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ICT as a Strategy for Sustainable Small and Medium Enterprises in Nigeria

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Doctor of Public Administration

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Department of History and Government

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ICT as a Strategy for Sustainable Small and Medium Enterprises in Nigeria

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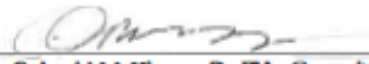
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ABSTRACT

Purpose. This phenomenological qualitative study investigated the information communication technology (ICT) strategies that were instrumental to the success and sustainability of leading small and medium-sized enterprises (SMEs) in Nigeria. Sustainability entails profitability, growth, innovations, and business evolutions that ultimately lead to the survival of SMEs. The potential implications of this study include effecting positive social change through increased utilization of ICT tools such as e-commerce and internet technologies by SMEs. This will subsequently increase their chances of survival and elevate their innovative capacities to improve business operations and profitability. In addition, the study may serve as a resource for policy makers in government to formulate policies that will promote the adoption of ICT by Nigerian SME owners.

Theoretical Framework. The study was hinged on the resource-based view (RBV) theoretical framework. The RBV theory is a model that examines resources as key to superior firm performance and sustained growth. The framework also maintains that a firm's resources must be valuable, rare, imitable, and heterogeneously distributed across the organization to achieve a competitive advantage. The study explored literature and arguments that posit that ICT can be transformed to possess those qualities despite its seeming commonness.

Methodology. The participants for this study consisted of executive-level SME leaders who have the authority to approve ICT implementation within their respective organizations. Semistructured interviews were conducted with these participants using open-ended questions. The purpose of the questions was to elicit responses derived from

the participants' actual experiences with incorporating ICT as a foremost strategy for sustainability. This methodology was in line with the phenomenological research approach, which draws upon the subjective lived experiences of participants to provide a detailed account of specific variables.

Keywords: SMEs, ICT, business survival, profitability, strategies.

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DEDICATION

This study is dedicated to my son Chikubem Hromiwaojo David Kwene, aka Papi/Kuku/PonPo/Kuku Bear. It is so amazing how at such a young age you constantly push and inspire me, cheer for me, and take pride in my success. You would say “Mama, did you get an A+?,” “Mama, you look tired; you have to sleep.” You, my math prodigy and “Diokpala m.”, are a blessing!

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“Frame kisses ... ”

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CHAPTER 1: INTRODUCTION

Background

Small and medium-sized enterprises (SMEs) are the lifeblood of the socioeconomic development of many countries, especially in Sub-Saharan Africa. They represent a critical source of dynamic economic growth in developed and fledgling/emerging markets. The vital role they play in the economic success story of any nation inspires and activates discussions and studies on how to guarantee their continued viability and success. Globalization, disruptive innovations, unprecedented information gathering, and processing revolutions control modern-day business and economic transactions. Therefore, SMEs must embrace information communication technology (ICT) to ensure growth and survival.

Many studies have affirmed ICT as a crucial factor in SMEs' growth, profitability, and competitive edge. ICT is intrinsically embedded in the values and processes of today's business firms because of its potential to actualize competitive advantage and corporate performance. These positive outcomes have increasingly encouraged many SMEs and start-ups to adopt ICT as a strategic and essential tool for business sustainability (Apulu et al., 2011). However, the adoption rate of ICT among SMEs in Nigeria and other developing countries remains excruciatingly poor, leading to the high rate of closure and liquidation of most SMEs in these countries. The resultant effect is negative economic indices, high inflation, unemployment, and an increased reduction in the standard of living.

The World Bank Group (2020) posited that the recent conflicts, pandemics, and other associated issues instigated the most severe global recession in any postwar period.

This is because SMEs have been mainly affected, accounting for most of the business in almost all countries. Because they are a vital source of poverty amelioration for nations and their citizens through job creation and tax contribution, any negative impact on their operations bodes ill for economic growth. There are approximately 125 million SMEs worldwide, and 89 million are in developing countries (Organization for Economic Cooperation and Development [OECD], 2020). The SME sector creates seven out of 10 jobs in the formal sector. Therefore, it is not surprising that the development of this sector remains a priority for the governments of emerging markets in Africa, Asia, and the Middle East (The World Bank Group, 2020).

Drucker (2009) stated that small enterprises represent one of the primary catalysts of development because of their crucial roles in achieving the fundamental economic goals of any national economy. Consequently, SMEs have become the backbone of social-economic progress. This statement by Drucker is especially true for a developing country such as Nigeria because the SME sector is the mainstay of developing economies and essential to employment, economics, and export growth. The Nigerian National Bureau of Statistics (NBS, n.d.) has supported this assertion by reporting that Nigeria's 17.4 million SMEs account for approximately 50% of industrial jobs and nearly 90% of the manufacturing sector.

There is no better time than now for SMEs to cash in on the advantages of ICT. According to the latest report by International Telecommunications Union (ITU, 2022), after the peak of the COVID-19 pandemic in 2021, there were approximately 782 million new internet users worldwide. This number brought the worldwide internet users to 4.9 billion from 4.1 billion in 2019. A more straightforward analysis means that

approximately 63% of the world's population uses the internet for different purposes. This usage ranges from social, business, educational, financial, medical, and so forth. Despite this impressive record, there are still 2.9 billion people worldwide without internet access, and the ITU report states that 96% of this number reside in developing countries. The internet is one of the most common ICT tools used by SMEs. This quantum leap in users represents a massive opportunity for increased marketing communications, customer service and engagement, new markets, and frontiers.

Notwithstanding the negative impacts, the global lockdowns unlocked technological and innovative skills, strategies, and opportunities unprecedented in the 21st century, hence the rise in internet users and digital access. The OECD (2020) emphasizes that some of the SMEs that survived invested in ICT. Invariably, SMEs' ability to weather the natural and financial disasters of the modern age, and compete in today's highly innovative world, is hinged on ICT (Aifuwa et al., 2020).

ICT is an extension of information technology (IT). Although there is no universal definition for the term, it generally refers to technology that supports, enhances, and actualizes any activity related to information (Owusu-ansah, 2014). Owusu-ansah (2014) explained that these activities may include storing, retrieving, receiving, and manipulating data. ICT can also be seen as any technology that provides access to information through telecommunications infrastructure, such as the internet, wireless networks, mobile phones, and other communication mediums (Al-Debei & Al-Lozi, 2012). The term *ICT infrastructure* "encompasses all the devices, networks, protocols and procedures" that are used in the telecoms or IT fields to enable information engagement among different stakeholders (Bwalya, 2011, p. 21).

Broadband internet, mobile telecommunication, and other ICT infrastructures are synonymous with today's world and have become essential requirements for any successful business entity. The crucial role of ICT in the economic development of countries also explains why the adoption of ICT for business growth has significantly increased within developed and developing nations (Bankole et al., 2013). According to Alemneh and Hastings (2006), creating a national ICT infrastructure has become vital to most national strategic development plans. The large-scale investment in ICT across the African continent demonstrates this position, which has transformed the ICT sector, especially telecommunications, from a luxury for the privileged few to an accessible and affordable service used in villages and cities alike (Bwalya, 2011).

However, although the ICT for business growth and development discourse remains pervasive, the failure rate of SMEs remains high, especially in developing nations. This situation can be attributable to SME leaders being ill-equipped with the ICT skills and strategies to leapfrog their firms' profitability and growth while guaranteeing success and business continuity. Several studies have detailed the importance of ICT to the development of SMEs but have ignored the need to prioritize it at the forefront of business strategy. This lack of emphasis underscores the position of ICT in driving innovation or the need for SMEs to be updated with the latest ICT infrastructure that can translate their growth from a snail's pace to impressive heights. This study explored how SME owners can leverage ICT as a core business strategy that will elevate their current position with the added assurance of business survival.

Statement of the Research Problem

According to a survey conducted by Price Water Coopers (2020), in Nigeria, SMEs contribute 48% of the national GDP and account for 96% of businesses and 84% of employment. This statement is a synopsis of one of the largest economies in the African region, underscoring the importance of SMEs to overall national growth and development. Campbell and Park (2017) supported this report by stating that SMEs are the engine of socioeconomic development. The unfortunate caveat is that the high failure rate of SMEs is a significant constraint on global economic growth because about 50% of SMEs fail within the first 5 years of operation creation (Campbell & Park, 2017; Gray & Saunders, 2016). This situation is also localized in Nigeria. Except for the leading SMEs, most microbusinesses in Nigeria are encumbered with challenges in customer retention, profitability, funding, foreign competition, security challenges, infrastructure and regulatory bottlenecks, and other related factors that constantly threaten their survival (Small and Medium Enterprises Development Agency of Nigeria [SMEDAN], n.d.). These challenges could be attributed to the fact that most SMEs do not use ICTs as a strategic tool for growth and sustainability.

Despite the increase in business activities worldwide after the prolonged lull precipitated by the COVID-19 pandemic, the current inflation in developed and developing nations has brought on fears of a looming recession (Reinhart & von Luckner, 2022). Unemployment and associated issues like poverty, insecurity, and inequality continue to skyrocket and remain unabated. The situation is especially dire in developing countries because most SMEs have a short life span. The unfavorable condition of these small and medium-sized businesses has been further compounded because of the

increasing inflation rate exacerbated by the supply and demand imbalance and the ongoing Ukraine/Russia war (Duggan, 2022; International Chamber of Commerce, 2022). Nigeria's economic recovery rate is much slower than in the Western world. According to the Central Bank of Nigeria (CBN, 2022), the current inflation rate in Nigeria is 16%, increasing from 11% in 2020. The cost-of-living index in the country is 52.65%, which is lower than in most developed countries. The CBN (2022) also reports that GDP per capita has reduced from \$2,300 in 2020 to \$2,091 in 2022 while unemployment has soared to 35% from 21.5% in 2020. These are grim statistics and a distressing time for Nigeria. As identified in the preceding paragraphs, small and medium-sized businesses are the foundation of any nation's economy, and resuscitation of these businesses will quicken the country's economic recovery.

Therefore, this study was concerned with the general business problem of the high failure rate of SMEs in Nigeria and the specific business problem of the lack of awareness of ICT strategies needed to ensure the growth and sustainability of Nigerian SME businesses. Many leaders of SMEs in the country fail to incorporate ICT as a critical part of their strategic business plan, resulting in the underutilization of ICT to guarantee viability. This lack of ICT inculcation elevates the constraints and challenges faced by these firms and limits their ability to increase the potential of their business and identify their unique selling points and competitive advantages in regular times and during any significant crisis (Matthews, 2007).

Purpose Statement

This phenomenological qualitative study aimed to determine how successful small and medium- sized enterprises (SMEs) in Nigeria employed ICT as a strategic

antidote for business sustainability. Leaders of these SMEs were interviewed to ascertain the ICT strategies that have guaranteed the sustainability of their firms. The knowledge deduced from these leaders will be a valuable resource for current and potential Nigerian business owners with long-term implications for reduced reliance on government employment and increased entrepreneurship. This was done by helpful suggestions by participants on how Nigerian SMEs can enhance their ability to compete and extend their business tentacles globally and to other frontier markets. Furthermore, the study investigated the factors that obstruct the adoption of ICT strategies and proffered information on mitigating these obstacles.

The researcher also hopes to generate and enhance discussions on using ICT as a proactive arsenal for SMEs in dealing with the constant challenges and innovations of today's business world. Consequently, this study may serve as a resource for policy makers in government and instigate the formulation policies that will promote the adoption of ICT by Nigerian SME owners. ICT is a vital resource for SMEs; therefore, these objectives were achieved by employing the resource-based view (RBV) theory as the theoretical framework for this study.

Research Questions

The following are the research questions that guided the study:

1. How has ICT improved the business operations of SME businesses in Nigeria?
2. What are the major ICT strategies SME leaders utilize to grow and sustain their businesses for 5 years or more?
3. What are the perceived barriers to adopting ICT strategies among Nigerian SMEs?

Significance of the Problem

The World Bank (2022) estimates that by 2030, over 600 million jobs will be needed by developing countries as a result of anticipated population growth. Nigeria is the most populated country in Africa, with over 200 million, and according to Statista (2022), youths under age 19 make up half of this population. The field of public administration is inundated with increased calls for smaller governments so that public administrators can focus on governance, enhancing the pillar of legitimacy. Furthermore, there is a persistent shrinking of revenue from oil, Nigeria's principal resource. These factors imply that the private sector, specifically SMEs, will bear the brunt of future employment challenges. Therefore, the growth, survival, and overall sustainability of this class of business are crucial issues that demand constant research and study, now more than ever, especially with the rapidly changing face and dynamism of the business world.

Apart from expanding the knowledge of existing literature, the study is also significant for policy formulators and drivers for policy frameworks that will boost ICT usage among SMEs. Through this study, understanding the importance of ICT in the business sustainability of small and medium businesses will instigate the structuring of these policies to provide ICT strategies for the challenges encountered in the sector. Although there have been related studies on this topic, this study is notable because it will fill the gaps in the other studies. One crucial issue devoid in other research on this topic is exploring such topics during and after a major pandemic. Analyzing the state of various national economies adversely affected by the COVID-19 pandemic and examining its linkage to SMEs and ICT is uncommon in academic research.

ICT is the future. Therefore, the strategic intents of small and medium-sized firms must be anchored on using ICT infrastructures to successfully tackle future growth and survival challenges of SMEs in Nigeria. The desired outcomes include improved competency and efficiency in market communications, business operations, more innovative business models, and workforce (Apulu & Latham, 2011). Doing this, to a large extent, will guarantee the actualization of sustainability objectives.

Definitions

This study adopted the following definitions as the operational context for some common words and phrases.

Business Resources. A firm's resources are factors or inputs, which can be tangible and intangible, owned by the firm. Examples include financial or physical assets (property, plant, and equipment), competence that can be traded (patents and licenses), and human capital (Barney, 1991).

Business Survival. Business survival is the maintenance of business in the marketplace with economic and financial progress over an extended period. Business survival has been contextualized to mean a firm's ability to sustain activities and performance beyond 5 years (Hyder & Lussier, 2016).

Business Sustainability. The operational definition for this term in relation to the study deals with the ability of a business enterprise to consistently maintain and sometimes surpass growth (Hyder & Lussier, 2016).

Broadband. Broadband transmits vast bandwidth data over a high-speed internet connection (Nigerian Communications Commission [NCC], 2022).

Information Communication Technology (ICT). ICT includes all products that can store and replicate data and entails the integration of telecommunications (Lyver & Lu, 2018).

ICT Infrastructure. Information and communication technology infrastructure now encompasses digital telephone networks, mobile phones, internet capability, internet servers, fixed broadband, and other related technologies (Czernich et al., 2011).

Small and Medium-Sized Enterprises (SMEs). SMEs are nonsubsidiary, independent firms that employ from 10 to 100 employees. This is the applicable definition in Nigeria (SMEDAN, n.d.) though this number varies across countries (OECD, 2017).

Strategy. A detailed outline of a company's plans and decisions that aids in achieving goals and objectives (Goodstein et al., 1993).

Organization of the Study

Chapter 1 of the study contained the introduction and background and provided a summarized version of the purpose of the study. The chapter also presented the research questions that guided the study and a statement of the research problem and analyzed why this problem is significant. The terms used repeatedly in the study were also clearly defined. Chapter 2 discusses the literature from other studies. Chapter 3 focuses on the methodology. Chapter 4 presents the results and findings. Chapter 5 concludes with recommendations.

CHAPTER 2: REVIEW OF THE LITERATURE

A digitalized world, The Digital Era, and the Fourth Industrial Revolution are simple, common, but profound phrases that signify the current state of the world, especially relating to business and work operations, socialization, and virtually every aspect of human existence. Over a decade, Africa has recorded remarkable strides in digitalization, and many countries have embraced the process as a deliberate and strategic process for rapid socioeconomic development (Ndemo, 2021). Paradoxically, an earlier study by The World Bank (n.d.) in 2020 revealed that although mobile and internet penetration levels in Africa remained unimpressive compared to other countries, the continent has recorded an unprecedented connection status.

Several studies have established the link between ICT and development as an economic driver (Igwe et al., 2018). The research conducted by Röllner and Waverman (2001) was particularly elucidating. It involved more than 21 member countries of the OECD over a time of 20 years. Using a quantitative research method, Röllner and Waverman performed a correlation analysis on relevant data collected from all countries. They discovered a definite connection between the level of ICT infrastructure in a country and its economic growth rate. The study showed that “the economic returns to ICT infrastructure investment are much greater than the returns on any other investment itself” (Röllner & Waverman, 2001, p. 909). This was because ICT traverses all sectors and acts as a backbone for enhancing other industries, such as agriculture, finance, defense, education, tourism, health, transportation, and so forth. In essence, ICT has become a tactical blueprint that helps countries maintain competitive advantages at the regional and international levels. The relationship between digitization and its economic

impact on productivity, manufacturing, and job creation has been validated by several studies that have equated economic growth to ICT development (Gbandi & Amissah, 2014; Hassan & Olaniran, 2011).

These reasons explain why governments of monolithic economies have utilized the resources of ICT to drive their economic diversification goals actively. Nigeria is one such country and still suffers from Dutch disease after decades of heavy dependence on oil as its primary source of revenue. The country's other economic sectors have been developmentally malnourished because of the concentration on the oil and gas sector and the immense revenues that were derived from it. However, the peak days of the oil and gas sector as the primary contributor to Nigeria's GDP with over 50% revenue are long gone, and the industry has shelled out a meager contribution of less than 10% in the last decade (NBS, n.d.). The NBS (n.d.) reports that because of the persistent sharp decline in oil prices and the effects of the 2020 global shutdown, the industry accounted for 7.8%, leaving the bulk of the work (92.2%) to the other sectors. Unfortunately, the contribution of the different sectors is still below par because of decades-long negligence, leaving Nigeria with dismal GDP growth of 1.8% in 2020 and an inability to meet its economic projections since then (CBN, 2022). Essentially, it has rendered its foremost economic policy, the Economic Recovery and Growth Plan, as nothing more than a well-crafted and in-actionable document.

Several countries' current drive for energy independence and a shift toward renewable energy indicates a very low tolerance for oil and the risk of dwindling resources by oil-producing countries such as Nigeria. The principal mitigative action is increased diversification to reduce the danger of an economy becoming vulnerable to the

risks and perils of a particular sector. Hence, there are intensified efforts by the Nigerian federal government to search for a viable complement to the floundering oil sector by exploring the expansion of nonoil sectors such as commerce and trade (Abiodun & Adeyemi, 2013). Several studies have indicated that the nonoil sectors vastly enhance the nations' employment and economic growth (Stoica et al., 2015).

Empirical research has shown that entrepreneurship is the catalytic force behind the success of any country's economic development and diversification objectives (Marques et al., 2013). The sustainability of small and medium-sized businesses in Nigeria encourages reduced reliance on imported goods and services considering the ongoing inflation and depreciation of the naira (the Nigerian currency) against foreign currencies, especially the U.S. dollar and the British pound. Small and medium-sized enterprises (SMEs) are the primary gap fillers for the economic diversification of any nation and also hedge a country from centralizing revenue sources (Stoica et al., 2015).

The current official exchange rate stands at ₦415 to \$1 and ₦500 to £1 (CBN, 2022), which is indicative of the inflationary state of the country. The CBN (2022) and the Ministry of Trade and Investments are emphatic on the essential contributions of SMEs as vanguards of rural industrialization, poverty reduction, improvement of local technology, output diversification, and development of indigenous entrepreneurship (Anyanwu, 2021). In the same vein, they acknowledge that the lack of access and use of modern ICT infrastructure, among other significant challenges, has increasingly undermined SMEs' performance. Consequently, this has relegated the SME sector's position to stagnancy in terms of growth and contribution to Nigeria's economy. The current situation in the industry is radically different from the one touted by several

studies as the answer to the rising and continual challenges of economic diversification and unemployment (Beck et al., 2005; Ehinomen & Adeleke, 2012; Falk, 2001; G. Parker, 2015). The literature reviewed supported the CBN's position because it indicated a contrary view and revealed a persistent downward erosion of the economic value received from the SMEs toward the national coffers (Apulu et al., 2011). One of the measures suggested in past studies was the digitalization of SMEs in Nigeria and the incorporation of ICT to reverse the trend.

The evaluated literature, which encompassed a wide variety of research studies, also established the positive interdependence between ICT and economic development (Al-Debei & Al-Lozi, 2012; Thomas, 2014; see also Anielski, 2002; Ndemo, 2021). The correlation is bridged through the SMEs, who are middlemen to bolster the economy, aided by ICT. However, several studies have indicated a dismal performance of Nigerian SMEs in adopting and using ICT to boost profitability, growth, and overall performance (Olise et al., 2014). Other past studies reviewed focused on the factors influencing the low level of ICT usage among Nigerian SMEs and proffered ways to encourage ICT adoption. However, there is a noticeable paucity of data on incorporating a progressive reinforcement of ICT usage through a deliberate strategic process.

In addition, although there are related studies on this topic with Nigeria as a case study, the usual focus is on Lagos, the country's commercial nerve center. The nucleus of the study was Abuja, Nigeria's capital city. Sandberg and Alvesson (2011) stated that this is similar to neglect spotting in which several related studies overlook a particular area. This study bridged that gap by ascertaining via expert knowledge gathered from the owner leaders of several successful SMEs in the city who have revolutionized and

sustained their businesses with the help of ICT. Technological innovations currently dominate the global marketplace and instigate the emergence of short-term, low-hanging fruits, such as profitability and increased market share, ensuring long-term growth and sustainability. Through ICT, the strategic process through which small and medium businesses in Nigeria can exploit these advantages forms the basis of this chapter.

