passive avoidant leadership as determinants of absenteeism. *Leadership & Organization Development Journal*, *33*, 447-463. doi:10.1108/01437731211241247

Gagliardi, D. (2013). Next generation entrepreneur: Innovation strategy through Web 2.0 technologies in SMEs. *Technology Analysis & Strategic Management*, *25*, 891-904. doi:10.1080/09537325.2013.823151

Gbandi, E. C., & Amissah, G. (2014). Financing options for small and medium enterprises (SMEs) in Nigeria. *European Scientific Journal, 10*, 327-340. Retrieved from http://eujournal.org/index.php/esj

Ghobakhloo, M., Hong, T. S., Sabouri, M. S., & Zulkifli, N. (2012). Strategies for successful information technology adoption in small and medium-sized enterprises. *Information*, *3*, 36-67. doi:10.3390/info3010036

Ghobakhloo, M., & Tang, S. H. (2013). The role of owner/manager in adoption of electronic commerce in small businesses: The case of developing countries. *Journal of Small Business and Enterprise Development*, *20*, 754-787. doi:10.1108/JSBED-12-2011-0037

Halpern, E., & Leite, L. C. (2015). The role of the researcher when using the socio-anthropological method to understand the phenomenon of alcoholism. *Open Journal of Social Sciences*, *3*, 76-81. doi:10.4236/jss.2015.35011

Hansen, N., Postmes, T., van der Vinne, N., & van Thiel, W. (2012). Information and communication technology and cultural change. *Social Psychology*, *43*(4), 222-231. doi:10.1027/1864-9335/a000123

Hassan, M. A., & Olaniran, S. O. (2011). Developing small business entrepreneurs through assistance institutions: The role of industrial development center, Oshogbo, Nigeria. *International Journal of Business and Management, 6*, 213-226. Retrieved from http://www.theijbm.com

Higon, D. A. (2012). The impact of ICT on innovation activities: Evidence for UK SMEs. *International Small Business Journal*, *30*, 684-699. doi:10.1177/0266242610374484

Houghton, C., Casey, D., Shaw, D., & Murphy, K. (2013). Rigour in qualitative case-study research. *Nurse Researcher*, *20*(4), 12-17. Retrieved from http://www.nursing-standard.co.uk/

Hudson, S. M., Newman, S. D., Hester, W. H., Magwood, G. S., Mueller, M., & Laken, M. A. (2014). Factors influencing hospital admissions and emergency department

visits among children with complex chronic conditions: A qualitative study of parents' and providers' perspectives. *Issues in Comprehensive Pediatric Nursing*, *37*, 61-80. doi:10.3109/01460862.2013.855844

International Telecommunication Union. (2014). *Key ICT indicators, 2005-2010*. Retrieved from http://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx

Jones, P., Beynon-Davies, P., Pickernell, D., & Packham, G. (2014). An exploration of the attitudes and strategic responses of sole-proprietor micro-enterprises in adopting ICT. *International Small Business Journal*, *32*, 285-306. doi:10.1177/0266242612461802

Keller, J., & Von der Gracht, H. A. (2014). The influence of information and communication technology (ICT) on future foresight processes: Results from a Delphi survey. *Technological Forecasting and Social Change*, *85*, 81-92. doi:10.1016/j.techfore.2013.07.010

Khalique, M., Shaari, J., & Hassan, A. (2011). Intellectual capital and its major components. *International Journal of Current Research*, *3*(6), 343-347. Retrieved from http://journalcra.com

Kipkulei, K. (2013). *Effects of information technology on reducing perishable waste in supermarkets* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3560427)

Kolb, S. M. (2012). Grounded theory and the constant comparative method: Valid research strategies for educators. *Journal of Emerging Trends in Educational*

Research and Policy Studies, *3*, 83-86. Retrieved from http://jeteraps.scholarlinkresearch.com/

Kuofie, M., Boateng, O., Yellen, R., & Garsombke, P. (2011). Mobile phone providers and economic development in Ghana. *Journal of Information Technology & Economic Development, 2*(2), 17-29. Retrieved from http://www.gsmi-ijgb.com

Leduc, S., Guilbert, L., & Vallery, G. (2015). Impact of ICTs on leadership practices: Representations and actions. *Leadership & Organization Development Journal*, *36*, 380-395. doi:10.1108/LODJ-07-2013-0090