The chapter employs a chronological and thematic process for a comprehensive grassroots understanding of this study. It is delineated into sections to achieve a more extensive discourse that, among other things, provides a background and history of SMEs in Nigeria, challenges that obstruct the growth of SMEs, the role of SMEs, localized challenges in the Nigerian scene, and barriers to using ICT for sustainability.

Furthermore, this chapter evaluates previous literature that has documented the factors that influence ICT tools and usage by SMEs, ICT usage and firm growth and survival, and pertinent theories relating to these concepts. This part of the study also examines the literature on key government policies on ICT to investigate a possible link between the national ICT penetration challenges and the low ICT usage by SMEs.

The overarching aim of this literature review was to provide insight into how ICT can be a game changer for Nigerian SMEs, which would justify embarking on the research. Information from previous studies were also used in assessing the importance of small and medium-sized industries to Nigeria's economic development and enhance the development of holistic ICT strategies to achieve business survival and sustainability for SMEs.

History of Small and Medium-Sized Enterprises

Small to Medium-Sized Enterprises (SMEs)

Alfred Marshall recognized the central role of entrepreneurship in society by categorizing entrepreneurship as the fourth factor of production after land, capital, and labor (Nafukho & Muyia, 2010). From time immemorial, hard work and thrift have reinforced the global spirit of entrepreneurship. Entrepreneurship is widely accepted as an essential driver of economic growth and dynamism. The transformation of ideas into economic and financial opportunities is the fundamental principle of the concept of entrepreneurship (Olise et al., 2014; Schaper, 2015). Invariably, this pursuit of economic benefits and improved standard of living led to the global boom in SMEs and amplified entrepreneurship to become recognized and appreciated as a prime factor in national development in the modern world. Therefore, a study focused on entrepreneurship and SMEs is a study of the core of any economy (Cole, 1954).

A single or general definition of SMEs is unattainable because of the term's varied meanings, connotations, and applications in different countries. The lack of a universally accepted definition also applies to researchers, academia, and policy makers, who prefer a contextual definition of the term dependent on relativity and sector specialization (Kariuki, 2009). In most descriptions, the underlining agreement is that SMEs are small and medium-sized businesses, usually nonsubsidiaries and independent, employing fewer employees (Beck et al., 2005). A more precise understanding of SMEs can be achieved based on quantitative characteristics (such as the number of workforces, capital, scope, and cost of projects), annual turnover, and financial strength, among other things. For example, according to the United Nations' (n.d.) Trade Facilitation

Implementation Guide, in developed countries, a company qualifies as an SME if it employs fewer than 250 persons and has an annual business turnover below \$50 million to \$100 million. However, in Nigeria, the CBN (n.d.) qualifies a company to be categorized as an SME if it employs fewer than 300 persons and has a turnover of less than ₦100 million per annum. Regardless of the varying definitions, a fundamental difference between large- and small-scale businesses is the active presence and participation of the owners, which also enhances flexibility and reduces bureaucracy. The internal operations of SMEs, organizational structure, and speedy reaction to unexpected environmental changes also distinguish them from large firms (Schaper, 2015).

Nevertheless, this divergence does not negate SMEs' critical and pivotal roles in national economies (Olise et al., 2014). According to The World Bank Group (2020), small and medium-sized businesses remain the strongest drivers of socioeconomic change, especially in low-income and developing countries. They act as stimulants by creating jobs and increasing a nation's productivity. Unfortunately, the growth rate of most SMEs in the 54 countries that make up Sub-Saharan Africa, including Nigeria, usually does not exceed the initial phase of formation and establishment (Nafukho & Muyia, 2010).

SMEs in Nigeria

Multiple works of literature chronicle the history of commerce and trade in Nigeria, which is provided in this section as background material for understanding the present proliferation of SMEs in the country. Trade and Africa are synonymous from precolonial days, during the colonial administration, and postcolonial era (Adeosun et al., 2009; Agu, 2006). Before formal money, barter trade was used by exchanging goods

possessed for goods needed (Otunga et al., 2001). In addition, the 1946 paper titled “Ten-Year Plan of Development and Welfare” presented by the British, then colonial masters of Nigeria, precipitated the upsurge of SMEs in Nigeria (Wicker, 1958). The objective of the 10-year plan was to encourage individual business ownership and revitalize successful businesses in the region that existed before the advent of colonialization. The end game was a lesser dependence on British funding and economic planning as the country’s calls for independence were beginning to reverberate (Imeopkaria & Ediaogbona, 2014).

Decades later, with the emergence of a money economy, independence from the colonial masters, and technological innovation, the Nigerian entrepreneurship spirit was fully ignited, leading to the continual increase in SMEs (Olise et al., 2014). As one of the top three largest economies in Sub-Saharan Africa, the newly independent Nigeria witnessed an immediate and impressive escalation in SMEs and an initial concentration in the trade and commerce sector before cascading to other industries (Igwe et al., 2018). The literature reviewed showed that despite decades of overreliance on oil, the economic diversification efforts of various postindependence administrations were gradually becoming ubiquitous. The evidence is showcased by the increased presence of business firms in all sectors of agriculture, health, trade and commerce, telecommunications, manufacturing, oil, and gas. These organizations range from multinational corporations with local offices to indigenous companies and small and medium-sized enterprises (Hassan & Olaniran, 2011). The rise in entrepreneurship; recognition; awareness of the marketability of talents, skills, and crafts; and the increased appreciation and surge of

digital marketing and sales have opened yet another wave of the digital revolution within the small and medium business sector.

Consequently, this has boosted the establishment of more SMEs in the country. In this digital age, the development of any nation is less dependent on government; instead, it relies on the innovativeness, creativity, and ingenuity of the citizenry in converting the available resources into productive use, which will improve the socioeconomic well-being of the public.

SMEs significantly contributed to the postindependence of Nigeria by using technology and innovation to transform traditional and indigenous industries (Hassan & Olaniran, 2011). The increased realization of the importance of SMEs in alleviating poverty and unemployment led to the creation of the SMEDAN in 2004 (Ehinomen & Adeleke, 2012). SMEDAN was formed by the federal government and mandated to stimulate, monitor, and coordinate the development of the SMEs subsector. In addition, it was assigned the functions of initiating and articulating policy ideas for small and medium enterprises' growth and development and promoting and facilitating development programs, instruments, and support services to accelerate the development and modernization of SME operations (SMEDAN, n.d.).

Governmental failure in Nigeria is another reason for the uptake of SMEs. Inadequate provision of essential public amenities in several parts of the country introduced a rapid ingress of businesses, particularly in the SME category. Because of government inefficiency in providing these amenities, such as water, electricity, security, roads, and so forth, they are all sourced privately by citizens, and SMEs fill this service cavity for themselves and their customers. They offer alternatives to the availability and

accessibility of these utilities (Agu, 2006). Regardless of the high mortality rate of Nigerian SMEs, these reasons explain the continual appreciation and growth of SMEs, which employ over 60% of the Nigerian workforce and occupy a 96% share of the entire business sector in the country (Oyelaran-Oyeyinka, 2020).

Role of SMEs

Several studies have overwhelmingly demonstrated that SMEs are critical to any nation's growth and development (Lucchetti & Sterlacchini, 2004). This applies to developed and developing countries because SMEs contribute to increasing per capita income and output. They are also job creators with the resultant benefit of poverty alleviation and promotion of effective resource use, which is critical to engineering economic development and growth (Olatokun & Bankole, 2011; Oloruntoba, 2018; Schaper, 2015). The other derivatives of the employment benefit from SMEs include income creation, reduction of hunger, promotion of local or indigenous technologies, and import substitution (Apulu & Ige, 2011). Unequivocally, the previous studies reviewed supported these assertions that the development of SMEs is seen as a propellant in actualizing broader economic and socioeconomic objectives (Akanbi & Akintunde, 2018; Jennex et al., 2004). One of SMEs' significant attractions and quality is the low cost of capital expedited in job creation and provision of goods and services (Apulu & Latham, 2010). This feature makes the sector a critical building block in the socioeconomic development of any country.

Apulu and Iage (2011) advocated for SMEs as the fundamental agents of economic transformation and stability and maintained that these businesses are breeding grounds for domestic entrepreneurial capabilities, technical skills, technological

innovativeness, and managerial competencies for private sector development. The critical role they play as major economic drivers and connectors between the socioeconomic and geographical sectors of any country is part of the reason for the ongoing studies and research (Gray & Saunders, 2016; Ladokun et al., 2013; SMEDAN, n.d.). Small and medium businesses are present in all sectors and represent various firm sizes, technological levels, and degrees of formality and produce and offer intermediate goods and services to large enterprises. In essence, the success and growth of megafirms are dependent on SMEs.

The steady growth of SMEs is therefore considered a prerequisite for national economic growth and development. SMEs represent the foundation and development of larger enterprises, and these larger firms provide the necessary tools to groom potential entrepreneurs and SME owners (Olatokun & Bankole, 2011). As critical drivers for the growth and development of most economies, the significance of SMEs for productivity; national competitive advantage; and a primary means of achieving economic diversification, increased societal equality, and equity remains unmatched (Akanbi, 2018; Kowo et al., 2019; Wattanapruttipaisan, 2010). These are some common threads that reverberate in virtually all the literature reviewed on the role of SMEs.

The health status of any economy is gauged by the number, dynamism, and success of its small and medium businesses. The share of SMEs in global productivity is over 30% higher in some countries but generally growing (Igwe et al., 2018; Thomas, 2014). In economically developed countries such as the United States, they account for 99% of all firms, employ over 50% of private-sector employees, represent 98% of exports, and generate 65% of new private-sector jobs; thus, they are the backbone of the

U.S. economy (Thomas, 2014). The same statistics are mirrored in other developed countries such as China where the small and medium scale sector employs over 50% of the workforce and contributes over 50% of GDP (Ehinomen & Adeleke, 2012; Schaper, 2015).

In Nigeria, SMEs employ over 60% of the labor force in formal and informal sectors (Gbandi & Amissah, 2014). As one of the major economies in Sub-Saharan Africa, Nigeria's economy is of high interest to regional and global observers and current and potential investors. Estimates of the number of small and medium-sized businesses in Nigeria indicate that they comprise approximately 85%–90% of all businesses, thus having the most significant percentage of workers in the country (Gbandi & Amissah, 2014; Hassan & Olaniran, 2011). Small and medium businesses are economic stimulators and can change many countries' economic fortunes. The economic recovery strategy of Kenya in the mid-2000s has been attributed to the creation of over 88% of jobs by SMEs (Tedre et al., 2009), and Muriithi (2017) estimates that over 80% of employment in the country are created by SMEs.

Furthermore, according to several studies reviewed, the level of a country's business activity and economic development can easily be assessed by the number of viable enterprises that exist (Igwe et al., 2018). Scholars have also attributed SMEs as the primary source of dynamism, flexibility, and innovation in all countries. In addition, small and medium-sized firms dominate strategic service industries, the ICT start-up sector, and outsourcing firms in human capital development because of their adaptability rate and personalized customer service (Matthews, 2007).

Several challenges ranging from leadership, insecurity, and lack of adequate infrastructure plague many developing countries, hence the widespread nature of SMEs as an escape from poverty (Abe et al., 2013; Abiodun & Adeyemi, 2013). These enterprises' economic role and importance place a considerable demand for the operators to be innovative in their product and service offerings. Past studies have emphasized that small and medium firms' continual growth and development is a significant source of economic dynamism (Beck et al., 2005; Chacko & Harris, 2006; Marques et al., 2013). This statement is validated by the existence of SMEs in both the traditional and the new sectors, such as the professional and scientific service sectors (Hefu et al., 2013; Maryam & Park, 2022).

SMEs and Nigeria's Economic Development

The story of Nigeria's economic development was effectively activated with the return to democratic rule in 1999. The first democratic administration introduced economic policies to quicken the transition from an oil-based economy to a more diversified one. These policies were the National Economic Empowerment and Development Strategy (NEEDS) of 1999 and the State Economic Empowerment and Development Strategy (SEEDS) of 2003. They were deliberately formulated and deployed to reduce foreign debts, achieve banking consolidation, harmonize and strengthen several legal frameworks that will protect the lives and assets of Nigerian citizens, and most importantly, boost the private sector (Oloruntoba, 2018). Subsequent administrations continued on the same path while focusing on developing infrastructure that would enhance the growth of the private sector. The country's economic

development was impressive and growing at an expected rate for the country termed the *Giant of Africa*.

Furthermore, the Nigerian economy was rebased in 2014, leading to a GDP of \$500 billion and the country's emergence as the largest economy in Africa (Ifinedo, 2006). With a population of over 180 million at that time (United Nations Development Programme, 2015), this growth was noninclusive because of the tribal and ethnic inclinations of the leaders. The developmental efforts did not reduce poverty and inequality (Ifinedo, 2006; Oloruntoba, 2018). As deduced from the reviewed studies, the implication is that although the economic strides and development were confirmed and impressive, the country did not actualize inclusive growth. There was no corroborative evidence on most of the population, leading to the continued classification of Nigeria as a less developed nation, along with war-torn countries, such as Chad, Mali, Afghanistan, and Liberia. Researchers, like Bharadwaj (2000) and Irani (2002), who performed a critical analysis of the economic journey of Nigeria, succinctly captured this point by saying that a country's citizenry should authenticate economic growth through a positive difference in its purchasing power and visible improvement in living standards.

Several researchers have also proposed that economic development is not an esoteric concept but goes far beyond the numerical increase in a nation's income and GDP. It should be pervasive and permeate all sectors of the economy and country (Abiodun & Adeyemi, 2013). Misra and Puri (2016) postulated that economic development means growth plus progressive changes in certain critical variables that determine the well-being of the people. Furthermore, they asserted that qualitative dimensions in the development process of any economy are expressed in terms of an

increase in the national product or the product per capita. The culmination of every developmental plan or strategy is the effect on the people. Therefore, as indicated by most of these studies, the ultimate role of SMEs is to ensure that this is achieved through economic autonomy and job creation, which will translate to a visible reduction of poverty; citizen financial independence; and increased equity, equality, and social justice (Apulu et al., 2011; Jones et al., 2017).

Volumes of research have underlined the fundamental role of ICT for productivity and economic growth at the macroeconomic, industry, and firm levels (Oyelaran-Oyeyinka, 2020; Stoica et al., 2015; Tàpies & Fernández Moya, 2012). Nevertheless, the growth potential of SMEs remains largely unexploited (CBN, 2020). These new prospects exist in areas such as increased export and employment possibilities, leading to more operational and cost synergies (Otunga et al., 2001; SMEDAN, n.d.). In addition, growing sectors, such as entertainment and leisure, as well as low-tech sectors (footwear, clothing garment, and agro-processing of staples and cassava, oil palm, and other oils) are severely underdeveloped (Adebambo & Toyin, 2011). Nigeria's small and medium business sector will have a visible incremental economic contribution if these areas are properly harnessed and developed.

Challenges of SMEs in Developing Nations

The importance of small and medium-sized businesses is unchallenged and entrenched in almost all the reviewed research. Perhaps, the next incontrovertible issue agreed by researchers is the overwhelming difficulties SMEs face in striving to sustain their businesses amidst numerous challenges. Differences between developed and developing countries are reflected in leadership support, infrastructure sufficiency, and

social and cultural issues. Hence, the focus is on the challenges facing small and medium-sized firms in developing countries.

The degradation of critical basic infrastructures, such as a good road network, sufficient electricity, accessible clean water, a high spate of insecurity, attendant loss of lives, and vandalization of properties has crippled most small and medium businesses in Nigeria (Apulu & Ige, 2011). The poor state of the power infrastructure in the country is the major obstacle to the growth of SMEs. Entrepreneurship cannot thrive without adequate power, and the irregular supply of electricity has contributed significantly to the high operational costs of SMEs. Inevitably, these excessive costs limit their investment capacities and reduce innovation, which is the lifeline of small and medium-sized firms (Olise et al., 2014).

These factors are not unique to Nigeria but cut across most countries in the African continent (Manu, 1998). The private provision of these public utilities by small and medium-sized business owners in Nigeria results in high operating costs, leading to the country consistently achieving low scores on the ease of doing business index (EoB) (Ifinedo, 2006). From its highest score of 170 in 2014 to a score of 131 in 2020, it has become clear that innovative implementation strategies must be employed to slow this ebb of low scores (The World Bank, n.d.). The EoB index is part of an overall national climate for technological innovation, which also comprises other salient issues, such as government policy, costs of doing business, and quality of communication infrastructure. These are all essential factors that influence SME growth and, unfortunately, are usually ranked very low in developing countries such as Nigeria (Li, 2014).

Other challenges encountered by owners of SMEs in Nigeria, as gleaned from previous research, can be collated to include shortage of skilled labor, human capital flight, improper financial and management practices, poor export policies, the inadequacy of raw materials, and lack of entrepreneurial skills (Gbandi & Amissah, 2014; Hassan & Olaniran, 2011). Access to land and unfair competition from the large enterprises and businesses also inhibit factors that curb the growth and survival of Nigerian small and medium businesses. The average Nigerian user prefers imported goods over locally produced ones, which creates a low demand for products made by Nigerian SMEs (Uzor, 2011).

Misra and Puri (2016) enriched the discourse by asserting that although business is an economic activity, it is also influenced and subject to noneconomic variables, such as innovative and disruptive technologies, political instability, government ideologies, administrative and cultural changes, values, and a host of other factors. The inability of these businesses to meet the technological demands of the present-day business ecosystem is also a disadvantage, and this study is premised on this challenge.

Multiple taxation and regulation for the same services from numerous government agencies are cankerworms that eat deep into the meager profits realized from these SMEs. The negative consequences of all these challenges are inadequate access to finance or capital because of most SMEs' low credit and growth feasibility scores, making them high-risk investments for many banks (CBN, 2020; Manu, 1998). Therefore, commercial banks in the country are reluctant to support small and medium businesses and start-ups without the required collateral, which most firms in this sector cannot readily provide (Gbandi & Amissah, 2014). Aside from these obstructions to bank

credit lines, The World Bank (n.d) also identifies the inconsistent definition of SMEs as a limiting factor in their financial support. It insists that the variance in definition merits a cautious approach to interpreting and generating evidence on the type of support that will most benefit them. Accordingly, several financing approaches, such as credit lines and risk-sharing facilities extended to SMEs, have been ineffective in achieving business sustainability (The World Bank, n.d.). This lack of finance obstructs growth and expansion opportunities for small and medium businesses, particularly in integrating ICT infrastructures. Furthermore, this is exacerbated by the lack of awareness of the inherent transformative powers of ICT on business growth, especially in rural areas (Oyeyinka, 2020).

Theoretical Frameworks for ICT Adoption

Researchers have developed various models as a theoretical basis for understanding and explaining the factors that drive the adoption of ICT for multiple purposes and in different sectors. Some of the popular approaches include the theory of reasoned action, the technology acceptance model, the resource-based view (RBV) theory, and the diffusion of innovation theory (Al-Debei & Al-Lozi, 2012; Assensoh-Kodua, 2019; Thomas, 2014).

Theory of Reasoned Action

The theory of reasoned action, proposed in 1975 by Fishbein, focuses on the intention to perform a particular behavior (Ajzen, 2012). The theory states that one's behavior is a consequence of one's choice to perform that behavior, and this intention is derived from one's attitude, thoughts, and feelings about that behavior. This approach is

instrumental in explaining attitudinal behavior toward acceptance, use, and adoption of technology in organizations (Odooyo et al., 2016).

Technology Acceptance Model

The technology acceptance model was developed by Davis (1985) and stemmed from the idea of reasoned action. Davis posited that perceived usefulness, ease of use, and attitude toward ICT use directly determine the intentions to use technology. The model is an established framework that aids in explaining and predicting attitudes toward ICT and possible adoption based on a user's perception of its utility (Olise et al., 2014; Wunnava, 2014). The model has evolved over the years to become one of the practical approaches to understanding the rationale and predictors of acceptance and rejection of technology.

The Resource-Based View Theory

The RBV theory aims to understand how organizations achieve sustainable, competitive advantages that guarantee business survival through the strategic resources of a firm (Barney, 1991; Conner, 1991). Barney (1991) conceptualized this approach, which promotes value, rarity, imperfect imitability, and nonsubstitutability as essential qualities of a firm's resource that will aid in sustainability, competitive advantage, and performance. It has been employed in studies on ICT adoption and firm survival to explain how a firm's ICT assets can be transformed into a unique resource for corporate growth and development.

Diffusion of Innovation Theory

The diffusion of innovation theory was developed by Everett Rogers in 1962, and it dwells on the spread and speed of a new idea, product, service, or practice among a

population (Rogers, 1976; Straub, 2009). The four components of this theory are innovation, communication channels, time, and system (Rogers, 2003). It explores the use of ICT adoption for innovative purposes and is used as a change model for technologically innovative studies and applications (Yi-Hsuan et al., 2011).

Theoretical Framework (the RBV)

Theoretical and conceptual frameworks provide guidance and impetus for a study and form the foundation for its credibility, acceptability, and generalizability. In addition, they enhance the empiricism and rigor of research and create expanded knowledge (Thomas, 2014). The explanations for users' attitudes toward adopting ICT are often proffered on the foundation of theoretical frameworks.

Any literature review on strategic business growth and sustainability will discuss the resources available or unavailable for the firm to achieve its strategic objectives. As expected, most previous studies on ICT and SMEs premised the research on the RBV theory (Al-Debei & Al-Lozi, 2012; Thomas, 2014). Several resource theories focus on multiple or specific resources that differ from ICT. Most previous studies on adopting ICT as a firm's strategic resource have also used other approaches, such as the technology acceptance model, diffusion of innovation theory, and others. However, other studies have examined ICT adoption from the perspective of being a central resource for survival. Nandkumar and Arora (2010) used the RBV theory to investigate the importance of ICT for organization performance. They contended that an increase in technology supply should enhance the effectiveness of an organization's marketing capability in improving performance. Their study contributed to a small body of literature

on how contingencies in the environment affect an organization's capabilities in providing a competitive advantage

This study focused on ICT usage by SMEs in Nigeria and analyzed how that usage can be adopted strategically. ICT is a crucial business resource for any firm in the digital/information age, hence the use of RBV theory as the conceptual framework for this research. The RBV is founded on strategic management. It explains how enterprises can succeed and gain business advantage by treating resources and capabilities as central considerations in strategy formulation, which would also translate to primary sources of profitability (Barney, 1991). It is the dominant theoretical framework used in strategic management theory to analyze organizational resources, and it was also employed in most studies (Anielski, 2002; Ndemo, 2021).

The RBV theory, which Barney (1991) popularized, is hinged on the premise that a firm's resources enable it to achieve competitive advantage and superior performance, eventually enhancing its sustainability and survival (Assensoh-Kodua, 2019). However, Barney (1991) posited that these resources must be rare, valuable, not easily imitable, and not substitutable, or they must provide a particular niche in the market. Another dimension to the RBV theory is that this strategic resource that guarantees increased market share should be heterogeneously distributed across the firm and be differentiable and stable for an extended time (Weill & Broadbent, 1998). In addition, the ability of the resource to survive competitive duplication through protective measures, such as casual ambiguity and historical uniqueness, is another crucial element in the framework (Barney, 1991). The primary objective of this theory is to serve as a lens or guide in an internal examination of a firm's tangible and intangible resources and the deliberate

strategic choices they employ to achieve competitive advantage (Clemons & Row,1991), in this case ICT.

Studies have investigated the application of the RBV as a theoretical foundation in analyzing the implications of information technology (IT) on firms' performance and examining an empirical and complementary connection between IT and other firm resources (Jacks et al., 2011). This is especially true for SMEs, whose survival depends on their use of ICT to develop new organizational models, compete in new markets, or enhance their internal and external communication relationships (Hyder & Lussier, 2016).

Resource

Several definitions have been proffered for resource, and sometimes its varying definitions are sector or industry driven. However, in business and economics, Wernerfelt (1984) stated that resources refer to any firm's strong and weak attributes, which may be tangible or intangible, and are usually long term. These resources may represent technological skills, knowledge and acquisitions, skilled personnel, trade contacts, patents, machinery, real estate, efficient procedures, and capital. Clemons and Row (1991)) saw resources as assets that are tangible or intangible, physical, and human, intellectual or relational attributes that a company can deploy, enabling it to produce efficiently and effectively a market offering that has value for some market segments.

Barney (1991) was more succinct in his support of Clemons and Row's (1991) definition because he stated that resources are physical and nonphysical assets that organizations use to choose and implement strategies. According to Barney (1991), organizational resources are strengths that organizations can use to conceive and execute

their plan. Wade and Hulland (2004) provided a definition of resources that connected the availability of an organization's assets and capabilities to the recognition of market opportunities and threats. These are valuable items or processes that the organization can use in its operations for creating, producing, or offering its products to a market.

Criticisms of RBV (ICT and SMEs Sustainability)

Several studies have moderately debated and critiqued the application of the RBV theory to strategic ICT use for business sustainability. The principal argument is that ICT is not a unique resource and can be easily duplicated (Conner, 1991). Based on this, ICT investments do not necessarily offer any competitive advantage because other firms can also acquire them. Bharadwaj (2000) contended that it is not the investment that instigates competitive advantage and firm performance but how the SMEs leverage ICT to innovate and develop additional resources and skills that will empower them competitively. Despite the uniformity and replicability of ICT resources across SMEs, the different ICT applications by individual firms generate a distinct and heterogeneous distribution, which aligns with the RBV theory (Weill & Broadbent, 1998).

Another major critique of the RBV theory is what Priem and Butler (2001) called its "elemental fallacy" (p. 29). A firm's most valuable resource that accords it competitive advantage is subject to several exogenous factors, such as operating environment, product and customer, demand and supply change, and a host of others. The failure of the theory to take these elements into account renders it imperfect and a burden on the proponents or users to close the gap.

Like any theory, the RBV theory is subject to such critiques, because there is no perfect theory, and they are all applied in a nonutopian world. The key is modifying and

adapting an approach to suit current needs and realities. Several small and medium businesses have developed technological applications unique to their operational style, customer needs and diversity, and industry demands. Most of these applications promote organizational efficiency and accelerate the firm's access to information, increasing its competitive edge (Bharadwaj, 2000).

In addition, several researchers have identified other ways to adopt a RBV framework that can be applied to ICT-related resources as a competitive advantage. In their research on sustaining IT advantage, Clemons and Row (1991) found that managerial ICT skills, human ICT assets (skills and knowledge), reusable and adaptable technological base/infrastructure, and partnerships with large ICT firms are primarily rare and firm specific depending on the nature of business and organizational style. These are all derivatives of ICT resources and can be deployed to create a competitive advantage in retail and wholesale companies because of their immense internal and external opportunities (Reddy & Rao, 2014). For example, SMEs can quickly move their customers from stores to web stores to efficiently handle substantial retail orders or demands. For instance, Target announced a permanent shift to online shopping during the Thanksgiving holidays in 2020 after seeing an almost 10% sales increase in 2020 (Repko, 2021). The retail group was forced to revert to online holiday shopping and close physical stores to avoid rowdy crowds caused by the pandemic.

Although this is an example of a significant shopping chain, several SMEs in Nigeria have resorted to ICT in similar ways to cope with the current inflation sweeping worldwide. They do this by automating their business processes and increasing the use of social media platforms for marketing communication purposes (Maryam & Park, 2022).

Therefore, it is explicable to expect that ICT would be one of the top three resources in such a firm, further underscoring its importance as a crucial tool in today's business ecosystem. As a strategic resource, ICT is regarded by some as a means for functional integration and an opportunity to enhance the firm's competitive capabilities (Reddy & Rao, 2014). The adoption of ICT by businesses to attain sustainability is also enveloped within the RVB theoretical framework and has been studied by researchers. Zhang et al.'s (2011) study on the influence of ICT on supply chain management performance used the RBV as a theoretical framework. They concluded that RBV theory could be exploited in repositioning ICT as a company's central resource capability. In the same vein, Reddy and Rao (2014) studied the usage of ICT as a resource for sustainable competitive advantage via the fundamental elements of the RBV framework.

ICT AND SMEs

Aside from financial services, over 40% of the fortunes made by the wealthiest men on the *Forbes* list were from entrepreneurship and technology (Peterson-Withorn, 2016). The fusion of entrepreneurship and ICT remains undefeated as the perfect partnership for wealth creation because every sector revolves around these two concepts. It is therefore evident why the terms continue to generate the interest of researchers and the interminable studies that will continue regarding them.

Several decades ago, many businesses, whether large companies or SMEs, had been comfortable playing within their domestic markets with minimum contact with the rest of the world. Liberalization, globalization, and falling trade barriers, all enabled by ICT, have changed the landscape of business operations. Modern business has become as important as governance because of the positive effect of industrialization and commerce

on national economies (Falk, 2001). ICT has become a critical infrastructure in almost all countries and a game changer in radicalizing and enhancing commercial enterprise (Thomas, 2014).

ICT has also accelerated the intensity and speed of diffusion of innovation (Soffer et al., 2010). customer service efficiency, and increased profit. Chacko and Harris (2006) insisted that a significant prerequisite for the sustainability of any firm operating in today's business environment is the ability to be updated with the latest ICT infrastructure. They also stated that firms can be strategic players in the ICT world by being producers, users, or both with the deliberate intent to capitalize on ICT for profitability and growth. Furthermore, they advised that the dive into ICT should be a gradual process from essential technologies, such as fixed line or mobile phones, email, computers, and basic document processing with Microsoft Office software, to more specialized software such as e-commerce and other information processing systems that will cater to their specific needs and corporate objectives.

M. Tan and Teo (2000) asserted that the transformative role of ICT in instigating and sustaining business viability is vital for firms because it empowers them to streamline and coordinate the massive amount of data and the enormous flow of information through a redesigning or reengineering of their operational processes. This is what will enhance competitiveness. Furthermore, for SMEs to effectively compete in the global market, they need to comprehensively embrace the use of ICT (Jacks et al., 2011). Unfortunately, Chacko and Harris (2006) stated that although economies worldwide depend on ICT for efficiency in operations, small businesses in Africa still grapple with teething business problems that reduce their effective adoption of ICT. Ultimately, this inability to meet the

prerequisite level of ICT use prevents them from actively engaging in the regional and global economic business network.

In line with the RBV theory, a firm's ICT capability relates to its ability to mobilize and integrate ICT resources into the other resources of the firm as a support measure or strategic business enhancement tool (Bharadwaj, 2000). Specifically, the vital ICT-based resources can be categorized as follows:

- the tangible resource comprising the physical ICT infrastructure components;
- the human ICT resources comprising the technical and managerial ICT skills; and
- the intangible ICT-enabled resources including software, applications, knowledge assets, customer orientation, and synergy (Grant, 1991).

ICT, which is a broader term for IT, refers to all communication technologies, including the internet, wireless networks, cell phones, computers, software, middleware, videoconferencing, social networking, and other media applications and services (Irani, 2002). According to Adeosun et al. (2009), ICT emphasizes unified communications and the integration of telecommunications (telephone lines and wireless signals) and computers as well as necessary enterprise software, middleware, storage, and audiovisual that enable users to access, store, transmit, understand, and manipulate information.

ICT, or information communication industry, is the current and next wave of economic development globally (Tovar, 2012). Developing countries have woken up to the fact that investment in domestic ICT growth is a constructive way to achieve developmental objectives and a strategic arsenal in attracting foreign direct investment (FDI; Ifinedo, 2006). The awareness of the economic impact of ICT has led to greater focus in the sector and subsequently, an increase in the number of internet service

providers (ISPs) and online service providers in many countries (Nikmah et al., 2021). Investments in ICT hardware, software, data centers, servers, and broadband have also escalated. Nigeria has not been left out of the ICT race.

Benefits of ICT to SMEs

The growth and performance of SMEs are mainly dependent on their use of information and communication technologies (ICTs). This statement is attributed to the OECD (2020) that while ICT is gradually becoming indispensable in the business world, it presents immense benefits to SMEs and also attendant challenges, which must be appropriately balanced out to maximize its potential. ICT is heralded as one of the principal innovators in changing the traditional course of business and can be used operationally (to improve processes) and strategically (to enhance profit and sustainability; Weiner & Rumiany, 2007; Zhang et al., 2011). ICT presents benefits to firms, including greater internal control of operations, increased penetration of business environments, the delivery of a valued and high-quality package of products and services, extension of available markets, and the positive redefinition of existing businesses and introduction of new enterprises (Heikkila, 1991). The internet, one of the primary and standard ICT tools, aids operational efficiency and cost reduction by providing databases that help gather information. Synergies, partnerships, and collaborations have become increasingly possible and commonplace because of removing barriers such as distance, time, and finance. This is through the employment of ICT tools for virtual meetings and imagery software, which permeates geographical constraints across countries and continents (Lawrence & Tar, 2010; Weill & Broadbent, 1998).

Information is a perpetual asset valuable to SMEs because of the rapidly changing business environment. The timely application of data for a competitive purpose is hinged on the quick acquisition and effective processing of information (Kabanda, 2008). This is one of the primary roles performed by ICT to enhance the competitive advantage of SMEs. The business niche and advantage of small and medium-sized firms over large firms are embedded in their fast response rate in attending to their customer base's current and future needs, which is easily achieved through ICT (Zhang et al., 2011). SMEs can also use the potential of ICT to improve their productivity and extend their capabilities and broaden their market share, locally and internationally (Thomas, 2014). Smart phones, computers, video and web conferencing tools, e-commerce, social networking, and online collaboration and productivity platforms are some ICT tools that are constantly reinvented to meet the continually changing demands of business clients. These tools allow SMEs to venture into global markets, foster new business relationships, and capture new customers and suppliers (Thomas, 2014).

The low cost and ease of acquisition and installation of ICT, such as the internet, enable SMEs to be involved in electronic commerce technologies (Teo & Pian, 2003; Tovar, 2012). Misra and Puri (2016) opined that ICT, such as the internet, is used by many businesses, spreading to almost all sectors ranging from educational, recreational, commercial, health services, and so forth. According to Misra and Puri, this explosive growth and commercialization of the internet offer immense opportunities to SMEs to explore new avenues and ways to thrive and survive. Apulu and Ige (2011) stated that SMEs that can exploit the advantages of innovative ICT processes, such as Supply Chain Management (SCM), Customer Relationship Management (CRM), and Knowledge

Management (KM), for digital networking will lead to better coordination of their daily business operations and effective decision making and control.

ICT allows small firms to overcome size limitations and compete more effectively with more prominent firms in larger markets. This increases international opportunities for SMEs. It also increases entrepreneurship by creating more opportunities for more diverse people to start a business (Yunis et al., 2017).

ICT and Nigerian SMEs

The internationalization of Nigerian SMEs, which is critical for their growth and survival, should be initiated by leveraging ICT-based systems to accelerate communications with their global suppliers, customers, and distributors (Obijiofor et al., 2005). Statistics from NCC (2022), the regulator for the Nigerian telecommunications sector, show a current internet broadband penetration of 47% compared to 20% 2 decades ago. This implies the country's impressive broadband penetration rate because of increased demand. Although there are no data or research studies to quantify the relative level of ICT usage among SMEs in Nigeria, it can be deduced from the relatively low contribution of SMEs to the economic development of Nigeria that this demand is not necessarily stemming from the sector. This is considering the profuse benefits of ICT to business profitability and sustainability.

In other developing countries such as Ghana, one of Nigeria's closest neighbors, SMEs contribute approximately 70% to the GDP and account for approximately 92% of business (Zafar & Mustafa, 2017). Conversely, 90% of business transactions in Nigeria are through SMEs, yet the gross contribution to the GDP remains less than 20% (Gbandi & Amissah, 2014).

Some of the most recent studies on ICT and small businesses have maintained that ICT remains the only strategy that enables SMEs to have at least a foothold in competing in the complex business world of today (Maryam & Park, 2022; Nikmah et al., 2021). The studies also have affirmed that the current industrial revolution is imbued with innovation and digital integration. Traditional and hitherto orthodox systems are shifting rapidly to digitalization via information and communication technologies. Research on this topic has been concentrated on other continents, and several previous studies reviewed have emphasized the need for more localized studies that focus on Africa such as this one (Ariyo, 2000; Jones et al., 2017). This study conceptualized the use of ICT by SMEs within the study environment. Thus, this study focused on the peculiarities of the nonusage of ICT by SMEs in the complex business environment of Nigeria. However, it does not disregard the global nature of the Nigerian business environment because of globalization but aimed to juxtapose the two so that a proper analysis of ICT strategies and benefits can be presented at the end of the study.

ICT is a critical player in the multiplicity of small and medium-sized businesses, enhancing their roles in developing the national economy. However, an important revelation from the literature review on the study conducted by Beck et al. (2005) showed that the number of SMEs present in a country does not necessarily equate to higher economic contribution. The more developed a country is, the higher the number of thriving SMEs in the formal and informal sectors. In other words, the SME sector's contribution to employment and GDP indicates a strong positive correlation with GDP per capita, which implies that many countries in Sub-Saharan Africa such as Nigeria struggle with most small and medium businesses operating mainly in the informal sector.

This situation leads to the proliferation of SMEs, painting a deceptive growth picture while a low level of wealth (GDP per capita) is still maintained. The major contributors to an increased GDP per capita are growth in the size of the workforce and development in productivity (Anielski, 2002). The SMEs in Nigeria provide the former but are grossly lacking in the latter, which explains the dismal performance in business sustainability, growth, longevity, and overall contribution to the economy. Ahmad et al. (2019) opined that the corporate longevity of any firm is measured in terms of a firm's age and is a culmination of consistent profitability, innovation, and several other indices. Unfortunately, this is a scenario that is replicated in most of Africa. SMEs in Kenya employed 3.2 million people in 2006 but accounted for just 18% of the country's GDP (Ehinomen & Adeleke, 2012). Similarly, in Nigeria, SMEs produced 95% of formal manufacturing activity in the same year yet contributed less than 20% to the GDP (Agu, 2006).

Conversely, the newly industrialized countries of Southeast Asia (South Korea, Malaysia, and Taiwan) have been economically empowered through entrepreneurship. The GDP per capita has been ascending through increased trade and commerce by small and medium enterprises (Nafukho & Muyia, 2010). Ladokun et al. (2013) singled out South Korea as a prime example of a country that leveraged ICT to boost its exportation index and spectacularly recorded impressive strides in industrialization and digitalization of its commercial activities. According to Ladokun et al.'s study, the government invested 4% of its GDP in research and development, equally divided between ICT and technological innovation. The enhancement of ICT infrastructure in the country and strategic mandates and awareness for businesses, especially SMEs, to invest in ICT have

yielded the desired benefits. Many SMEs in South Korea have transitioned into large companies as evidenced by the 15 South Korean companies currently on the *Fortune* 500 list (Ladokun et al., 2013).

To correct this scenario and for Nigerian SMEs to survive in a globalized world characterized and driven by technological innovations, there is a need to build capacity and increase investments in ICT infrastructure. This move will instigate a reversal of low productivity, which is also a key performance indicator of the efficiency and effectiveness of SMEs in the economy. Interestingly, SMEs account for 99.7% of businesses in the United States, and 90% of these SMEs have some form of ICT infrastructure as part of their daily operations (Ghobakhloo & Tang, 2013). In their study on the characteristics of small businesses and ICT usage, Eze et al. (2011) also discovered that at least 90% of SMEs in developed countries improved their business indices with ICT. They also observed that the reverse was the case for developing countries where less than 50% exploited ICT for business expansion and growth.

A key observation point made in the literature review was that deploying ICT tools and infrastructure does not necessarily translate to improved performance and sustainability. Several studies have shown that investments in ICT infrastructure sometimes do not improve productivity. Most companies that have adopted ICT are unaware that the investment births realized value for the organization (Ekata, 2011). The cause of this ICT productivity paradox stems from a lack of determination of the specific measurements and methods to ascertain the value derived from the investment. In other words, investment in ICT is not the answer, but investing in the appropriate ICT infrastructure will enhance the peculiar business operations of a firm.

ICT for Growth and Sustainability of SMEs

The meteoric pace of the business terrain, the rapid emergence of innovative technologies and expansion of ICT, especially the internet, increased appreciation and use of e-commerce, increased privatization and liberalization of hitherto government assets, and easy access to global information are all critical motivational factors that drive countries to continually pull down barriers to foreign trade and investment (Misra & Puri, 2016). The race to meet the financial commitments to organizations, such as the International Monetary Fund (IMF), The World Bank, and World Trade Organization (WTO), contribute to lowering trade barriers. Regarding trade development and FDIs, the economic growth rate of the African continent is second after East Asia (African Development Bank Group [AFDB], 2022). However, this growth has not helped to drastically reduce the socioeconomic challenges that still ravage the continent, exacerbated by the ongoing global issues of the COVID-19 pandemic and inflation. The high level of unemployment, caused by Nigeria's being home to the world's youngest population, alarming parity in purchasing power, insecurity, and a plethora of other challenges, remains unabated despite the strides accomplished economically (UN, n.d.).

A collation of these issues signals the importance and urgency of capitalizing on the liberalization of trade barriers and restrictive trade laws to strengthen trade and commerce and reap the associated economic benefits. This is the current focus of most countries through small and medium enterprises (S. Parker et al., 2002). Economically developing countries such as Nigeria have unequivocally benefited from entrepreneurship as a tool for poverty reduction, which places great importance on SMEs. However, the emphasis must be placed not only on SMEs but also on sustainable entrepreneurship

because this will address long-term poverty reduction. Most Sub-Saharan African SMEs primarily operate on a subsistence level and face the options of liquidation or transfer of resources to new sectors (Fjose et al., 2010). This unfortunate situation, which applies more in developing countries and less in developed nations, leads to a poor transition rate of SMEs to larger organizations. Norway is an example of a country where 40% of small companies may close within 5 years, but the remaining will continue to thrive and transition to large companies (Fjose et al., 2010). Previous research has also revealed that most companies in the West exhibit exceptional growth, evidenced by incremental profit and increased staff employment from one-20 employees to 20-100 employees after 5 years (Nikmah et al., 2021; Stoica et al., 2015). The economic contributions of these companies in terms of jobs, value creation, and contribution to the national GDP are therefore unsurprisingly substantial. The reverse is the case in Nigeria and will remain so until the SMEs are deliberate in digitalizing their business processes.

ICT is undeniably the foremost propeller of business development, which naturally impacts national development positively. Since the internet boom of the 1990s, firms have improved efficiency in output and transitioned from being local to international actors in the commerce sector. ICT has encouraged entrepreneurship, with a substantial increase in the establishment of SMEs worldwide (Hyder & Lussier, 2016). SMEs have also seen an upward surge in sector participation because of ICT. The small and medium business industries have been overly concentrated in the trade and commerce sector for a long time, mainly buying and selling goods and services. However, investment in ICT has prompted the creation of SMEs in virtually all the primary and secondary sectors of the Nigerian economy of oil and gas, health,

agriculture, ICT, communication services, education, real estate, and so forth (Mustafa, 2015). Similar to the SMEs in Nigeria, firms in developing countries can also gain export opportunities from the digital economy, including e-applications and e-commerce.