Lee, S. G., Trimi, S., & Kim, C. (2013). The impact of cultural differences on technology adoption. *Journal of World Business*, *48*, 20-29. doi:10.1016/j.jwb.2012.06.003

Li, S. (2014). The impact of information and communication technology on relation-based governance systems. *Information Technology for Development*, *11*, 105-122. doi:10.1002/itdj.20010

MacGregor, R. C., & Kartiwi, M. (2010). Perception of barriers to e-commerce adoption in SMEs in a developed and developing country: A comparison between Australia and Indonesia. *Journal of Electronic Commerce in Organizations, 1*(8), 61-82. doi:10.4018/jeco.2010103004

Mazzarol, T., Clark, D. N., & Reboud, S. (2014). Strategy in action: Case studies of strategy, planning and innovation in Australian SMEs. *Small Enterprise Research, 21*, 54-71. Retrieved from http://www.tandfonline.com/toc/rser20/current

Mazzarol, T., Clark, D., Reboud, S., Gough, N., & Olson, P. (2014). Perceptions of innovation climate and the influence of others: A multi-country study of SMEs.

International Journal of Innovation Management, *18*, 1-24. doi:10.1142/S1363919614500091

Mbizi, R., Hove, L., Thondhlana, A., & Kakava, N. (2013). Innovation in SMEs: A review of its role to organisational performance and SMEs operations sustainability. *Interdisciplinary Journal of Contemporary Research in Business*, *4*(11), 370-389. Retrieved from http://www.ijcrb.webs.com

Mokaya, S. O. (2012). The adoption of information and communication technology by small enterprises in Thika municipality, Kenya. *International Journal of Business and Social Science*, *3*(13), 172-177. Retrieved from http://ijbssnet.com/

Mukhtar, S. A. (2013). Small and medium enterprises in Nigeria: Problems and prospects. *International Journal of Management Research and Reviews 3*, 3857-3860. Retrieved from http://www.ijmrr.com

Mustafa, H. H. (2015). The role of ICT management to achieve organizational innovation. *International Journal of Organizational Innovation*, *7*(4), 48-56. Retrieved from http://www.ijoi-online.org/

National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research. (1979). *The Belmont report: Ethical principles and guidelines for the protection of human subjects of research*. Retrieved from http://www.hhs.gov/ohrp/humansubjects/guidance/belmont.html

Nelson, I. A., London, R. A., & Strobel, K. R. (2015). Reinventing the role of the university researcher. *Educational Researcher*, *44*, 17-26. doi:10.3102/0013189X15570387

Nguyen, Q. A., Mort, G. S., & D'Souza, C. (2015). Vietnam in transition: SMEs and the necessitating environment for entrepreneurship development. *Entrepreneurship & Regional Development*, *27*(3-4), 1-27. doi:10.1080/08985626.2015.1015457

Nováková, K. (2015). Ethics and ethic codex in the teaching process. *Procedia - Social and Behavioral Sciences*, *174*, 2390-2394. doi:10.1016/j.sbspro.2015.01.906

Oates, C. J., & McDonald, S. (2014). The researcher role in the attitude-behaviour gap. *Annals of Tourism Research*, *46*, 168-170. doi:10.1016/j.annals.2014.01.003

Olise, M. C., Anigbogu, T. U., & Okoli, M. I. (2014). Determinants of ICT adoption for improved SME's performance in Anambra. *American International Journal of Contemporary Research*, *4*(7), 163-176. Retrieved from http://www.aijcrnet.com/

Osotimehin, K. O., Jegede, C. A., Akinlabi, B. H., & Olajide, O. T. (2012). An evaluation of the challenges and prospects of micro and small scale enterprises development in Nigeria. *American International Journal of Contemporary Research*, *2*(4), 174-185. Retrieved from http://www.aijcrnet.com/

Osubor, V. O., & Chiemeke, S. C. (2015). The impacts of information culture on e-learning innovation adoption in learning institutions in Nigeria. *African Journal of Computing and ICT*, *8*, 17-26. Retrieved from http://www.ajocict.net

Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology, 63*, 539-569. Retrieved from http://www.annualreviews.org/toc/psych/63/1

Rahayu, R., & Day, J. (2015). Determinant factors of e-commerce adoption by SMEs in developing country: Evidence from Indonesia. *Procedia - Social and Behavioral Sciences*, *195*, 142-150. doi:10.1016/j.sbspro.2015.06.423