Matthews (2007) posited that businesses will only survive through exploiting technology as ICT improves critical business areas, such as advertising and marketing, expansion, communication, networking, and resource planning. Research has shown enhanced statistical performance for companies that use ICT. For example, SMEs that use email as a primary source of communication and social media platforms for customer engagement and marketing communication purposes have grown by 3.4% in sales, which is higher than those that do not (Matthews, 2007).

The eventual outcomes for SMEs implementing ICT include business growth, efficiency and effectiveness, profitability, competitiveness, and improved communication. These outcomes increase entrepreneurship, self-employment, and job creation with the added benefit of reduced dependency on government and increased contribution to the national GDP by the SMEs.

Adoption and Use of ICT by SMEs in Developing Countries

Proponents of increased ICT use, like Kariuki (2009) and Tedre et al. (2009), caution that the failure of firms, especially SMEs, to capitalize and adopt ICT strategies will exclude them from the exponential economic potentials and opportunities, such as improved performance, growth, expansion, and new products alongside dimensions of the same product, which can be enhanced or actualized using ICT. In addition, failure to invest in the internet market may result in loss of business opportunities in cheaper acquisition of goods and a broader market that will purchase the products or services

(Consoli, 2012). Studies have also shown that SMEs that adopt ICT are more efficient and effective with a higher level of customer service, better customer quality of experience, and a mutually beneficial supplier relationship (Consoli, 2012).

Previous studies have championed and espoused the benefits of ICT on the business growth of small and medium-sized businesses. Kollberg and Dreyer (2006) summarized the position of other studies by stating that durable productivity gains have been achieved by firms that adopt ICT because it aids in an effective data flow, which ensures that the firms are updated with the latest information. Consequently, this can be applied to enhance the efficiency and growth of their firms. ICT also eliminates the constraint of time and distance and promotes productive interactions between businesses and their clients and partners. Adeosun et al. (2009) also contributed to the issue of ICT adoption in small firms by stating that ICT creates a more accessible diffusion of organizational information and consequently reduces bureaucracy, which is a crucial input for effective decision making. Although the adoption of information and communication technology has increased among large and small businesses in developing countries, it is still dismal compared to ICT penetration among SMEs in developed nations (Bankole et al., 2013; Eze et al., 2011; Ifinedo, 2006).

SMEs use ICT to grow, innovate, improve technical and managerial skills, and make available e-business solutions (Apulu & Ige, 2011). SMEs also benefit from using ICT to increase productivity or improve communication to reach new customers. The use of ICT depends on operational investment in relation to cost and efficiency. Regardless of the approach, ICT usage starts with essential technologies, such as a telephone (fixed line or mobile phone), computer hardware and software, and internet connectivity (Adekunle

& Telia, 2008). Furthermore, ICT infrastructures today are gradually becoming more sophisticated because of innovation and have increasingly become an efficient tool for organizations in reducing operational costs and increasing profits.

Olatokun and Bankole (2011) conducted a survey in a Nigerian municipality (Lagos) based on a stratified random sample of 60 SMEs (30 ICT adopters and 30 nonadopters). They used questionnaires to ascertain the factors that determined the usage or nonusage of ICT, the types of ICT employed, the degree of implementation, and the benefits of ICT adoption. The results and findings of the study indicated that incremental profits and improved efficiency were key factors that motivated ICT adoption. In contrast, lack of ICT skills and lack of finance were the primary deterrents to ICT adoption.

Olatokun and Bankole's (2011) study and several others suggested urgency in the need to increase awareness, provide public ICT skills and centers, and formulate ICT policies that will encourage adoption among SMEs. Similarly, in Lagos State, Southwest Nigeria, Akanbi (2018) used surveys to collect data from a sample size of 100 SMEs located in all the 20 local governments in the state. The findings revealed that the use of e-commerce among SMEs was still low and should be improved for the sustainability and growth of these businesses.

Enablers and Barriers of ICT Strategies by Nigerian SMEs

One of the focal areas of this study was identifying those factors that impede ICT adoption by SMEs in Nigeria, particularly those influencing SME leaders' adoption of ICT as a business strategy to achieve global market competitive advantage. The researcher reviewed documented literature that was rooted in the fundamental

acceptability, through empirical evidence, of the benefits of ICT and its potential for the growth and sustainability of small and medium-sized businesses. This assertion was also demonstrated by several types of research and studies referenced throughout the review.

Therefore, it is concerning why various SMEs in Nigeria have not yielded to the strategic use of ICT because the natural assumption is that every company has a growth trajectory and profit target. This low adoption rate was confirmed by Uwalomwa and Ranti's (2009) quantitative study of 16 randomly selected SMEs in Lagos, Nigeria. The study used questionnaires and a chi-square test for analysis to confirm the hypothesis that there is a low rate of ICT adoption among SMEs in Nigeria. The study also showed that most of those who adopted ICT have not updated their infrastructure or tools in over 5 years. It is essential that those who have adopted ICT or are aware of the tangible and intangible benefits, especially in Nigeria and other developing nations, realize that antiquated and obsolete ICT tools and infrastructure equal nonadoption. These types of ICT systems may check the list for ICT adoption but are not impactful in actualizing business goals, thereby limiting the development of competitive advantage (Imeopkaria & Edigbona, 2014).

Some researchers such as Agboh (2015), Bowen et al. (2009), and Consoli (2012) argued that the factors that facilitate or limit ICT adoption by SMEs are mainly environmental and external. These include public infrastructure, government policies, inflation, insecurity of data, and others. However, Akanbi (2018) insisted that barriers to ICT adoption by SMEs are because of internal factors, such as leadership, lack of ICT knowledge, inadequate human resources, high rates of technical staff turnover, timidity of

digitalization, and poor budgetary management, which can emanate from the firm's internal operating environment.

Despite these dynamics, information and communication technology is uncontested as a vital coping and management tool that assists businesses with the ever-changing demands of clients and the competitive business terrain of today in general (Gibbs et al., 2003). Apulu and Latham's (2011) study of 25 SMEs in Lagos, Nigeria, revealed that some of the main drivers for ICT adoption were competitive advantage, increased profit, customer satisfaction, speedy information and communication, cost reduction, international market reach, and efficiency of business operations. Although Nigerian SMEs must subsume ICT into their business processes, the choice to do so is based on specific enablers and inhibitors, and some of the significant factors are enumerated and discussed next.

Internal Factors

Financial Capacity/Cost of ICT Implementation

The capital base of small and medium firms, which is lower than those of larger firms, impedes their capacity to invest in ICT. Generally, SMEs that have adopted the requisite ICT infrastructure for their business operations have existed longer than 5 years (CBN, 2020; Kombo, 2011). High operational costs, low profit, imbalance of supply and demand, nonaccess to bank loans, high interest for alternative sources of finance, high cost of living, and inflation are the most common causes of the illiquid state of most SMEs (Bartick et al., 2020). The problem of financing SMEs is not so much the sources of funds but their accessibility. The accessibility of funds is prohibited by the stringent conditions set by financial institutions, lack of adequate collateral and credit information,

and the cost of accessing funds. Consequently, the outcome of these issues is the constant repositioning of ICT to the back burners of the firm's priority list or complete suspension of the investment. Another effect of the financial inadequacy is the introduction of skepticism because the SME owners start to erroneously misrepresent the imbalance between the cost of investing in ICT and the expected benefits and deliverables (Bartick et al., 2020; Bharadwaj, 2000).

The financial challenge faced by SMEs is more glaring, considering that almost all SMEs in Nigeria leverage personal funds as the primary source of their business capital. Only 36.5% of the SMEs operating as sole proprietorships can obtain bank loans, but others cannot (AFDB, 2022; Uche & Ojiakor, 2007). The high acquisition cost of ICT is also compounded by inflation, which has astronomically increased the cost of new equipment, software, installations, related government import duties, and tariffs (de Brito & Brito, 2014; Ekata, 2011). Furthermore, the dynamism and innovation in the IT industry also mean frequent software updates and license renewal purchases to keep up with business demands and maintain a competitive edge. Some of these renewals and purchases are related to some of the standard business programs used by SMEs, such as payroll software, billing software, accounting software, customer relationship management software, and so forth.

Owners of small and medium businesses can combat these prohibitive costs by initiating their ICT deployment journey with basic technology, such as computers and printers, and developing a website for their firms before venturing into more specialized software and hardware for their business operations (Bharadwaj, 2000; Mokaya, 2012). The decision for this progression should also be based on the affordability and

accessibility of these systems and the minimal training required. The internet, social media, and email are primarily free and impactful ICT tools. Also, when used judiciously, they need less bandwidth and have fewer complications when compared to their roles in firm sustainability.

Innovation and Competition

Innovation is one of the buzzwords in modern-day business, enshrined in most organizations' values, mission, and vision (M. Smith et al., 2008; Tornatzky et al., 1990). Contemporary and progressive firms must embody innovation as part of their strategic plans to compete favorably and survive in a world saturated by competition, technological change, and recurring crises. SMEs are significant players in innovation by their size, which gives them the flexibility to be more innovative quicker than larger sized enterprises. To an SME, innovation fundamentally means new products, services, or processes that address customer needs more competitively and profitably than existing ones (O'Regan & Ghobadian, 2006). Previous research has shown that SMEs have an insufficient capacity to withstand the negative consequences of an economic crisis like the one witnessed in the past 2 years during the COVID-19 pandemic (Latham, 2009; Maryam & Park, 2022; Ndemo, 2021; OECD, 2020). This deficiency can be ascribed to the previous challenges discussed and a lack of financial resources (Latham, 2009). Poor management and lack of administrative and technical capacities are also contributory factors (Nafukho & Muyia, 2010). The inability of SMEs to compete favorably with the larger firms also places them in a disadvantageous position in normal times or during a crisis.

Most SMEs are therefore adopting ICTs to combat high business costs; enhance sustainable performance; and support competitiveness, skills, productivity, and profitability in the current deregulated and globalized economy (Kombo, 2011). Also, for a firm to maintain its competitive advantage and value, it must keep pace with what is happening in the world and be innovative (Cohen & Kallirroi, 2006; Kutlu & Özturan, 2008). SMEs that are thriving in the current chaotic business climate are those that use digital technology to innovate through alliances or networking. However, most SMEs in Nigeria and the developing world are unwilling to embrace the wave of digital and technological innovation. The SMEs' use of orthodox communication to source and process information and improve customer service is still rampant, resulting in a disconnect with their present and potential target market and audience who are more digitally inclined (Ashurst et al., 2012). To gain recognition as key market players, SMEs need to innovate, and practical innovation in today's world is impossible without ICT.

ICT Skills and Knowledge Deficiency

The role of CEOs, owner managers, and entrepreneurs is key to a firm, especially in adopting ICT, to know when to digitalize and how the ICT specifications will align with the corporate objectives. Because their knowledge, experience, skills, and decisions influence the firm's operation, lack of perception of ICT value and limited awareness of the benefits of the technology impedes and discourages the implementation of ICT in a company because the owners have an overall say in employing such changes (Stoica et al., 2015).

Low digital literacy training and inadequate technical support can negate the ICT. Fortunately, the modernization and globalization of business have positively impacted the

attitude and perceptions of some SME owners toward adopting ICT as a strategic process (Eze et al., 2011; Ongori & Migiyo, 2011). Many SME leaders are realizing the value of ICT to the success of their companies and are gradually internalizing essential ICT tools into their daily operations. Studies have shown that the market leaders in the SME sector have incorporated ICT in their operations, which motivates other SME owners to toe the same line in their quest for improved performance and continuity of their business entity.

Human Capital

Another enabler or inhibitor of ICT adoption closely linked to ICT knowledge is a firm's human capital. The strategic implementation of ICT for corporate growth and sustainability demands specialized skills, knowledge, and capabilities in ICT. The innovative environment of modern business requires workers equipped to recognize, understand, and respond to market developments that will yield maximum profits for the company (Arvanitis, 2005). This can only be achieved by using the necessary ICT techniques and processes. The recognized ICT skills gap can be bridged through targeted training. Eei et al. (2012) asserted that the lack of ICT skilled workers or the requisite funds to train existing staff in ICT knowledge is one of SMEs' main obstacles to ICT adoption. Expectedly, SMEs with ICT-based staff will have a higher ICT adoption rate with the additional benefits of a more competitive advantage than those lacking an ICT-skilled workforce.

Nature of Business/Industry Type and Firm Size

Most small and medium-sized firms adopt ICT based on their niche in business, markets, and clientele. Uwalomwa and Ranti (2009) discovered that sector type plays a significant role as an enabler in the ICT adoption process of SMEs. Although firms in

manufacturing had a low adoption rate, SMEs in the ICT, hotel, and tourism sectors have high levels of ICT implementation because of the demands of their clients, which are based on the nature of their business. SME technology start-ups would naturally adopt advanced and sophisticated communication technologies as critical resources because they enable the performance of their business operations and the achievement of their strategic objectives (Mazzarol et al., 2014).

SMEs' decision on what ICT products to adopt depends on the concrete benefits they can bring to their core business. These expected benefits are cost savings, operational efficiency, improved customer service, effective supply chain, access to new business opportunities and market information, competitive advantage, and brand internationalization/globalization (Kaplan & Norton, 1992; Melville et al., 2004).

The size of an SME and its years of operation are additional issues for consideration when determining the implementation of ICT. Size refers to the number of workforces, market reach/share, business capital, turnover, stock, and other related factors. A medium-sized firm may be quicker in adopting ICT than a smaller-sized one. A firm with over 30 employees with local and regional branches or outlets may see the need for ICT adoption because it aids in the assimilation and distribution of internal and external communications (Melville et al., 2004). The enhancement of transparency and efficiency in management's decision-making processes is also one of the positive outcomes. A cost-benefit analysis is also employed alongside the firm's short-term and long-term growth plans (Beck et al., 2005).

External Factors

Available Infrastructure

Weiner and Rumiany (2007) maintained that ICT implementation in the developing world is often inhibited because some amenities are unavailable, inaccessible, or of poor quality. Infrastructure scarcity in Nigeria is mainly related to power or electricity, road network, and potable water supply, among several others. The consensus in previous studies is that unstable power supply or insufficient electricity remain the leading factors influencing the utilization and adoption of ICT in the Nigerian SME sector (Apulu et al., 2013). The cost and burden of generating power via alternative sources, such as generators or inverters, have eroded most SMEs' profitability and eventual survival (Agwu & Murray, 2015; Igwe et al., 2018). Considering the current energy crisis and disruptions to the gas supply chain precipitated by the ongoing war in Europe, this financial burden relegates ICT adoption to the bottom of the list. The government needs to formulate policies and measures that will improve the electricity generation and supply problems in Nigeria. This will also assist SMEs in using ICT, which will help drive the country's economy.

ICT Infrastructure in Nigeria

SMEs' most common ICT tool is the internet (Apulu et al., 2013). Internet connectivity and usage require high-speed broadband, and with the advent of the fifth-generation networks (5G), increased connectivity speed presents more opportunities for the business ecosystem. Consumer demands further propel internet usage and advancement in mobile technologies. Most of these demands stem from large and small firms constantly seeking areas to enhance efficiency and productivity. This study furthers

the discourse on why SMEs need to be significant players in demand for ICT. The general belief from the reviewed literature is that the estimated number of connected devices on the internet is projected to reach 50 billion any time from 2025 onwards (Olise et al. 2014).

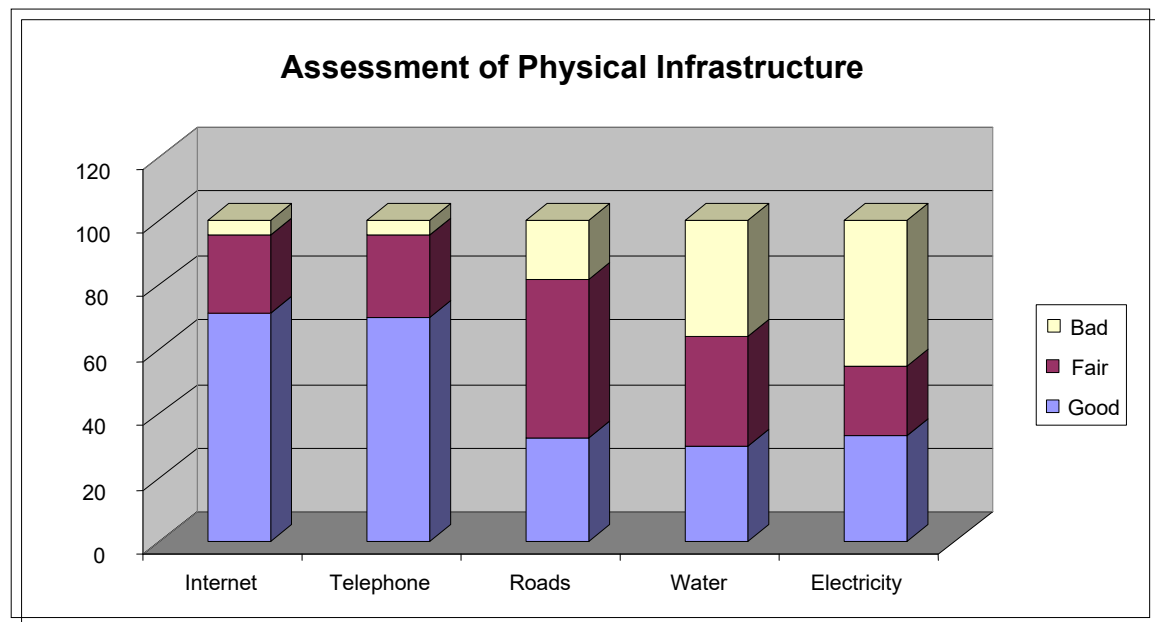
Gibbs et al. (2003) observed that the liberalization of telecommunications and other ICT infrastructures in many developing countries influenced the diffusion of e-commerce, especially among SMEs. This is the case in Nigeria as telecommunications deregulation also correlates with the increased establishment of SMEs in the country (Olise et al. 2014). The mobile phone, a structural and inherent part of telecommunications, is a unique vessel of economic development because of numerous innovative advancements since its invention. Small businesses have been known to initiate and conclude business transactions on mobile phones, leading to reduced operational costs (Gruber et al., 2011).

This study investigated the ICT strategies SMEs used in Nigeria for their growth and sustainability. So far, previous research has shown an undeniable link between accessibility and ICT adoption among SMEs. In other words, the adoption of ICT will increase if the infrastructures can be available and assessed (Jennex et al., 2004). Despite the challenges and limitations of ICT adoption by SMEs, a study conducted by Oyelaran-Oyeyinka during the 2020 FSS international conference on *SMEs: Issues, Challenges, and Prospects* revealed that internet and telephone infrastructure was more available compared to other obstructive factors.

Figure 1 shows that internet and telephone ranked higher than roads, water, and electricity in evaluating issues faced by SME leaders in the country.

Figure 1

Areas of Infrastructural Deficiency in Nigeria



Note. From *FSS 2020 International Conference: SME: Issues, Challenges, and Prospects*, by B. Oyelaran-Oyeyinka, 2020, p. 10 (https://www.cbn.gov.ng/fss/wed/SME_Issues,%20Challenges%20and%20Prospects_Oyeyinka%20Banji.pdf).

Current statistics from NCC (2022), the regulator for the Nigerian telecommunications industry, also give credence to the data in the figure and show impressive growth in Nigeria's telecommunications sector. As of August 2022, there were 209 million mobile phone subscribers, 152.2 million internet subscribers, and a broadband penetration across the country of 44.65%. In addition, teledensity, the number of active telephone connections per 100 persons living in an area, stands at 109.9%. This shows that lack of ICT infrastructure, particularly broadband, is not the issue. The challenge lies in the lack of awareness of broadband availability, which automatically limits access. The NCC (2022) stated that unserved and underserved areas of the country, which are the rural areas, still use the second and third generation mobile networks (2G and 3G) for most of

their communication. However, this poses significant problems to the quality of service and experience in their telecommunications usage. The ripple effect is a wariness and distrust of effective service in using the basic ICT tools for their business.

Another dimension to the argument is the availability of the necessary ICT infrastructure in resource locations. Most ICT infrastructures are in major urban cities, instigating healthy business competition among SMEs (Adekunle & Telia, 2008; Imeopkaria & Edigbona, 2014). However, the reverse is the case in rural areas with little infrastructure. The result is an increased digital divide and low competition, efficiency, growth, and sustainability for rural SMEs. Rural, underdeveloped, and underserved areas need an urgent injection of small and medium-sized firms for rapid development and poverty reduction. Diversifying telecom infrastructures such as 3G, 4G mobile networks, affordable broadband, and other related tools will facilitate this development objective.

Insecurity and Unstable Business Environment

The World Bank (2022) states that the current migration rate of Nigeria stands at - 0.29 per 1,000 population. This means that the number of people leaving Nigeria is slightly higher than that of those entering the country. In the past 2 decades, the net migration balance of the country has stayed negative (Statista, 2022; The World Bank, 2022). The primary causal factor for this mass migration is the intractable insecurity in the country. Nigeria ranked 148th and scored 2.873 on the Global Peace Index ranking (ALNAP, 2018). This score is evidenced in the constant acts of terrorism, ritual killings, religious and tribal conflict, kidnapping, insurgency, rampant theft, and armed robbery that have become the new normal in the country. The federal government's lack of actionable and successful tactical solutions has been disheartening. Furthermore,

considering the attendant poverty and hardship, it is natural to expect that the penchant or appetite for new investments such as ICT is not the focus of the average Nigerian entrepreneur because of the fear of investment loss through fraud or robbery (Achumba et al., 2013).