Rapport, F., Clement, C., Doel, M. A., & Hutchings, H. A. (2015). Qualitative research and its methods in epilepsy: Contributing to an understanding of patients' lived experiences of the disease. *Epilepsy & Behavior*, *45*, 94-100. doi:10.1016/j.yebeh.2015.01.040

Roberts, L. D. (2015). Ethical issues in conducting qualitative research in online communities. *Qualitative Research in Psychology*, *12*, 314-325. doi:10.1080/14780887.2015.1008909

Robinson, O. C. (2014). Sampling in interview-based qualitative research: A theoretical and practical guide. *Qualitative Research in Psychology*, *11*, 25-41. doi:10.1080/14780887.2013.801543

Sakiru, O. K., D'Silva, J. L., Othman, J., DaudSilong, A., & Busayo, A. T. (2013). Leadership styles and job satisfaction among employees in small and medium enterprises. *International Journal of Business and Management, 8*(13), 34-41. doi:10.5539/ijbm.v8n13p34

Sawhney, A., Mukherjee, K. K., Rahimian, F. P., & Goulding, J. S. (2014). Scenario thinking approach for leveraging ICT to support SMEs in the Indian construction industry. *Procedia Engineering*, *85*, 446-453. doi:10.1016/j.proeng.2014.10.571

Schaper, M. T. (2015). Competing in the online marketplace: Contemporary issues for SMEs and their regulators. *Small Enterprise Research*, *22*, 69-78. doi:10.1080/13215906.2015.1017075

Seyal, A. H. (2015). Examining the role of transformational leadership in technology adoption : Evidence from Bruneian technical & vocational establishments (TVE). *Journal of Education and Practice*, *6*(8), 32-44. Retrieved from http://www.iiste.org

Simon, M. K., & Goes, J. (2012). *Dissertation and scholarly research: Recipes for success* (2013 ed.). Retrieved from https://books.google.com/books?id =_n9LkwEACAAJ

Singh, G., Manna, M. S., & Bhasin, G. S. (2013). A Study of Impact of ERP and Cloud Computing In Business Enterprises. *Proceedings of the World Congress on Engineering & Computer Science*, *I*(September), 1–4. Retrieved from http://www.iaeng.org

Stam, E., & van Stel, A. (2011, September). Types of entrepreneurship and economic growth. *Entrepreneurship, Innovation, and Economic Development*, 78-95. doi:10.1093/acprof:oso/9780199596515.003.0004

Stentz, J. E., Plano Clark, V. L., & Matkin, G. S. (2012). Applying mixed methods to leadership research: A review of current practices. *Leadership Quarterly*, *23*, 1173-1183. doi:10.1016/j.leaqua.2012.10.001

Tambunan, T. T. H. (2011). Development of small and medium enterprises in a developing country: The Indonesian case. *Journal of Enterprising Communities:*

People and Places in the Global Economy, *5*, 68-82. doi:10.1108/17506201111119626

Tarutė, A., & Gatautis, R. (2014). ICT Impact on SMEs performance. *Procedia - Social and Behavioral Sciences*, *110*, 1218-1225. doi:10.1016/j.sbspro.2013.12.968

Taylor, P. (2013). The effect of entrepreneurial orientation on the internationalization of SMEs in developing countries. *African Journal of Business Management*, *7*, 1927-1937. doi:10.5897/AJBM2013.1633

Terzi, N. (2011). The impact of e-commerce on international trade and employment. *Procedia - Social and Behavioral Sciences*, *24*, 745-753. doi:10.1016/j.sbspro.2011.09.010

Thomas, N. K. (2014). The role of SMEs in employment creation and economic growth in selected countries. *International Journal of Education and Research*, *2*(12), 461-472. Retrieved from http://www.ijern.com/

Tobora, O. O. (2014). Challenges faced by entrepreneurs and the performance of small and medium scale enterprises (SMEs) in Nigeria: An intellectual capital issue. *International Letters of Social and Humanistic Sciences*, *42*, 32-40. doi:10.18052/www.scipress.com/ILSHS.42.32

Toft, M. B., Schuitema, G., & Thøgersen, J. (2014). Responsible technology acceptance: Model development and application to consumer acceptance of Smart Grid technology. *Applied Energy*, *134*, 392-400. doi:10.1016/j.apenergy.2014.08.048

Tovar, A. (2012). *SME technology attitudes and beliefs: An exploratory study of information technology adoption behavior* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3531386)