The consequences and adverse effects of insecurity on economic development are mostly meted out on SMEs because of their vulnerability to attack because of poor security mitigants or measures (Nwachukwu, 2019; Othman et al., 2015). Potential investment opportunities and much-needed FDIs through networking and ICT platforms are not seized by SMEs whose primary concern is preserving life. New investors in Nigerian SMEs are also reluctant to undertake partnerships or collaborations, which stifle the sector's growth, leading to a lack of financial capacity to adopt the requisite ICT infrastructures/tools. The vandalization of telecom base stations and ICT equipment has incapacitated several parts of the country, making ICT investment impossible or challenging (NCC, 2022).

Socioeconomic and Cultural Influences

The Nigerian society is steeped in a socioeconomic culture driven by subsistence and avoidance of poverty, hence the proliferation of small and medium businesses in the urban and rural areas. Several studies confirmed that business performance and success manifest in a particular firm's profitability and growth based on its short-term or long-term objectives (de Brito & Brito, 2014; Flatt & Kowalczyk, 2008). The bottom line of most Nigerian SMEs, especially in the rural areas, is to subsist or exist, which is a short-term goal. Therefore, consolidating long-term goals by exploiting investment in ICT products and equipment may not be within the horizon of their corporate vision.

Decisions to adopt ICT vary between societies and are based on the attitudes of the people in these communities. Because culture is based on shared identifiers and characteristics, it is a solid and decisive factor in decisions to adopt and use technology (Apulu & Ige, 2011). The attitudes and decisions of the majority to use or avoid ICT usually influence the minority. Cultural barriers to ICT adoption may also manifest in the nonacceptance of ICT products and processes such as e-commerce. Most developing nations are intrinsically motivated by community, and e-commerce solutions implemented by SMEs in particular locations may not yield the expected benefits because face-to-face transactions and cash exchange are still preferred (Ladokun et al., 2013; Wanyoike et al., 2012).

Furthermore, shared ideas and perceptions can be accepted as fact without empirical evidence. This type of influence that can enable or deter the implementation of ICT by SMEs is driven by fear and is heightened in Nigeria because of factual criminal actions and fraudulent e-payments. The justification for such fears stems from the rate of cybercrime, data security, and privacy illegalities. These are some of the issues that trigger a withdrawal from or distrust of ICT-related products and operations. Every innovation and human necessity attracts various clientele with either a legal or an illicit rationale for its usage (Ifinedo, 2006; Weill & Broadbent, 1998). The literacy level and quality of education in society are significant determinants of ICT appreciation in that environment and enforce the wariness and mistrust of what businesses do with personal and credit card information (UN, 2015). Based on the previous studies reviewed, this aspect of the socioeconomic discourse is critical in the adoption of ICT among Nigerian

SMEs. Data security and integrity assurance while using ICT tools provide confidence to some people to embrace current state-of-art technology.

Organizational culture is another dimension of the debate on the relationship between culture and ICT adoption. SMEs are generally adaptive to environmental trends. Firms with the requisite staff to smoothly transition from analog to digital operations are more likely to adopt ICT (Weiner & Rumiany, 2007).

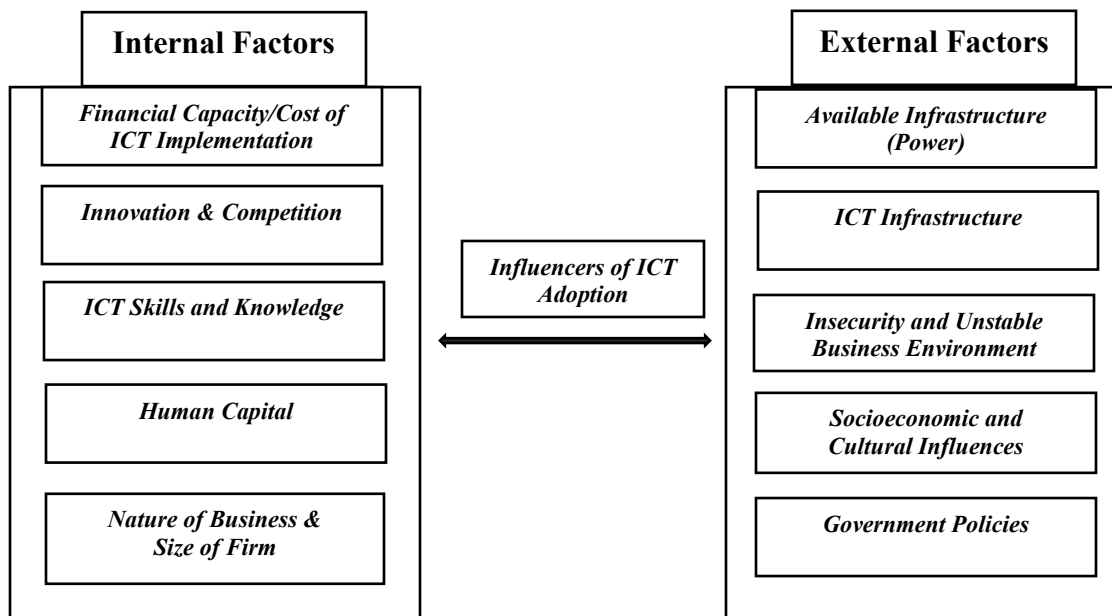
Strategic Government Measures to Facilitate ICT Adoption by SMEs

Several studies have established that adequate provision of public goods determines any government's success because taxpayers' funds must be judiciously spent according to their needs and in a reduced time scale (Norman-Major, 2011; Shafritz & Hyde, 2017). The various conflicts and economic dynamics that occur in different countries diffuse to other countries because of globalization. Khan (2018) insisted that globalization impacts governments and mounts constant pressure for diligence in governance. Copp (1999) stated that legitimacy is the ultimate reward for any government that assiduously delivers public services. Resources are constantly depleting and insufficient, and a lean government can attain and retain a legitimate status by conscientious spending and cost-cutting measures that do not truncate the delivery of public goods. The world's major economies (United States, Britain, Germany, etc.) are all propelled by entrepreneurship, specifically small and medium-sized businesses. The active participation of the private sector in driving the economies via well-formulated and implementable government policies and regulations enables the government the needed focus and resources to attend to the business of governance and public service (Lyver & Lu, 2018).

The vital role of government in providing an enabling environment for SMEs cannot be overemphasized. Developed and emerging markets that succeed in delivering a high standard of living for their citizenry are supported by strategic government policies and interventions targeted at encouraging and sustaining SMEs (CBN, 2020). This is done by ensuring that the necessary innovative climate is created through the availability of subsidized ICT training, programs, and policies. These actions aid in enhancing the performance of the SME industry because of the crucial roles they perform in socioeconomic development. Conversely, Nigeria has historically shown the barest level or lack of commitment to boosting the local SME sector, hence the high rate of closures and liquidation experienced in the industry. Figure 2 is a schematic representation of the suggested areas of government interventions.

Figure 2

Summary of ICT Enablers and Barriers



In countries regarded as developmental peers of Nigeria, SMEs contribute much more to GDP than currently observed in Nigeria. Lucchetti and Sterlacchini (2004) and Ndemo (2021) stated that the governments of these economies have shown consistent commitment to the development of SMEs by establishing structures and policies that incentivize entrepreneurship. These programs include access to finance and loan facilities, basic amenities and technological infrastructure, subsidization of local ICT skills and knowledge training, and a solid legal and regulatory framework.

Table 1 is an encapsulated representation of suggested measures by the CBN (2022) on how the government can support the SME sector in its stride toward ICT adoption. Other areas of support established by previous studies are discussed in the next sections.

Table 1

Government Intervention for ICT Adoption by SMEs

Issue	Measure
Increase investment in critical infrastructure	Electricity, road, broadband
Create enabling financial incentives and policies	Tax Policy: Exemption of production taxes Half of the income taxes and tariffs of crucial ICT equipment Pick up 10% of ICT R&D expenses Exemption of importation taxes on significant imported project
Development funds	Allocation of annual funds to support technology adaptation, technology, and commercialization
Subsidies	Allocation of loan subsidies to support the application of computers
Licenses	Importation license management and subsidization of computers and components

Financial Interventions

Oyelaran-Oyeyinka (2020) stated that the government's provision of an enabling environment is indispensable to SMEs' overall progress and survival. This literature review has demonstrated that firms cannot survive without ICT in the current technologically dominant business ecosystem. Funding ICT investment has been identified as a significant challenge for SMEs in adopting ICT because of a lack of finance and capital. There have been low-level interventions by the federal and state governments in this area, such as federal government SME grants to targeted industries, low-interest loans from the Bank of Industry and Bank of Agriculture, and CBN's SME initiatives (CBN, 2020; Nafukho & Muyia, 2010). Recently, Lagos State set up the Lagos State Entrepreneurial Trust Fund, which offers quick access to business loans for current and prospective SME owners. The government can also combat this financial obstacle by guaranteeing long-term soft loans and establishing an SME funding agency (Wattanaputtipaisan, 2010). This should be done by the development of regional agencies for assessing and monitoring of the ICT adoption needs of SMEs. Afterward, the companies would be availed with funds at a very low-interest rate with a long-term repayment period.

The government support in the preceding paragraph is commendable but grossly insufficient in ameliorating SMEs' economic and financial struggles. The Agricultural Development Bank that is mandated to give loans to SMEs requires collateral, such as real estate or cash backing, which is above the financial capacity of most SMEs (Elebeke, 2020). The level of support from the Nigerian government and banks is estimated to be 33.3% and 25%, respectively. This is inadequate because the Nigerian government is

expected to effectively regulate economic activities between SMEs and banks (Oyelaran-Oyeyinka, 2020).

The issue of multiple taxations and regulations has the negative effect of starving SMEs with the needed capital for ICT adoption. Small and medium-sized businesses are subject to taxes and levies from local, state, and federal governments. It is the responsibility and function of the government to streamline these taxes so that SMEs can stay afloat.

Subsidization of ICT Training

Another critical area for Nigerian government intervention is bridging the country's ICT skills and knowledge gaps. SMEs can then engage workers with at least rudimentary ICT skills, reducing training costs. The government can facilitate this ICT knowledge gap objective by providing free or subsidized training aid through ICT technical training centers as well as instigating the promotion of proper ICT teaching in public and private schools (Apulu & Ige, 2011; Apulu & Latham, 2011; Uwalomwa & Ranti, 2009). The federal government initiatives on ICT capacity building through the various platforms such as BIG/GEM of the Federal Ministry of Trade and Investment and Youwin Connect of the Federal Ministry of Finance are commendable starting points (CBN, 2022; Oloruntoba, 2018).

Actionable ICT Policies and Regulations

Previous studies have identified challenges with government policies and regulations and overall lack of support from the government as factors militating against the successful implementation of ICT among SMEs (Adekunle & Telia, 2008; Nikmah et al., 2021; OECD, 2020; O'Regan & Ghobadian, 2006; Teo & Pian, 2003; Tornatzky et

al., 1990). Government ICT policies and intentions are also motivational catalysts to replicate ICT strategy within SME firms. Li (2014) argued that government policies are meant to assist SMEs in increasing their competitiveness and also enable SMEs to have more significant influence concerning the use of ICT.

ICT is mainly powered by broadband, and some of the policies developed by the Nigerian government to tackle the broadband challenges include the National Digital Economy Policy and Strategy. The policy was formulated in 2019 with the fundamental strategic vision of revolutionizing Nigeria's digital ecosystem to improve the citizenry's quality of life (Czernich et al., 2011; NCC, 2022). It is focused on creating awareness of the digital strides and available infrastructure that can be used by large and small businesses to achieve firm growth and sustainability. The Nigerian National Broadband Policy (NNBP) 2020–2025 is designed to address ICT priority areas, which are the implementation of broadband connectivity and execution of a plan to deploy 4G across the country as well as the implementation of a digital economy policy and strategy (NCC, 2022).

These are the foremost ICT policies of the government with the principal goal of enhancing the development of Nigeria's digital economy through the diffusion of available, accessible, and affordable broadband. It is hoped that the implementation of the policies improves and diversifies the nation's economy through the delivery of a minimum of 25 Mbps in urban areas and 10 Mbps in rural areas, with adequate coverage available to at least 90% of the population by 2025 at a price not more than 2% of median income or 1% of minimum wage per 1GB of data (NCC, 2022; Nikimah et al., 2021). The first NNBP enacted in 2013 led to a successful broadband penetration status of 32%

in 2018 from 6% in 2013, surpassing the target of 30%. The new plan has led to the current broadband penetration rate of 47% (NCC, 2022) as of May 2022. However, there are still issues to be addressed in broadband diversification. These challenges include inadequate fiber infrastructure in several towns and cities that will effectively distribute the adequate bandwidth from international submarine cables at the landing points, high right-of-way charges, multiple regulations and taxation, and delays in obtaining site acquisition permits (Adepetun, 2022; NCC, 2022).

Implementing the plan will eradicate a major challenge for SMEs in rural areas whose desire to adopt ICT is truncated by the nonavailability of broadband. The ripple effect of this ICT adoption by SMEs is increased jobs, improved socioeconomic development, and sustained economic growth, among others.

Provision of Basic Infrastructure

One of the critical responsibilities of any legitimate government is the provision of essential public infrastructural facilities. This will reduce the financial stress on SMEs, allowing them to have more funds for ICT adoption. Aside from telecommunication infrastructure, there is an urgent need to develop policies and measures to improve Nigeria's electricity generation and supply problems. The cost of gas for private generation of power supply has crippled the financial stability of most SMEs, leaving them incapable of implementing ICT in their firms (Ekata, 2011). The high cost of transportation of products is a direct result of the poor road network and lack of choices of transportation, such as the rail system and waterways. Nigeria and most developing nations are grossly underdeveloped in their transportation system compared to other countries where SMEs succeed.

Easing these infrastructural burdens will improve the chances of SMEs adopting ICT because they will have increased supply and demand chains that will require proper coordination through ICT (Apulu & Latham, 2011; Cerfis & Marsili, 2015). The bottom line is increased profits, which will promote and support the growth of the business. Increased efforts in developing public and private sector partnerships in infrastructural provision is another solution that can help build adequate infrastructures.

Other areas that require government intervention include corruption and extortion of SMEs. The demand is low for locally made goods because even government ministries, agencies, and departments do not patronize SMEs. High cost of production, inflation, and poor management of resources are also areas of concern. These issues create numerous problems of high operational costs and low profits for the SME leaders. In addition, these problems divert the SME's attention from ICT adoption and account for the low survival rate of these businesses (Igwe et al., 2018; S. Parker et al., 2002). Nigerian SMEs have compelling growth potential to contribute more to the national GDP if accorded the necessary support for effective adoption and implementation of ICT. As the most populated country in Africa, the ever-increasing population is a socioeconomic disaster if the government does not provide adequate public goods and services to support viable self-employment via SMEs. The motivation of the government and public administrators in assisting and championing the development of a robust SME sector is the validation of its legitimacy among the citizenry (Copp, 1999).

SMEs Leadership and ICT Adoption

The leadership of any business organization is influential to the success and sustainability of that firm. The principal purpose of most organizations is to attain a

reasonable level of sustainability that promotes the retention of its entity and continual increment in corporate performance (Amagoh, 2009; Choudary et al., 2013; Hashim et al., 2012). Examples of companies that have gone bankrupt because of leadership challenges abound in the business ecosystem. Although this is usually more publicized for larger organizations, instances are rife in the small and medium-sized sector (Agu, 2006; Ghobakhloo & Tang, 2013).

One of the influential factors in the adoption of ICT by SMEs in Nigeria is the intent of the business owners. Wanyoike et al. (2012) attributed the success of ICT adoption by successful SMEs to the firms' leadership. This influence comes from awareness of the benefits of ICT and the beneficial platforms for the growth and efficiency of any business. Wanyoike et al. further stated that the simplification of work processes, efficient communication, coordination within the company and across value chains clients, and improved customer satisfaction and quality of experience were all motivational goals and outcomes that instigated increased adoption of ICT. SMEs are peculiar in their style of leadership or ownership, and this uniqueness allows them to have more flexibility and adaptability to market and in environmental changes (Hassan & Olaniran, 2011). In a survey based on a sample of 66 SMEs in Lagos, Nigeria, Apulu et al. (2013) discovered that 47 SMEs used ICT as a business strategy, mostly the internet and Microsoft packages. Insufficient power and leadership style were identified as the significant barriers to nonadoption by the remaining 13 SMEs. The fact that over 95% of the respondents are SME leaders supports the studies on the extent of SME leadership's influence on adopting ICT in their organizations (Apu et al., 2013).

Gabbar et al. (2014) asserted that strategic leaders are needed for any ICT adoption goals. They stated that strategic leaders are those who can articulate a specific, measurable, attainable, realistic, and timely (SMART) vision of the future that integrates innovative characteristics that will spur the firm to success. The realization of this creative vision is directly related to the adoption of ICTs. These visionary SME leaders will adopt ICT because they appreciate the essence and importance of ICT to actualizing corporate goals and sustainability (Mazzarol et al., 2014; S. Parker et al., 2002). The reluctance to explore and exploit the inherent advantages of ICT is sometimes rooted in the ICT knowledge deficiency of most SME leaders. A critical feature of such strategic leaders is the self-awareness to rectify the elements that may impede the achievement of the corporate objectives. Jacks et al. (2011) and Kollberg and Dreyer (2006) stated that SME owners who value and recognize the place of ICT in attaining a competitive edge will institute ICT training programs that will equip them with the necessary skills. Such training will also be cascaded to everyone in the firm to understand the shared vision of strategically utilizing ICT for growth and performance (S. Parker et al., 2002).

Analysis from several studies has shown that the demographics and characteristics of SME leaders are vital determinants of ICT adoption. The ICT adoption rate is much higher in companies with young leaders and executives than those with older executives. Young leaders are more innovative and more inclined to take risks because of their drive to succeed as market leaders. The older SME owners are more risk averse, less contemporary and aware of trends, resulting in a more orthodox or conservative approach to ICT investment (Jennex et al., 2004; Kowo et al., 2019).

Leadership Styles in SMEs and Impact on ICT Adoption

The leadership style of an SME owner may significantly affect the decision to adopt ICT. The most common types of leadership exhibited by business owners and executives are transformational and transactional (Analoui et al., 2013; Anderson & Sun, 2017). Research has demonstrated a connection between the leadership style of SMEs and the development of ICT initiatives that foster successful ICT implementation (Consoli, 2012; Kellis & Ran, 2013).

Transformational leadership is directly derived from the word *transform*, which means to cause a significant change (Burns, 1978, as cited in Khan, 2018; Gabbar et al., 2014). This statement summarizes the central premise of this leadership style because it encourages learning for both the leaders and the followers. In a world dominated by challenges catalyzed by constant change, transformational leadership transforms the values and commitment of followers or the workforce to elevate personal and company performance (Bass & Avolio, 1994). Adopting ICT as a strategy for growth is a vital change element that will improve the performance indices of SMEs in the country, resulting in a sustainable SMEs sector. Transformational leaders of SMEs are more likely to stimulate an innovative working environment that will hasten the implementation of ICT because they encourage and empower their staff (Consoli, 2012; Dvir et al., 2002). Furthermore, studies have shown a positive correlation between transformational leadership style and job satisfaction among employees of SMEs (Irani, 2002; Ladokun et al., 2013). A higher level of job satisfaction would generate an increased commitment to innovation, which is vital in ICT adoption.

The transactional leadership style depicts the carrot and sticks approach or trade by barter. Something is exchanged for another—a quid pro quo. In this case, the leader trades rewards for loyalty and commitment, and punishment is handed out for noncompliance to the rules (Bass & Avolio, 1994). Bonuses, promotion, and recognition are exchanged for compliance, good work, results, and goal achievement. SME owners with a transactional leadership style will adopt ICT if the short-term benefits are directly commensurate to the cost (Kellis & Ran, 2013; Lucchetti & Sterlacchini, 2004). The employment of ICT would be justified based on instant application to the firm's operations and the immediate rewards. Workers in the organization who are followers of such a leader would be tasked with ensuring that maximum and instant benefits are received from any ICT product or tool implemented in the firm (Sakiru et al., 2013).

Studies have shown that these are the two dominant leadership styles in Nigeria's SME sector. These styles enhance organizational sustainability because they prioritize motivational directives, employee well-being, and the development of a culture of innovation and entrepreneurship among employees. These are all harnessed within the framework of adequate and appropriate recognition and reward schemes (Franco & Matos, 2015; Sakiru et al., 2013).

ICT Business Strategies for SMEs

Most developing nations such as Nigeria have adopted the strategy of developing entrepreneurship through SMEs as a viable process for generating jobs and revenue as well as creating opportunities for enhancing the socioeconomic well-being of their citizenry (Kowo et al., 2019). Statistics show that approximately 68% of the small businesses in Nigeria are in the manufacturing, education, wholesale, and retail sectors.

In comparison, 45% of medium enterprises in the country operate in the wholesale, retail, manufacturing, healthcare, and social services sectors. In addition, 65% of SMEs in Nigeria operate as a sole proprietorship, 21% are private limited liability entities, 6% are faith-based organizations, and 5% operate as partnerships (Adeosun et al., 2009; Imeopkaria & Edigbona, 2014). However, most of these SMEs are liquidated in the first 5 years of their existence mainly because of the intense competition they face from larger enterprises that are more stable and have higher financial and management capabilities as well as better and skilled human resources (Assantea et al., 2016).

This literature review has enunciated the importance of SMEs to the social and economic well-being of a country's citizens. Therefore, the high failure rate of SMEs in Nigeria portends severe financial pressure on the nation's economy because it reduces the derivation of the benefits offered by SMEs as a platform for increased quality of living. It behooves the government and the SME sector to formulate tested strategies to mitigate the challenges that lead to failure (Cerfis & Marsili, 2015; Stoica et al., 2015). Small and medium-sized businesses should adopt strategies that use their strengths to exploit opportunities while avoiding or improving their weaknesses (Mazzarol et al., 2014).

SMEs and larger organizations differ in various ways ranging from leadership, size, operational capabilities, management, and financial capacity. SMEs' international operability and depth of specialization are considerably less than that of larger enterprises (Weill & Broadbent, 1998). Nevertheless, the recurring issue is that the economic importance of small and medium businesses remains unquestioned (Apulu & Ige, 2011). SMEs' strategic advantage over larger organizations leads to greater flexibility, reduced bureaucracy, and organizational hierarchy. The difference in size is also beneficial to

SMEs because it creates an informal management style that facilitates better communication and information processing, improved supply and demand chain relationships, and more excellent proximity to the market (Vinzant & Vinzant, 1996). According to Todd and Javalgi (2007), SMEs have increased the competitive intensity of the market and reduced the monopolistic positions of large organizations, which encourages the development of entrepreneurial skills and innovation. These positive characteristics can be strategically transformed and cultivated as areas of competitive advantage through ICT (Misra & Puri, 2016; OECD, 2020).

The benefits of ICT are innumerable and have been discussed in detail in this chapter. Nevertheless, the use of ICT in SMEs can be summarized in terms of sustainability or business liquidation. No modern business can survive without ICT because of the competitive gains it affords firms that implement technology into their business processes (Lyver & Lu, 2018; Manu, 1998). However, the consequences of SMEs not incorporating ICT as a strategic means for sustainability negatively impact SMEs, especially concerning high production costs, operational inefficiencies, low profits, and business closure (Hassan & Olaniran, 2011).

Furthermore, the lack of ICT utilization results in the inability of SMEs to network and connect with potential collaborators and partners who will elevate enterprise performance and growth. It also eliminates the possibility of being updated with adequate market information and knowledge of new products. The ability to enhance customer service through efficient communication and engagement is also eroded. The adoption of ICT as a strategy for growth helps the owner managers of SMEs recognize opportunities

and threats in their business environment and choose appropriate target markets for their products and services (Ongori & Migiro, 2011).

This study investigated a deep understanding of the influence of ICT on the sustainability and business of SMEs in Nigeria. The need to broaden the operational business field of SMEs through the integration of ICT resources is an underlining reason for this research because it improves the country's economic growth at large. The adoption and sustained ICT integration by small and medium-sized firms can be actualized through deliberate strategic intent. Strategy is a widely researched concept and a crucial factor for the sustainability of any business. The strategic plan of any business sets the strategic compass and direction for the organization for the duration and life span of the program. It helps firms visualize the big picture by homogenizing futuristic thinking, objective analysis, and evaluating targets that will project future courses of action (Vinzant & Vinzant, 1996). Strategic issues management is also a precondition for any strategic plan because it ensures that a detailed environmental scan is done so that companies will be conscious of current events and environmental changes and incorporate ICT strategies into their business plans as a way to mitigate or manipulate those issues to their advantage. This process will realize efficiency, effectiveness, business stability, and growth (Heath & Palenchar, 2009).

Sirmon et al. (2010) identified innovative ICT tools as key strategic drivers of sustainable competitive advantage. They asserted that leaders of small organizations should consider strategic planning when positioning their products and services. These products and services should fill a niche for the company and help achieve success in the marketplace. It is common for organizations to think they need revolutionary thinking to

achieve innovation. However, innovation is also performed based on how an organization executes its strategies, and SMEs should add a sustainability lens within their strategic planning framework (Goodstein et al., 1993; Poister & Van Syke, 2002). This will help properly align their offerings to current economic, environmental, and social value demands (Mazzarol et al., 2014). SMEs in Nigeria constantly struggle for competitive advantage because of technology, globalization, and knowledge changes in today's business environment. This means that organizational leaders must execute new strategies for survival in the competitive environment. They can achieve this by creating a business environment in which problems can rapidly be converted into opportunities and easy acclimatization to dynamic market conditions (Mazzarol et al., 2014). SMEs in Nigeria can use ICT as the means to create these opportunities. ICT is also a veritable tool for facilitating strategic planning and business forecasting, which boosts process efficiency and effectiveness (Apulu & Ige, 2011). Research has shown that leaders of SMEs who adopt ICT perform better and are market leaders through the exhibition of specific products and services and excellent customer care (Wanyoike et al., 2012).

However, the strategic use of ICT should also be sector based; otherwise, it renders the implementation a wasteful venture. Maguire et al. (2007) concluded that SMEs could gain a competitive advantage using ICT as a critical and unique resource. Conversely, other studies, such as the one by Acar et al. (2005), have shown that using ICT in SMEs in the building and construction sector was not needful or strategic. The consideration of industry and application is essential in the decision-making process of strategic ICT adoption.

ICT Business Models and Solutions for SMEs

This study has discussed extensively the standard ICT tools that SMEs can employ as a strategy for business survival. These tools include email, telephones, cell phones, smartphones, computers, video and web conferencing, social networking, online collaboration, and productivity platforms. The diffusion of ICT tools has been credited with creating significant business opportunities. The result is visible cost reductions, gains in profit and productivity, organizational efficiency, and definite competitive advantage (Kariuki, 2009).

To correctly identify and determine the ICT products and models that will produce the maximum benefit and value for their specific business, small and medium firms need to consider some critical issues before initiating an ICT strategy. Some of these are the firm's level of ICT knowledge and skills, system integration, customer and supplier orientation of ICT, and the readiness of their suppliers and clients to adopt the ICT processes introduced by the firm (Lucchetti & Sterlacchini, 2004; Slevin & Covin, 1990). Slevin and Covin (1990) identified that autonomous SMEs that are offshoots or partners of more prominent companies succeeded in implementing their ICT strategies because of the need for effective communication with their suppliers, clients, and their head office. Therefore, partnership or collaboration may motivate the adoption of ICT strategies and which tools to utilize.

Ab initio, it was mentioned that most SMEs in Nigeria are involved in wholesale and retail business (68% of small businesses and 45% of medium companies). Therefore, discussing the significant ICT business strategies beneficial to this particular sector is necessary.

Internet

The internet is regarded as one of the foremost ICTs alongside telecommunications products (such as telephones), information kiosks and transaction machines, multimedia, and office equipment, such as copiers and fax machines. It is a strategic ICT for SMEs regardless of sector or business orientation because it has become an indispensable global tool for growth and performance. Large and small businesses employ the internet to become more productive and competitive (Bi et al., 2017). The internet is said to fundamentally reshape the course of companies and is widely acknowledged as technology that has profoundly enhanced business and information processes (Raymond & Bergeron, 2008).

Butler and Peppard (1998) identified the internet as one of the most critical ICT tools because of the minimal cost involved and the variety of purposes it serves for small and medium-sized companies. According to Butler and Pappard, although the internet is mainly used for business-to-business transactions, it is also the best ICT tool for business-to-consumer commerce. Today, the internet has taken over the traditional marketplace as a medium for communicating with customers or potential customers. The internet gives SMEs access to a global audience who can be used for active participation in electronic commerce and information distribution and dissemination. It also offers a richer picture of a company's products and services through voice, video, text, and images. This information can be customized to the consumer's requirements for effective maximization and identification of consumer needs. This leads to product differentiation and consumer engagement. The delivery of particular goods and services, such as music, news, computer software, and other digital products, has been simplified for customers

without the barriers of geographical locations (Raymond & Bergeron, 2008). The use of internet technology is very popular with SMEs because it presents a unique opportunity for participation in electronic commerce and a global market.

SMEs can quickly adopt the internet as a strategic ICT tool because of its easy access via low-cost browser software, making it a relatively low-cost IT infrastructure. There are also no entry barriers, enabling SMEs to explore electronic commerce technologies that meet their specific business needs (Johnston et al., 2007). This opportunity for global reach has continually been embraced by small and medium-sized firms. O'Connor and O'Keefe (1997) discovered that small and medium businesses used their websites to attract new customers and strengthen supplier and customer relationships. Fundamentally, the internet presents an arena for small companies to create electronic commerce strategies that enable them to compete effectively against large companies and sustain their business.

Some of the familiar and popular web platforms and applications that can be adopted or used by small and medium firms are e-shops, e-procurement, e-malls, e-auctions, third-party marketplaces, virtual communities, value-chain integrators, collaboration platforms, information brokerage, trust, and other services (Bi et al., 2017).

ICT Strategies for SMEs in Wholesale and Retail Supply Chain Management

Although all businesses use the internet, there are specialized ICT solutions and tools for SMEs in the wholesale and retail sectors. This sector represents over 40% of SMEs worldwide and demands special attention in the discourse of ICT strategies. Supply chain management (SCM) is a practical and productive ICT strategy SMEs in Nigeria can use for sustainability. Crook et al. (2008) defined SCM as the process used

by businesses to manage recurring purchases. According to Crook et al., SCM is also the management of converting goods and services from their raw or basic form to a finished product. This flow or chain includes all the individuals, organizations, resources, activities, and technology involved in creating and selling a product. It also entails everything from the movement and delivery of source materials from the supplier to the manufacturer, inventory, and order placement till its eventual delivery to the consumer (Crook et al., 2008).

The prominent item that takes up 75% of the operating cost of SMEs is purchased stock, and effective SCM can lead to reduced costs. SCM is a crucial determinant of growth, performance, and stability for the firm through reduced inventory, reduced frequency of orders, improved quality, and product or service offering through enhanced innovative product design (K. Tan, 2002). Within the RBV framework, J. S. Smith et al. (2014) identified several resources as ICT strategies that can improve competitiveness in wholesale and retail businesses. SCM strategies are the most significant. The RBV framework enables ICT resources to be manipulated according to market demands and environmental changes. Because SMEs are flexible in structure and management, they are easy to strategically enhance their SCM process efficiency through ICT. Reddy and Rao (2014) advised that this strategic modification of resources should accommodate strategic issues identified during a strength, weakness, opportunity, and threat (SWOT) analysis of the business environment.

Zhang et al.'s (2019) study of the relationship between information sharing, SCM, and performance found that any form of information asymmetry in the supply chain leads to an increase in demand fluctuation, which results in high cost and inefficiency in the

supply chain. SMEs can strategically synergize adequate and correct information from the internet and other web applications with their supply chain platforms to achieve an effective process (Shih et al., 2012). Doing this will elevate the SCM as a process that increases the ability of organizations to outsource business activities and improve the efficiency of their operations as well as the creation of value through the fusion of consumers and suppliers, market liquidity, and decreased transaction costs (Crook et al. 2008; K. Tan, 2002). The RBV theory asserts that if a company's strategic resources are rare, valuable, inimitable, and nonsubstitutable, it can survive the business environment because it will gain a competitive advantage over other market players (Barney, 1991). SMEs that succeed in the integration of SCM with information processing will align with the RBV theory by creating a value and rare asset that distinguishes them from others. This unification would reduce costs, enhance competition and guarantee survival. Ketchen and Giunipero (2004) were emphatic that SCM cannot be successful or valuable if companies do not infuse some form of strategic management process into it.

ICT has high potential in SCM to reduce costs and improve customer service, especially during a crisis or turbulent period (Christopher & Holweg, 2011). Christopher and Holweg (2011) argued that the current SCM models are premised on stability, which in their opinion would be upturned by a turbulent future. This premise is correct considering the current tumultuous and unstable state of economies worldwide. SCM must use ICT to incorporate some dynamic flexibility so proper evaluations can be done on supply chain decisions. SMEs that adhere to this advice will embrace the present economic volatility as an opportunity rather than a risk because they have built mitigative hedges into the supply chain design by internalizing ICT solutions.

Other derivatives and forms of SCM, which can be turned into competitive allies through ICT, include upstream supply chain (e-procurement), in-house supply chain, and downstream supply chain (e-retailing and e-marketing; Zhang et al. 2019).

COVID-19, ICT, and SMEs

The unprecedented COVID-19 global pandemic halted Africa's economic activities. Like the rest of the world, Africa was not insulated from the adverse outcomes of the pandemic and, in fact, experienced contractions in real GDP (2.1%) as reported by OECD (2020). Businesses were mainly affected worldwide with mandatory lockdowns. Although some businesses were able to bounce back after the world opened up, the pandemic led to the liquidation and bankruptcy of most businesses, especially the small and medium-sized ones. Policy rollouts and initiatives meant to cushion the effect of the pandemic for SMEs were primarily operationalized in developing countries. Despite experiencing a low fatality rate compared to the West, Africa, and particularly Nigeria, has continued to grapple with the adverse economic effects of the pandemic until now (OECD, 2020). The African governments' lack of swift action to reactivate the SMEs may have resulted in a protracted sector downturn with adverse outcomes on development and poverty level (Hartwich & Larsen, 2021). The United Nations Industrial Development Organization's report confirms that in the least developed countries in Africa, two out of three small businesses have either shut down or will soon file for bankruptcy because of credit lines and facilities, which they cannot honor.

Bartick et al. (2020) were some of the earliest researchers to study the pandemic's effect on small and medium businesses. A survey of 5,800 SMEs in the early months of the pandemic (between March and May 2020) exposed, among other things, the fragility

of most SMEs. Layoffs had already taken place within a month of lockdowns. Many were unprepared for the severe economic shock that COVID-19 would precipitate, and many SMEs in the informal sector were unaware or unable to access existing government business aid programs. Bartick et al.'s study was conducted in New York City, in the United States. A similar survey months later by KPMG (2020) on SMEs in Nigeria revealed that the effects of the lockdown were still reverberating negatively within the country's commercial centers. Recent studies have indicated that the pandemic still stunts progress and recovery. The impact has only worsened because of other international externalities besides from COVID-19 (Inegbedion, 2021; Nseobot et al., 2020).

The closure of many businesses in the SME sector and the falling oil prices led to high inflation and deceleration of the country's economic development. However, all the studies are harmonized in their conclusions that the primary reason for the survival rate of the still-thriving SMEs can be credited to ICT. While many SMEs close, the businesses that have weathered and continue to do so have invested in ICT infrastructure and are benefiting from various platforms for connectivity, networking, and sustained value-chain relationships. One of the lessons from the COVID-19 pandemic was the importance of ICT in today's world. It traverses people's businesses and social lives and grants automatic advantage to those who understand its value. What had been a luxury or choice by many SMEs had gradually assumed a position of indispensability

Literature Review Summary

A review of the literature was unambiguous on the importance of IT, particularly the internet, on the growth and sustainability of small and medium-sized businesses. Research has revealed its potential to radically change the way business is conducted,

offering a competitive edge and a gateway to the global marketplace. The rapid growth and commercialization of the internet have inspired an increased breakdown of trade barriers, thereby opening more opportunities for businesses, particularly SMEs, to sell their products and service to a global audience than they would have been able to afford to reach using the traditional methods.

The literature review also provided insights and identified various motivators and inhibitors that determine the level of ICT adoption by SMEs. Studies have shown that the internet is SMEs' most common ICT tool. Confirmation of this was provided with varying research perspectives and empirical findings. Four of the primary business enablers that support technology investment can be summarized as follows:

- a. the effect of managerial decisions in technology investment;
- b. businesses with access to persons who thrive mostly in technical activities;
- c. businesses with access to successful leaders and owners who place ICT at the core of both strategic and operational management activities and influence corporate vision and strategy to maintain operational efficiency; and
- d. the degree to which the technology, business process, and data components become regulated, shared, and integrated on digitized platforms (Chacko & Harris, 2006).

The power of ICT remains vastly underutilized and unexploited as a strategic business tool by Nigerian SMEs. Previous studies and literature have shown that ICT strategies will enhance profitability and, most importantly, guarantee business survival and sustainability.

CHAPTER 3: METHODOLOGY

This chapter provides an analysis of the methodology of the study. It presents the rationale for the research methods and instruments that was used by the researcher to investigate how ICT can be channeled as a strategy for business sustainability by owners of SMEs in Nigeria. Specifically, this chapter reemphasizes the purpose of the study and research questions and explains the research design and appropriateness of choice. In addition, this chapter provides an insight into the research instrumentation, the data collection, and the analysis process and concludes with a description of the limitations encountered during the research.

Adaptation of Conceptual Framework

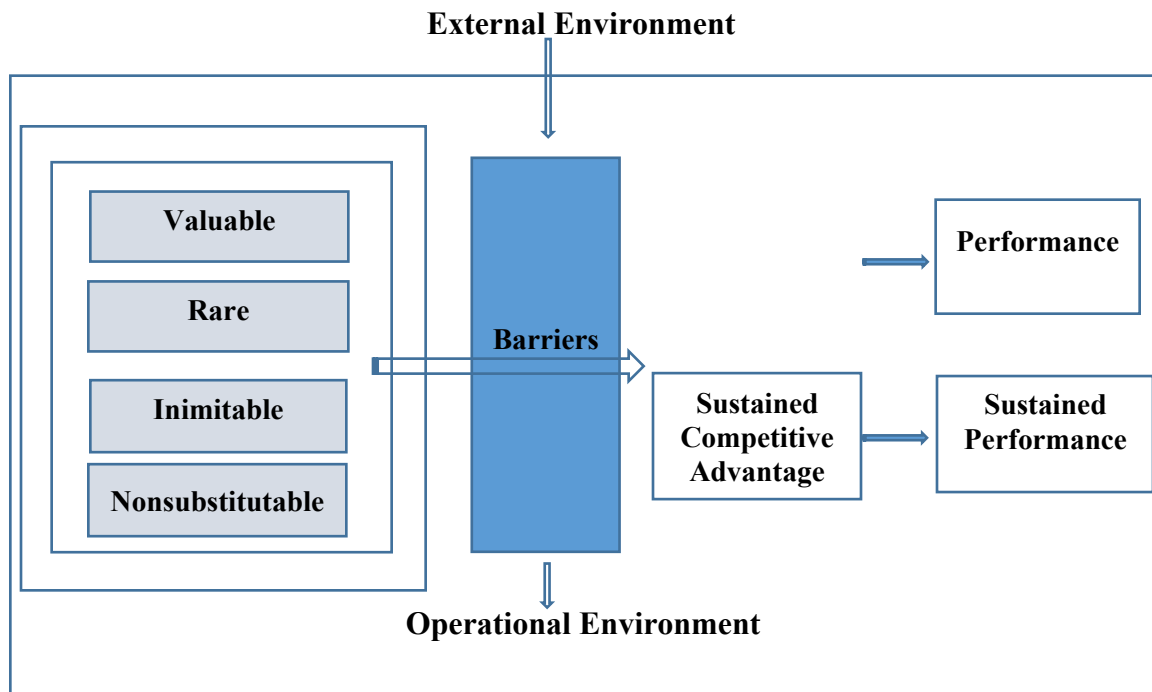
In this study, the resource-based view (RBV) theory was applied as a framework to explain how SME owners in Nigeria can implement ICT as a strategic resource for sustainability. To employ the RBV as a conceptual foundation to drive this study, the theory adapted from Melville et al.'s (2004) model, as shown in Figure 3, was used to ensure a straightforward interpretation of the RBV of an SME. Melville et al.'s model, derived from the RBV formulated by Barney (1991), provides an appropriate starting point for understanding the study by identifying the unique qualities a firm's resource must possess to achieve sustained competitive advantage and performance. This is based on the characteristics propagated by the RBV theory.

The external environment refers to the general business environment, location, and other extraneous factors (economic situation, government policies, natural disasters such as the COVID-19 pandemic, etc.). The operating environment pertains to the company's line of business, personnel, assets, and other internal capacities. The barriers

or challenges are the factors that limit the SME's ability to incorporate ICT as a strategic and innovative resource to achieve business continuity. The transformation of a company's ICT tools and infrastructure to be rare, valuable, inimitable, and nonsubstitutable will determine the progress and success of the firm in achieving sustainable performance.

Figure 3

Research Analytical Model



Note. Adapted from “Review: Information Technology and Organizational Performance: An Integrative Model of IT Business Value,” by Melville et al., 2004, *MIS Quarterly*, 28(2), pp. 293–295; “Firm Resources and Sustained Competitive Advantage,” by J. Barney, 1991, *Journal of Management*, 17(1), p. 112 (<https://doi.org/10.1177/014920639101700108>).

Purpose Statement

This phenomenological qualitative study aimed to determine how successful SMEs in Nigeria employed ICT as a strategic antidote for business sustainability. Leaders

of these SMEs were interviewed to ascertain the ICT strategies that have guaranteed the sustainability of their firms. The knowledge deduced from these leaders will be a valuable resource for current and potential Nigerian business owners with long-term implications for reduced reliance on government employment and increased entrepreneurship.

The researcher hopes the study will generate and enhance discussions on using ICT as a proactive arsenal for SMEs in dealing with the constant challenges and innovations of today's business world. Consequently, this study may serve as a resource for policy makers in government and instigate the formulation policies that will promote the adoption of ICT by Nigerian SME owners. ICT is a vital resource for SMEs; therefore, these objectives were achieved by employing the RBV theory as the theoretical framework for this research.

Research Questions

The following research questions guided the study:

1. How has ICT improved the business operations of SME businesses in Nigeria?
2. What are major ICT strategies SME leaders utilize to grow and sustain their businesses for 5 years or longer?
3. What are the perceived barriers to adopting ICT strategies among Nigerian SMEs?

Research Design

A qualitative phenomenology research strategy was employed to conduct this study. The decision to use this method was based on the practical and pragmatic nature of the investigative research. The study explored how ICT was used as a strategic resource

for the sustainability of small and medium businesses in Nigeria and investigated the obstacles preventing implementation. The answers to the research questions were obtained from SME leaders who have succeeded in growing and maintaining the longevity of their business despite the dynamic and arduous business environment of today's world.