Van Stel, A., De Vries, N., & De Kok, J. (2014, May). The effect of SME productivity increases on large firm productivity in the EU-27. Retrieved from http://www.uni-klu.ac.at/sozio/downloads/Van_Stel_De_Vries_De_Kok_Klagenfurt_ECFED_2014.pdf

Venkatesh, V., Bala, H., & Sykes, T. A. (2010). Impacts of information and communication technology implementations on employees' jobs in service organizations in India: A multi-method longitudinal field study. *Production and Operations Management*, *19*, 591-613. doi:10.1111/j.1937-5956.2010.01148.x

Vermeulen, M., Van Acker, F., Kreijns, K., & van Buuren, H. (2014). Does transformational leadership encourage teachers' use of digital learning materials. *Educational Management Administration & Leadership*, 1-20. doi:10.1177/1741143214535749

Wang, K. Y., Hermens, A., Huang, K.-P., & Chelliah, J. (2015). Entrepreneurial orientation and organizational learning on SMEs' innovation. *International Journal of Organizational Innovation*, *7*(4), 71-81. Retrieved from http://www.ijoi-online.org/

Wanyoike, D. M., Mukulu, E., & Waititu, A. G. (2012). ICT attributes as determinants of e-commerce adoption by formal small enterprises in urban Kenya. *International*

Journal of Business and Social Science, 3(23), 65-74. Retrieved from http://ijbssnet.com/journals/

Wunnava, S. (2015). Mobile commerce usage: Application of theory of reasoned action (TRA) and technology acceptance model (TAM). *World Journal of Social Sciences*, *5*(2), 41-50. Retrieved from http://www.wbiaus.org/wjss_new.html

Yeh, H. (2015). Effects of ICT's innovative applications on brand image and customer's purchase intention. *International Journal of Organizational Innovation*, *7*(4), 31-48. Retrieved from http://www.ijoi-online.org/

Yin, R. K. (2013). *Case study research: Design and methods*. Thousand Oaks, CA: Sage.

Zhang, X., Ma, X., & Wang, Y. (2014). How can emerging market small and medium-sized enterprises maximise internationalisation benefits? The moderating effect of organisational flexibility. *International Small Business Journal*, *32*, 667-692. doi:10.1177/0266242613503356

Appendix A: Consent Form for Participants Over 18

You are invited to take part in a research study of the factors influencing adoption of information and communication technology (ICT) by small and medium enterprise (SME) leaders in Lagos, Nigeria as a strategy to gain competitive advantage in the global market. The researcher is inviting ICT leaders and owners of SMEs in Lagos, Nigeria, to be in the study. This form is part of a process called "informed consent" to allow you to understand this study before deciding whether to take part.

This study is being conducted by a researcher named Kessington Okundaye, who is a doctoral student at Walden University.

Background Information:
The purpose of this study is to explore how SME leaders in Lagos, Nigeria, use ICT adoption as a business strategy to increase profitability and compete in the global market

Procedures:
If you agree to be in this study, you will be asked to:

- Provide information about your professional experience
- Answer questions about your role within the organization
- Provide non-confidential information about your organizations
- Provide information about what factors influence ICT adoption decision with your organization
- Sit with the interviewer for a duration of approximately 30 minutes. This interview will be audio recorded.
- Provide the interviewer access to non-confidential documentation that may assist with the research study
- Review the researcher's transcribed interview data, a process known as member checking, which involves the following steps:
    - The researcher will collect research data via interviews with participants.
    - The researcher will transcribe and interpret interview data
    - The researcher will provide transcribed data to participants to clarify and verify accurate interpretation
    - This process of interview and member checking will continue until no new information is available to ensure data saturation.
    - A duration of approximately 30 minutes will be required for member checking.

Here are some sample questions:

1. Please tell me a little about your background, particularly your professional experience.
2. What is your view on the role of ICT in SMEs for an emerging economy, particularly in Nigeria?
3. Why are ICT leaders within SMEs in developing countries reluctant to invest in ICT?

Voluntary Nature of the Study:
This study is voluntary. Everyone will respect your decision of whether or not you choose to be in the study. No one will treat you differently if you decide not to be in the study. If you decide to join the study now, you can still change your mind later. You may stop at any time.

No one will penalize you if you decide not to participate, decline or discontinue participation in the study. However, if you decide to join the study now, you are at liberty to opt out if you change your mind during the study. You may choose to stop at any time if you feel stressed during the study, and you may ignore any question(s) that you are not comfortable answering or feel are too confidential.