The phenomenological research approach draws upon the subjective lived experiences of participants to provide a detailed account of specific variables (Reeves et al., 2008). Analytical and deductive methods usually initiate with a philosophical basis before one can discern the implications. Conversely, the phenomenological approach starts with “intuition and insight, which may or may not result in a generalization” (Sanders, 1982, p. 353). Therefore, it was necessary to apply the qualitative research strategy to obtain responses based on the knowledge, experience, and perceptions of the SME leaders. The data were subjective and based on individual business experiences, thereby eliminating the need for any quantitative analysis (Creswell & Creswell, 2018). Saunders et al. (2007) referred to this as subjectivism in which explanation or determination of social issues are derived from the beliefs and perceptions of the people involved. The absence of measured variables or numerical data in the study further designated it as a qualitative research approach.

The researcher used a qualitative research design to process and analyze these responses against the reviewed literature and the researcher's personal lived experience in Nigeria. The researcher interviewed 19 participants, which aligned with Creswell and Creswell's (2018) recommendation that phenomenological research should involve at least 10 or more participants. The researcher used the registered database on the

SMEDAN website, the government agency responsible for monitoring and developing SMEs in Nigeria. A formal request was sent to the participants requesting their consent to be interviewed. This request included other logistical details, such as convenient dates, time, location, mode (physical or virtual), and so forth.

The responses from these interviews were subsequently developed into themes leading to a broader understanding of the importance of ICT in the sustainability of small and medium firms in Nigeria (Bahari, 2010; Creswell & Creswell, 2018; Sinkovics & Alfoldi, 2012; Tansey, 2007).

Protection of Human Subjects

The researcher received project approval from California Baptist University's Institutional Review Board (IRB). This approval was necessary because the study entailed interviews with human subjects. The rights and data of the participants were protected through informed consent, which Creswell and Creswell (2018) affirmed as one of the foundations of ethical research. The participants signed the informed consent form as their permission and authorization for the researcher to use their interview data for the study. According to Creswell and Creswell (2018), a confidentiality guarantee by the researcher should be included. This guarantee ensures that the names of the interviewees and their firms are completely de-identified and anonymous. The researcher was also careful to maintain the best ethical research practices throughout the study.

Population

The population for the study encompassed the city of Abuja, the principal town in the Federal Capital Territory (FCT). The FCT is the capital of Nigeria. Although the city is not the country's commercial nerve center like Lagos, the establishment of SMEs has

increased there. Related studies on this topic with Nigeria as a case study have usually focused on Lagos, but this study bridged the geographical gap by examining how several successful SMEs in Abuja have sustained their businesses with the help of ICT. In addition, the researcher used the following criteria to determine the participants who were considered suitable for the study:

1. They were owners of SMEs that were nonsubsidiary, independent firms employing from 10 to 100 employees.
2. They were owners of SMEs that were 100% Indigenous and originated from Nigeria.
3. They were owners of SMEs that had successfully implemented ICT as a business strategy.
4. They were owners of SMEs that were registered within the SMEDAN database.

Selected leaders or owners of small businesses in the retail, hospitality, and ICT sectors of the economy were interviewed for this study. The researcher chose these sectors because they ranked as some of the most profitable sectors in Nigeria for SMEs (CBN, 2020) and for the diversity and synthesis in the research. Ten organizations were from the ICT sector, nine were from the retail industry, and seven were from the hospitality sector.

Sample

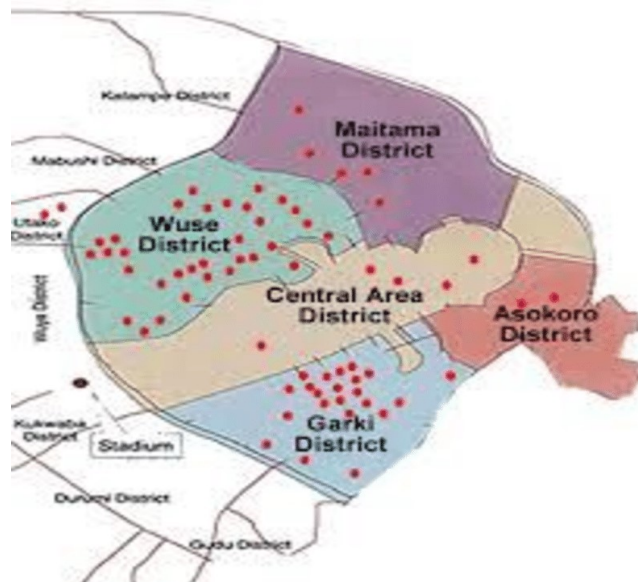
The sample for this study was chosen by purposive nonrandom sampling, which entails choosing a sample size based on the study's nature and purpose (Olise et al., 2014). Consequently, a deliberate choice of participants was sought as the sample size to obtain the necessary information required to answer the research questions.

The sample size for this study comprised owners and executive-level SME leaders who have the authority to approve ICT implementation within their respective organizations selected from the five central districts in Abuja. These are Wuse, Garki, Asokoro, Maitama, and the Central District (Figure 4).

The first four districts are a mixture of business and residential areas, and the sample from those locations consisted of three SME CEO leaders. The central business or area district encompasses the administrative offices of the federal government's executive, legislative, and judicial arms and the city's entire business district. It is generally referred to as the heart of Abuja or its spinal cord because of the power and commerce it accommodates. As a result, seven sample sizes were drawn from there to ensure a more representative sample, bringing the total sample size to 19 firms.

Figure 4

Map of Abuja Districts



Note: From “Between Abuja and Lagos: Insights of Price and Value in Residential Real Estate,” by N. Onwuanyi, 2018, *Journal of African Real Estate Research*, 3(2), p. 116 (<https://doi.org/10.15641/jarer.v3i2.559>).

Kuper et al. (2008) asserted that a sample size between five and 25 is adequate for data collection for qualitative research. Yin (2013) stated that sufficient sample size is crucial in reducing biased perceptions from fewer participants. The researcher intended to interview more than 25 participants; however, data saturation was achieved after 19. Data saturation in qualitative research occurs when there is no new data that will enhance or change the findings of a study and further coding and emergence of themes are not feasible (Creswell & Poth, 2017; Englander, 2012).

Because the study focused on the sustainability of ICT firms, the sample companies' corporate longevity was another crucial determinant. There is a higher chance of determining the strategies that lead to sustainability and competitive advantage from an organization that has been operational for a long time (Tàpies & Fernández Moya, 2012). In that vein, the participants of this study were owners with firms that have been operating for 5 years or longer. This logic also helped the researcher in validating the credibility of the responses from the participants. Furthermore, participants were selected based on their position in the organization as the firm's owner and managing director. This ensured that their responses were subjected to some level of empiricism.

Instrumentation

Yin (2013) posited that interviews are vital instruments in a qualitative study because they aid the researcher in staying focused on the research topic and probing deeper with appropriate follow-up questions. Consequently, individual one-on-one interviews and document analysis were applied as the primary instruments for the study. This was in a semistructured format that provided opportunities for expatiation and probing on participants' responses. The interview asked open-ended questions and were

virtually conducted via Zoom. Ten open-ended questions were formulated, and participants were asked to ascertain how they used ICT as a significant strategic resource in achieving sustainability.

A review of organizational documents and historical records was also instrumental in determining how long the firm had been using ICT and its impact on its overall corporate performance. This process aided in affirming and validating the responses obtained from the participants (Creswell & Poth, 2017; Maxwell, 2012). Yin (2013) advocated the use of triangulation in qualitative research by stating that the combination and confluence of different data instruments enhance the cogency and reliability of the overall findings of a study, especially when there is a convergence of data from all the sources.

The researcher was also an instrument for the study because data collection, interpretation, and analysis is a researcher's central function. Marshall and Rossman (2011) stated that the researcher is one of the primary instruments and the foremost interpreter of a research study.

In addition, a member checking process ensured validity and reliability by allowing participants to provide feedback and to modify or add information to their interview questions before the final data (Bahari, 2010). The interview transcripts were reviewed by the participants. This process of respondent validation and member checking helps demonstrate adequate rigor and credibility in qualitative studies (Morse et al., 2002).

Data Collection

The primary data for this study were collected from in-depth, semistructured, one-on-one interviews with the SME leaders in the selected districts in Abuja. Studies based on a phenomenological approach have gathered data in the form of in-depth, semistructured or unstructured interviews (Reeves et al., 2008). The researcher collated information from the expertise and experience of these leaders through interviewing. Toy and Ok (2012) stated that semistructured interviews contextualize the pertinent information garnered from the respondents, understandably encapsulate their perspectives, and reduce the bias and lack of focus usually associated with unstructured interviews. According to Tansey (2007) and Englander (2012), semistructured interviewing is used to corroborate information from other reviewed literature on a subject matter and make inferences about the characteristics or thoughts of a larger population.

The one-on-one nature of the interviews also created a free and comfortable personal space for the participants to express themselves. These interviews were conducted and recorded via Zoom with the consent of the participants.

The data collection process of this study is also supported by Apulu and Latham (2011) who identified semistructured interviews, observations, and document review as essential sources of data collection in qualitative research.

Data Analysis

Data from the interviews and company records were transcribed and analyzed to identify central or common themes (Bahari, 2010). The themes provided more comprehension about the standard ICT tools used by successful SMEs, the average

number of years they have been using ICT strategically, the barriers encountered, and innovative derivative programs from their ICT infrastructure, among other details. The interpretative analysis of data is an essential part of any qualitative research because it aids the researcher in understanding the perceptions and beliefs of the phenomenon (Yin, 2013). Therefore, the data analysis of a qualitative study must represent, as close as possible, the settings and nature of the research and help answer the research questions.

The computer software program Rev was used for the transcription process, and subsequently, the sanitized data were uploaded to MAXQDA software to facilitate the inductive coding process program. These programs are instrumental in enriching and quickening researchers' data analysis process (Englander, 2012; Yin, 2013).

Limitations

The limitations of the study include the following:

1. The study is limited to Abuja, within the Federal Capital Territory (FCT). The number of small and medium businesses in the city is limited compared to other major cities, such as Lagos, Onitsha, and others. However, the study can be replicated in other parts of the FCT apart from Abuja.
2. There were some technological glitches or difficulties during the virtual interviews.
3. The participants' expertise may be overestimated or biased based on hidden or personal agendas.
4. Professional transcription and coding process can be cost intensive.

Summary

This chapter provided a comprehensive overview of the research methodology used in the study. The purpose of the study and the research questions was also reiterated to clarify the significant goals and intentions of the research. The primary objective of this study was to collect data from leaders in small and medium businesses in Nigeria on how they employed ICT to sustain their business amidst the current turbulent business environment, further exacerbated by the COVID-19 pandemic. The research design for achieving this was explained in detail, and the rationale for using a qualitative research approach was also proffered. Previous studies and academic articles were cited to emphasize the importance of the qualitative research strategies that were employed in this study. The researcher also expounded on the sample size, which was drawn from SMEs in Abuja and from the database of SMEDAN to ensure that they were valid registered entities as required by law. The instruments used in the data collection, the measures of collecting the data, and the data analysis process were also discussed in this chapter. The chapter concluded with a list of anticipated limitations to the study, such as time and distance constraints, technological mishaps, and cost.

CHAPTER 4: RESEARCH, DATA COLLECTION, AND FINDINGS

Overview

The local and global business climate is ever evolving, and, in many ways, information communication technology (ICT) dictates the pace. However, the low adoption of ICT by small and medium-sized enterprises (SMEs) in Nigeria appears to go against this trend. The early liquidation of most SMEs in Nigeria is troubling because the viability of the SME sector in any country is critical to national economic growth. Studies have shown that ICT is a positive influence for the survival of any business, especially small and medium-sized ones. This research aimed to determine how SMEs in Nigeria employed ICT as a deliberate strategic tool for business sustainability.

This chapter presents the findings following the conducted study ICT as a strategy for sustainable SMEs in Nigeria. It provides a comprehensive dissection of the data collated during the semistructured interviews. The findings discussed in this chapter relate to the research questions that guided the study, including data collection reports from the open-ended interviews with the participants and the data analyses.

The collected data were analyzed and organized using the description of the sample population, preliminary results, discussion, presentation, and interpretation. Chapter 4 also presents a summary of the responses from participants during the interview sessions. It also lists the major themes that emerged, subsequently leading to the study's qualitative findings. This Chapter discusses how these themes relate to the findings and concludes with a summary.

Purpose Statement

This phenomenological qualitative study aimed to determine how successful SMEs in Nigeria employed ICT as a strategic antidote for business sustainability. Leaders of these SMEs were interviewed to ascertain the ICT strategies that have guaranteed the sustainability of their firms. The knowledge deduced from these leaders will be a valuable resource for current and potential Nigerian business owners with long-term implications for reduced reliance on government employment and increased entrepreneurship. Helpful suggestions in the study included how Nigerian SMEs can enhance their ability to compete and extend their businesses globally and to other frontier markets. Furthermore, the study aimed to investigate the factors that obstruct the adoption of ICT strategies and proffered information on mitigating these obstacles.

The researcher also hopes this study will generate and enhance discussions on using ICT as a proactive arsenal for SMEs in dealing with the constant challenges and innovations of today's business world. Consequently, this study may serve as a resource for policy makers in government and instigate the formulation of policies that will promote the adoption of ICT by Nigerian SME owners.

ICT is a vital resource for SMEs; therefore, these objectives will be achieved by employing the resource-based view (RBV) theory as the theoretical framework for this research.

Research Questions

The following research questions guided the study:

1. How has ICT improved the business operations of SME businesses in Nigeria?

2. What are the major ICT strategies SME leaders utilize to grow and sustain their businesses for 5 years or longer?
3. What are the perceived barriers to adopting ICT strategies among Nigerian SMEs?

Research Methods and Data Collection Procedures

The central objective of this study was to gain additional insights into how employing ICT can enhance the sustainability of small and medium-sized businesses in Nigeria. The strategic ICT adoption by SMEs for business sustainability is still underresearched in many developing countries, and Nigeria is no exception.

Semistructured interviews were chosen as the research method to ensure extensive data collection and comprehensive analysis. This research method contextualized the pertinent information garnered from the participants, encapsulated their perspectives, and reduced the bias and lack of focus usually associated with unstructured interviews. Because the study was about finding out strategies from the owners, it explored the solutions, hence the word *exploratory*. In addition, because this study was exploratory, the answers to the research questions were best obtained by interviewing owner leaders of SMEs who have succeeded in growing and sustaining their business through the strategic use of ICT.

Denzin and Lincoln (2011) stated that qualitative methods such as interviews give researchers a vantage point to investigate and determine business problems through the participants' perspectives. Boyce and Neal (2006) opined that interviews are helpful when the researcher needs comprehensive information that can only be retrieved from a person's thoughts and behaviours or when a study is explorative and in depth. For this study, another primary advantage of interviews was that the researcher was provided

more detailed information, which helped the researcher probe further into the ICT strategies that these SME leaders used. In addition, studies based on a phenomenological approach, such as this study, usually gather data through this method and draw upon the subjective lived experiences of participants to give a detailed account of specific variables (Creswell & Poth, 2017).

The open-ended questions allowed the participants to discuss the various ICT strategies they employ in their business, the period of the initial adoption of ICT, and the attendant challenges. Furthermore, these questions aided in extracting information from the participants about the impact of ICT adoption on their business growth and sustainability.

The study's research method was also congruent with Creswell and Creswell's (2018) assertion that qualitative methods occur in a natural setting through face-to-face interactions with the participants. This aligns with one of the critical features of a qualitative study, which sees the researcher as the principal instrument for data collection, interpretation, and analysis. Overall, the researcher is a primary instrument and the foremost interpreter of a research study.

The qualitative method of semistructured interviews used in this study allowed the participants to proffer an in-depth perspective of the phenomena through their knowledge and experience. The discussions also provided a deep rather than broad knowledge about the phenomena under study: Nigerian SMEs, strategic ICT use, and business sustainability. The human interaction between the researcher and the participants was achieved through this method, which encouraged the participants to share their perspectives freely.

Participant Selection

The population for the study encompassed the city of Abuja, the principal city located in the FCT, the Capital of Nigeria. The participants for this qualitative phenomenological study were owners and leaders of small and medium-sized businesses in Abuja, Nigeria. Although the city is not the country's commercial nerve center like Lagos, the establishment of SMEs has increased there. As discussed in Chapter 3, the participants were drawn from SMEs in the retail, hospitality, and ICT sectors through purposive, nonrandom sampling. This type of sampling means choosing a sample size based on the study's nature and purpose (Olise et al., 2014). The researcher chose these sectors because they ranked as some of the most profitable sectors in Nigeria for SMEs (CBN, 2020) and for diversity and synthesis in the research.

The proposed business database website of the SMEDAN was still under construction at the time of the study. Consequently, the researcher used an open-access database (<https://www.businesslist.com.ng>) to search for eligible study participants. Through this, the researcher identified 35 small and medium-sized business firms and visited the SMEDAN Abuja office to confirm the authenticity of the firms as duly registered legal entities. These confirmation processes weeded out nine of the sample, leading to 26 companies. Five more participants were selected by adopting the snowballing technique suggested by Patton (2015), bringing the total to 31. Snowballing involves identifying eligible participants through "people who know people" (Patton, 2015, p. 270).

The following criteria determined the choice of participants who were considered suitable for the study:

1. They were owners of SMEs that were nonsubsidiary, independent firms employing 10 to 100 employees.
2. They were owners of SMEs that were 100% Indigenous and originated from Nigeria.
3. They were owners of SMEs that had successfully implemented ICT as a business strategy
4. They were owners of SMEs that were registered within the SMEDAN database.

Of the 31 firms, 26 SME owners agreed to participate in the study. Five declined to be part of the study, citing reasons such as lack of interest and fears of breach of business confidentiality. All the selected participants met the eligibility requirements for the study, including SME characterization, sectoral diversity, an expert understanding of the study phenomenon, and a willingness to volunteer the necessary information. Ten organizations were from the ICT sector, nine were from the retail industry, and seven were from the hospitality sector.

Data Saturation

The interviewing process continued until data saturation was achieved with 19 participants (seven from ICT, seven from retail, and five from hospitality); thus, no further attempts were made to solicit additional participants. No other data emerged to develop new themes, and there was no new information. Mason (2010) identified that although several issues can affect sample size in qualitative research, the concept of saturation must always guide the study. Data saturation can also be referred to as

attaining a point at which the information produces a minimal change in data collection, and the analysis becomes counterproductive (Guest et al., 2006; Marshal & Rossman, 2011).

Saturation is when there is no new information so that no new themes can be developed. Furthermore, samples for qualitative research are generally much smaller than those used in quantitative studies (Ritchie & Lewis, 2003). This can be attributed to diminishing returns because more data do not necessarily lead to more information, which can subject the study to unnecessary repetitiveness.

Demographic Profile and Characteristics of Sample

The researcher initiated the interview process with questions relating to the participant's demographic information and a brief background of the firm pertaining to the research topic (see Table 2).

Data Collection Procedures

This study used primary data as the main data source. The researcher gathered the data through semistructured interviews. The study's participants were busy company owners during a period of high inflation and increased cost of business operations. Because of the possibility of delays in completing the consent form via email, the researcher physically visited the participants with the informed consent forms and provided clarifications. Abuja, the study location, is not a big city, and traffic congestion is lower than in other major cities in Nigeria

Table 2*Participant Demographics and Characteristics*

Participant	Business sector	SME category	Year commenced business	Number of employees	Gender	Years as owner/MD	Education level
MD1	ICT	Small	2010	12	Male	12	Bachelor's degree
MD2	ICT	Small	2000	15	Male	22	Bachelor's degree
MD3	ICT	Medium	2007	24	Female	15	Master's degree
MD4	ICT	Medium	1998	39	Male	24	High school
MD5	ICT	Medium	2003	22	Male	19	Bachelor's degree
MD6	ICT	Medium	1990	48	Male	32	High school
MD7	ICT	Medium	2001	67	Female	21	Bachelor's degree
MD8	Retail	Small	2007	18	Female	15	Master's degree
MD9	Retail	Small	2005	16	Male	17	Bachelor's degree
MD10	Retail	Small	1996	13	Male	26	High school
MD11	Retail	Medium	2002	25	Male	20	Bachelor's degree
MD12	Retail	Medium	2000	21	Female	22	Bachelor's degree
MD13	Retail	Medium	2012	23	Male	10	Master's degree
MD14	Retail	Medium	2009	37	Female	13	Bachelor's degree
MD15	Hospitality	Small	2002	15	Female	20	Bachelor's degree
MD16	Hospitality	Small	2005	12	Female	17	Bachelor's degree
MD17	Hospitality	Medium	2013	58	Male	9	Master's degree
MD18	Hospitality	Medium	1996	62	Male	26	Bachelor's degree
MD19	Hospitality	Medium	1990	41	Female	32	High school

Note: MD = managing director; ICT = information communication technology; SME = small and medium-sized enterprise.

During the visits, formal introductions were made, and letters of introduction were made available to the owners or managing directors. The researcher's contact details were also made available in the letters to four of the owners who were unavailable during those visits. However, the researcher subsequently visited them after scheduled appointments. Nineteen participants were given the confidentiality statement, their bill of rights, and the informed consent form for their perusal. The researcher subsequently retrieved the informed consent forms, and the dates and times for the interviews were scheduled at the convenience of all parties involved. The researcher also ensured that all participants had the Zoom application installed on their desktops or laptops for the interview sessions, which were all virtual. The choice for virtual interviews was to save time and to automatically record the interview sessions.

The interviews began with introductions and a brief description of the study's objectives. The researcher reemphasized the guarantee of confidentiality, the salient contents of the Participant Bill of Rights, and the informed consent form. These included the voluntary nature of participation, the choice not to answer a specific question, and the permission granted by the participant for the sessions to be recorded, among other factors. The open-ended interview questions listed were related to the company's business operations and niche, use of ICT, company ICT policy, success factors for ICT adoption, challenges faced during the process of ICT adoption, benefits of ICT use to the growth and sustainability of their companies, and future ICT expansion plans:

1. In what ways did ICT adoption contribute to your firm's sustainability?
2. What ICT strategies did you implement to improve business operations?