Risks and Benefits of Being in the Study:
Being in this type of study involves some risk of the minor discomforts that can be encountered in daily life, such as fatigue, stress or becoming upset. Being in this study would not pose risk to your safety or wellbeing.

The significance of the study finding is to bridge the gap between the economies of developing and developed countries by helping leaders of SMEs in developing countries such as Nigeria create and sustain competitive advantage in the global market. The research finding may help further knowledge on the factors that influence ICT adoption by SME leaders in Nigeria and would offer possible resolutions to the identified factors. The success of ICT implementation within SMEs in Nigeria would therefore trigger economic growth for both the organization as well as in the country, with possible influence on other sub-Saharan countries. Information and communication technology leaders within SMEs, as well as government policy makers, could use the study finding to plan for ICT adoption in both developed and developing countries.

Payment:
No payment will be made to participants for this research study

Privacy:
Any information you provide will be kept confidential. The researcher will not use your personal information for any purposes outside of this research project. Also, the researcher will not include your name or anything else that could identify you in the study reports. Data will be kept secure by password protected and encrypted disk drives. Data will be kept for a period of at least 5 years, as required by the university.

Contacts and Questions:
You may ask any questions you have now. Or if you have questions later, you may contact the researcher via phone [redacted] or email kessington.okundaye@waldenu.edu If you want to talk privately about your rights as a participant, you can call Dr. Leilani Endicott. She is the Walden University representative who can discuss this with you. Her phone number is 001-612-312-1210. Walden University's approval number for this study is ***02-23-16-0382702*** and it expires on ***February 22, 2017.***

The researcher will give you a copy of this form to keep

Statement of Consent:

I have read the above information and I feel I understand the study well enough to make a decision about my involvement. **By replying to this email with the words 'I Consent' or signing below, I understand that I am agreeing to the terms described above.**

Printed Name of Participant _____

Date of consent _____

Participant's Signature _____

Researcher's Signature _____

Appendix B: Interview Question/Data Collection Instrument

This section consists of interview question that aligns with my doctoral research study. The response from these questions would provide insight on how SME leaders in Lagos, Nigeria, use ICT adoption as a business strategy to increase profitability and compete in the global market.

1. What business strategies contributed to your success as a SME?
2. What is your view on the role of ICT in SMEs, in Nigeria?
3. In what ways did ICT adoption contribute to your SME's profitability?
4. How has ICT adoption helped your organization compete globally?
5. What factors influenced your decision to adopt ICT in Nigeria?
6. In your opinion, how significant is the influence of culture or social belief system in relation to your ICT adoption decision?
7. Are there any other factors that contributed to your decision as a SME leader, on ICT adoption in Lagos, Nigeria?
8. What role can government and other private institutions play in promoting ICT adoption as a business strategy within SMEs in Nigeria?

Appendix C: Letter of Cooperation From a Research Partner

Community Research Partner Name
Contact Information

Date

Dear Kessington Okundaye,

Based on my review of your research proposal, I give permission for you to conduct the study entitled **Adoption of Information and Communication Technology in Nigerian Small to Medium-Size Enterprises** within the ***[Insert Name of Community Partner]***. As part of this study, I authorize you to conduct interviews, member checking, and results dissemination activities with up to four leaders of this organization. Individuals' participation will be voluntary and at their own discretion.

We understand that our organization's responsibilities include: granting access to four leader of the organization at a time convenient for each participant, not to exceed a total of 60 minutes per participant during regular business or non-work hours (including interview and member checking activities). We will provide access to a private room for the period of the interview and will not be supervising the activities of the participants or researcher during the interview period. We reserve the right to withdraw from the study at any time if our circumstances change.

I confirm that I am authorized to approve research in this setting and that this plan complies with the organization's policies.

I understand that the data collected will remain entirely confidential and may not be provided to anyone outside of the student's supervising faculty/staff without permission from the Walden University IRB.

Sincerely,
Authorization Official
Contact Information

Walden University policy on electronic signatures: An electronic signature is just as valid as a written signature as long as both parties have agreed to conduct the transaction electronically. Electronic signatures are regulated by the Uniform Electronic Transactions Act. Electronic signatures are only valid when the signer is either (a) the sender of the email, or (b) copied on the email containing the signed document. Legally an "electronic signature" can be the person's typed name, their email address, or any other identifying marker. Walden University staff verify any electronic signatures that do not originate from a password-protected source (i.e., an email address officially on file with Walden).