3. In your opinion, what is the most significant factor that influences ICT adoption among SMEs?
4. As an SME owner/leader, what factors influenced your decision to adopt ICT in your business?
5. What is your opinion on the role of ICT in SMEs in Nigeria?
6. What ICT strategies have you used that have not worked?
7. What challenges have you encountered that inhibit or can potentially inhibit further use of ICT in your organization?
8. What actions have you taken to ensure that your staff can utilize ICT resources available to the organization?
9. What role can government and other private institutions play in promoting ICT adoption as a strategy for business sustainability within SMEs in Nigeria?
10. What other information would you like to add regarding ICT strategies that managers of SMEs in Nigeria use to improve growth and survival?

The researcher also reviewed organizational documents and historical records, which were instrumental in determining how long the firm has been using ICT and its impact on its overall corporate performance. This process helped in affirming and validating the responses obtained from the participants. The use of triangulation in qualitative research is effective because the combination and confluence of different data instruments enhance the cogency and reliability of a study's overall findings (Creswell & Creswell, 2018).

Each interview lasted an average of 35 min, and five respondents rescheduled the prearranged dates and times because of unavoidable issues. The participants chosen were

SME leaders whose firms have used ICT as a strategic sustainability tool; as expected, they answered the questions competently. The open-ended questions also allowed the researcher to probe and ask follow-up questions related to a particular issue, which the participants expertly answered. Data collection was concluded on October 27, 2022, when the last interview transcripts were discussed and agreed upon with the participants.

Presentation and Analysis of Data

Interpretative data analysis is an essential part of any qualitative research because it aids in understanding the perceptions and beliefs of the participants (Mason, 2010). Therefore, the data analysis of a qualitative study must represent, as close as possible, the settings and nature of the research and help answer the research questions. This study employed a qualitative research method for analysis and arrival at findings. The qualitative data that were analyzed were extracted from semistructured interviews of 19 owner executive-level SME leaders who had the authority to approve ICT implementation within their respective organizations. The discussions focused on exploring the various ICT strategies that can boost the corporate longevity of SMEs in Nigeria.

After the interview sessions, the researcher created a separate folder for each participant. To protect the participants, their names were anonymously presented as MD1, MD2, MD3, MD4, MD5, MD6, consecutively to MD19. For increased accuracy, efficiency, and quick editing, the recorded interviews were professionally transcribed via upload to Rev, a transcription software. The converted video interviews, which were then in text form, were verified against the actual discussions to enhance data reliability. During this analysis, data reduction was carefully performed. Mayer (2015) described

data reduction as the process of discarding redundant data that are not useful to the study. The researcher conducted the data reduction step meticulously to avoid losing any valuable data. The Zoom recordings and the transcriptions were labeled with the participant codes, which could only be decoded by the researcher and saved in a protected file. The researcher was the only person with access to these recordings.

Subsequently, the sanitized data were uploaded to MAXQDA software to facilitate the inductive coding process. The program was instrumental in generating, sorting, and organizing the codes from the interviews. It also helped create a logical structure from the keywords, phrases, and common expressions among the participants during the interviews, leading to a more straightforward and quicker development of themes generated by the MAXQDA program.

At the completion of the transcriptions, a copy of the transcripts was sent to the participants for review by email. Twelve were sent by email and a hard copy was physically delivered to three participants (MD5, MD8, and MD14). The reviews for 12 participants were discussed over the phone, and the reviews for three participants were discussed face-to-face. None of the participants requested any changes. The researcher employed member checking as part of the rigor process to achieve validity and enhance the credibility and accuracy of the study. Morse et al. (2002) referred to rigor as a process of establishing trust or confidence in qualitative research findings.

Interview Question 1

The first interview question asked, “In what ways did ICT adoption contribute to your firm’s sustainability?” This question addressed Research Question 1: “How has ICT improved the business operations of SMEs in Nigeria?”

The objective behind this Interview Question 1 was to extract information from the participants about the distinct ways ICT had contributed to their various business operations, which has led to the continued existence of their companies. Because the study was rooted in the sustainability of Nigerian SMEs through the strategic use of ICT, this question was the basis for initiating the interview.

As indicated in Table 3, the responses show that all participants agreed that adopting ICT increased the firm's productivity and growth. At the same time, 75% said it had improved the operational efficiency of their firms. Furthermore, 69% of the participants responded positively to using ICT to gain a competitive advantage in local and international markets. Responses also indicated that quick access to market information, improved customer relationships, reduced costs through business applications, and expansion of business partnerships were some of the benefits they had derived from using ICT.

Table 3*Themes for Interview Question 1*

Theme	No. of participants	% of participants	Participants
Productivity and growth	19	100	MD1, MD2, MD3, MD4, MD5, MD6, MD7, MD8, MD9, MD10, MD11, MD12, MD13, MD14, MD15, MD16, MD17, MD18, MD19
Operational efficiency	14	75	MD1, MD2, MD3, MD5, MD6, MD9, MD10, MD11, MD12, MD14, MD15, MD17, MD18, MD19
Competitive advantage	12	69	MD1, MD3, MD5, MD6, MD9, MD10, MD11, MD12, MD14, MD15, MD17, MD18, MD19
Timely access to information	11	58	MD1, MD2, MD4, MD5, MD6, MD8, MD9, MD11, MD12, MD14, MD19
Improved customer relationships	11	58	MD1, MD3, MD4, MD7, MD8, MD10, MD13, MD15, MD16, MD17, MD18
Expanded local and global partnerships	10	53	MD2, MD5, MD6, MD7, MD9, MD10, MD11, MD13, MD14, MD17
Reduced costs	10	53	MD1, MD3, MD4, MD5, MD6, MD7, MD11, MD13, MD15, MD16
Self-employment	10	53	MD1, MD2, MD4, MD5, MD8, MD9, MD11, MD12, MD14, MD19
Innovation	9	47	MD2, MD4, MD5, MD7, MD8, MD10, MD12, MD16, MD19
Increased customer base	7	37	MD1, MD3, MD6, MD9, MD11, MD13, MD17
Less staff turnover	7	37	MD1, MD2, MD5, MD8, MD9, MD16, MD17
Advertisement	6	32	MD3, MD7, MD9, MD10, MD14, MD19
Less fraud and increased accountability	6	32	MD3, MD4, MD11, MD14, MD17, MD18

Another critical advantage most participants pointed out was the reduced overhead costs they achieved by using ICT. The dominant areas included reduced advertising costs, product differentiation, and timely market responses. All the participants agreed that incorporating ICT as part of their business strategy was primarily responsible for their business success and sustainability. MD6 stated,

My company is over 30 years old, and ICT was not popular in those days. I almost closed the company in 1997 because we did everything by hand, and it wasn't easy to keep up with the big firms or keep track of what was happening in the market. But in 2003, when I invested in ICT, it changed everything. Now, once I click a button, I know where everything is, and the business is running smoothly. With this high inflation and hardship, we would have closed shop if I did not have this equipment and software.

This sentiment was echoed by most participants who attributed their decision to adopt ICT as one of the primary reasons their business was still ongoing.

Interview Question 2

The second interview question asked, "What ICT strategies did you implement to improve business operations?" This question addressed Research Question 2: "What are the major ICT strategies SME leaders utilize to grow and sustain their businesses for 5 years or longer?"

The analysis of the responses from the participants indicated that the main ICT application and services strategically used within most of the firms were the internet; business productivity software, such as text editor and spreadsheet; enterprise software; data storage; security; network security, and so forth. Supply chain management (SCM)

or inventory management and sales were identified by over 80% of the participants as integral players in their ICT strategies. Popular hardware technologies listed by almost all the participants included desktop computers, laptops, and handheld devices, such as tablets and smartphones (see Table 4).

Table 4

Themes for Interview Question 2

Theme	No. of participants	% of participants	Participants
Supply chain management system	16	84	MD1, MD2, MD3, MD4, MD5, MD6, MD10, MD11, MD12, MD13, MD14, MD15, MD16 MD17, MD18, MD19
Emails	14	73	MD1, MD3, MD5, MD6, MD9, MD10, MD11, MD12, MD14, MD15, MD16, MD17, MD18, MD19
Research for the right ICT	13	68	MD3, MD4, MD5, MD6, MD9, MD10, MD11, MD12, MD14, MD15, MD16, MD17
Internet	11	57	MD2, MD5, MD6, MD7, MD8, MD9, MD10, MD13, MD14, MD15, MD16
Hiring an IT manager	11	56	MD1, MD3, MD5, MD8, MD9, MD10, MD11, MD13, MD14, MD17, MD19
Quick response and expansion	9	47	MD1, MD2, MD3, MD4, MD5, MD6, MD7, MD9, MD10
Upgrading ICT resources	6	30	MD1, MD7, MD11, MD12, MD15, MD18
Collaborative partnerships	6	30	MD1, MD4, MD9, MD10, MD14, MD15
Cloud services	4		MD5, MD8, MD13, MD19

The assertions support the literature reviewed in Chapter 2 of the study that proper management of SCM function is a crucial determinant of growth, performance,

and stability for the firm through reduced inventory, reduced frequency of orders, improved quality, and product and service offering through enhanced innovative product design (K. Tan, 2002). Notwithstanding the sectoral differentiation among the participants, SCM is a significant part of Nigeria's overall small and medium-sized business. The participants' responses indicated that proper inventory management instigates competitive ability and enables cost reduction. The responses to Question 2 revealed that the fewer SCM deficiencies a firm has, the higher its effectiveness and operating performance.

MD10 and MD15 contended that SMEs could not survive without the internet. Other owner MDs agreed with this by emphasizing they used SCM, the internet, and other related applications to facilitate the operational efficacy of their organization. The systematic strategies that were also mentioned were internet communication tools and platforms. Some of these are establishing responsive websites and instituting a solid email database, which they use for strategic product and sales communication to a targeted audience. At least 50% of the participants mentioned that with the aid of the internet and emails, there is proactive positioning based on feedback for optimized response. In the hospitality sector, MD17 and MD18 stated that ICT had boosted their prestaging and prearrival engagement with their clients. Now they can customize their offerings to the needs of a particular customer, which subsequently increases the rate of returning clients. MD12 stated,

We use emails and our website to inform our existing and potential clients about weekend discounts or seasonal offerings. Lately, the responses are not much

compared to years back because of the current poor cash flow. But we still get some responses, which is better than nothing.

According to MD5, MD9, and MD14, using SCM software enhanced the communication and order processing between their firms and their suppliers. This translates to increased efficiency because there is real-time monitoring of stock positions, demand rates, and customer feedback. MD11 stated,

We used to encounter so much waste because of spoilt stock. This is due to poor stock keeping and the worrisome disappearance of stock. There was a remarkable difference when we installed supply chain management software. There is a visible positive change in our response rate and interaction with our suppliers, and we know exactly what we need when we need it and can track when our goods will arrive.

Optimized resource deployment, procurement efficiencies, and brand equity market share are also outcomes witnessed by most of the participants. In addition, another common ICT strategy mentioned by 45% of the participants was the introduction of a phased approach to adopting ICT. This strategic approach means that the firms used a targeted process in incorporating ICT into their business operations. This style reduces the divergence between the existing manual operational process and a digitalized one. It also allowed staff to be gradually trained in the use of ICT. It positioned the company with enough time to guarantee that its suppliers, customers, and other stakeholders were synchronized with the new technological processes.

Closely related to this strategy is the employment of ICT specialist managers whose major job function is to ensure a seamless transition to any new ICT tool without

disrupting the company's operations. Of the respondents, 30% stated that these IT managers are tasked with the in-house training of staff members on the usage and potential of these tools. MD4 captured this by saying,

When I set up this company then, I bought some computers and licensed software to increase sales and reduce all these papers in the office. I sent it to the three branches for them to use, and I almost went bankrupt because nobody knew what they were doing, and business was put on hold. I had to employ an IT manager for the three branches, and finally, we were back on track again.

Upgrades and updated software and services were another principal ICT strategy that 25% of the SME owners identified as a critical success factor.

Interview Question 3

The third interview question asked, "In your opinion, what is the most significant factor that influences ICT adoption among SMEs?" This question addressed Research Question 3: "What are the perceived barriers to adopting ICT strategies among Nigerian SMEs?"

Interview Question 3 generated a plethora of themes from the participants' responses. In asking this question, the researcher had to elaborate that these influential factors may be positive or negative. All the participants agreed that the benefit they hoped to derive was the major incentive for adopting ICT. They stated that they made informed decisions before adopting ICT based on the perceived benefits and anticipated return on investment.

However, most were quick to list the issues that limit the adoption of ICT among Nigerian SMEs. The top issue cited was the lack of adequate infrastructure. Specifically,

over 92% of the owners mentioned insufficient electricity or power supply as a deterrent to the use of ICT. MD8, MD13, and MD17 said that the cost of fuel and diesel is so high that it depletes the operating budget of most small and medium-sized businesses. This leaves them with little or no funds for extra investment in ICT. In addition, others were quick to point out that with the high cost of living and severe inflation, it would be difficult for ICT investment to be the top priority for these firms. MD11 opined that the issue was like a “catch-22 situation”:

They spend most of the money buying fuel and diesel because there is never light here. We have had only 4 hours of light in the past 2 days. So, we have to use generators to run our business. I am lucky that I can do my business online because most of our orders come into our website and platforms, and I can track my supplies too. I run my generator only 2 hours a day. The businesses that don't have ICT have to rely on walk-in customers, and when they spend all their money on running the generator, then there is no money left for ICT. Yet, unfortunately, ICT is the only thing that can help them, but there is no money for that.

Other infrastructure inadequacies mentioned are the lack of fiber and broadband backbone in rural areas. Forty-one percent said that a lack of broadband access truncates their desire to open branches in their hometown. The flow of communication and business integration will not be achieved without broadband in rural towns. Several of them expressed the desire to expand their business, which would aid in its sustainability, but cannot do so. MD10 stated that he is aware of several SMEs in his hometown that have closed shop or are on the verge of doing so because they cannot access partnership offers with businesses in town because of a lack of broadband.

Low education and awareness of the value of ICT to the business bottom line and survival was another barrier. Others barriers are financial inadequacy stemming from a lack of support from banks and the government and the high cost of training personnel in ICT. The cost of maintaining ICT infrastructure, paying licenses and upgrades, and increasing charges by internet service providers (ISPs) are all contributing issues that prevent the adoption of ICT by SMEs in Nigeria. Ten percent of participants opined that socioeconomic and cultural reasons, such as lack of trust and the rising spate of cybercrimes in the country and globally, also scare them from adopting ICT. A collation of the themes and participant responses is presented in Table 5.

Interview Question 4

The fourth interview question asked, “As an SME owner/leader, what factors influenced your decision to adopt ICT in your business?” This question also addressed Research Question 3: “What are the perceived barriers to adopting ICT strategies among Nigerian SMEs?”

This was closely related to Interview Question 3 because it discussed the influences that impact ICT adoption. Several themes emanated from Interview Question 4. Over 50% of the participants attributed their choice to adopt ICT to the need to survive. Several participants identified competition, quick access to market information, and operational efficiency as specific issues that propelled them to adopt ICT. MD18 shared, “See, if I didn’t have any ICT, this business would have closed since. How will I place and receive orders, and know what is happening and what customers need right now if there is no internet?” Global and local business expansion plan was another primary motivator for the incorporation of ICT as shown in Table 6.

Table 5*Themes for Interview Question 3*

Theme	No. of participants	% of participants	Participants
Perceived usefulness	19	100	MD1, MD2, MD3, MD4, MD5, MD6, MD7, MD8, MD9, MD10, MD11, MD12, MD13, MD14, MD15, MD16, MD17, MD18, MD19
Poor electricity	17	92	MD1, MD2, MD3, MD4, MD5, MD6, MD7, MD8, MD9, MD10, MD11, MD13, MD14, MD15, MD16, MD17, MD19
Inadequate financial capacity	16	84	MD2, MD3, MD4, MD5, MD6, MD7, MD8, MD9, MD11, MD12, MD13, MD14, MD15, MD16, MD17, MD18
High cost of ISPs	12	61	MD1, MD2, MD3, MD5, MD6, MD7, MD8, MD10, MD11, MD13, MD14, MD19
Lack of education and ICT awareness	10	52	MD1, MD2, MD4, MD7, MD9, MD10, MD14, MD16, MD17, MD18
Lack of support from banks and government	8	4	MD1, MD6, MD8, MD11, MD12, MD13, MD15, MD18
Cost of training	5	26	MD2, MD5, MD6, MD12, MD19
Cost of maintenance	5	26	MD1, MD10, MD12, MD15, MD17
Fear of cybercrime	4	21	MD2, MD7, MD10, MD11
Lack of technical skills	3	16	MD6, MD9, MD10
Technology type	3	16	MD1, MD4, MD18

Table 6*Themes for Interview Question 4*

Theme	No. of participants	% of participants	Participants
Sustainability	15	84	MD1, MD2, MD3, MD4, MD5, MD6, MD7, MD8, MD10, MD11, MD14, MD15, MD16, MD18, MD19
Competition	13	69	MD1, MD2, MD4, MD6, MD9, MD10, MD11, MD12, MD13, MD14, MD15, MD17, MD18,
Operational efficiency	12	63	MD1, MD2, MD5, MD6, MD9, MD10, MD11, MD12, MD14, MD15, MD16, MD17,
Quick access to information	8	42	MD3, MD5, MD6, MD7, MD8, MD9, MD14, MD19
Expansion	7	44	MD2, MD7, MD9, MD10, MD11, MD16, MD17
Increased profit	6	32	MD1, MD2, MD6, MD7, MD14, MD19
Increased customer base	6	32	MD3, MD4, MD9, MD12, MD13, MD17
Local and global partnerships	3	16	MD2, MD11, MD13
Cheaper supply source	2	11	MD7, MD10

Interview Question 5

The fifth interview question asked, “What is your opinion on the role of ICT in Nigerian SMEs?” This question also contributed to answering Research Question 1: “How has ICT improved the business operations of SMEs businesses in Nigeria?”

In response to Interview Question 5, 12 participants stated that the level of innovation and organizational transformation witnessed in the small and medium-sized sectors resulted from ICT. Thirteen said competitive advantage is one of the significant

benefits of ICT to SMEs. Table 7 and the participant responses that follow summarize this question.

Table 7

Themes for Interview Question 5

Theme	No. of participants	% of participants	Participants
Competitive advantage	13	68	MD1, MD3, MD4, MD5, MD6, MD7, MD8, MD10, MD11, MD13, MD14, MD15, MD16,
Innovation	12	63	MD1, MD2, MD3, MD4, MD7, MD9, MD10, MD11, MD12, MD13, MD17, MD18,
Organizational efficiency	7	37	MD1, MD2, MD9, MD10, MD11, MD15, MD18
Sales and profitability	7	37	MD3, MD5, MD6, MD7, MD8, MD9, MD19
Information access	6	32	MD1, MD3, MD8, MD9, MD17
Improved customer care	5	26	MD4, MD10, MD12, MD16, MD19

MD10 shared,

My company is a market leader because of ICT. When others were apprehensive about spending money on ICT, I invested in it, and it turned out to be one of the best decisions I have ever made. I was way ahead of everyone because my firm was running efficiently, and I had the edge over my competitors.

MD13 expressed satisfaction with the positioning of the firm as a market leader, and this was because of ICT. MD2 also shared,

I know how much my company was losing daily to fraud because tracking stock was difficult, especially when we added two more branches. Operations were also

prolonged because everything was manually done. Several times, I would waste money and send staff to Lagos to trace our goods or send them to the supplier's office in another state. Staff turnover was high because they were working too much. Buying this ICT equipment and tools was hard, but it saved me so much stress and money. Now, even from home, I know what is happening in my business.

Interview Question 6

The sixth interview question asked, “What ICT strategies have you used that have not worked?” This question answered Research Question 2: “What are the major ICT strategies SME leaders utilize to grow and sustain their businesses for 5 years or longer?”

The responses to Interview Question 6 and the follow-up probing questions provided insights into unsuccessful strategies employed by SME owners during their ICT adoption journey. Five participants expressed regret about the amount of money spent on training staff on expensive external ICT courses. The loss of human resources during the times the staff were in training and staff turnover led to the decision to employ professional ICT managers as direct staff of the company to train other staff. These managers were also mandated to manage the ICT department of the firm. Another failed strategy was not tailoring the ICT tools to the company's needs but based on the ICT used by competitors. This statement was made by three participants and the rest could not recall any unsuccessful strategy (Table 8).

Table 8*Themes for Interview Question 6*

Theme	No. of participants	% of participants	Participants
Expensive ICT training	5	26	MD4, MD7, MD8, MD12, MD19
Nonalignment of ICT tools to company needs	3	15	MD2, MD 14, MD17
None	11	58	MD1, MD3, MD5, MD6, MD9, MD10, MD11, MD13, MD15, MD18, MD19

Interview Question 7

The seventh interview question asked, “What challenges have you encountered that inhibit or can potentially inhibit further use of ICT in your organization?” The responses to this question addressed Research Question 3: “What are the perceived barriers to adopting ICT strategies among Nigerian SMEs?”

The themes generated from the responses to Interview Question 7 revealed that the challenges that can deter future or increased adoption of ICT emanate from internal and external factors. Ten participants not only shared their views on some level of the inadequacy of the ICT resources available for operational purposes but also shared their fears about the availability of financial resources to embark on more ICT investment. The internal constraints disclosed by seven of the owners were the potential constraint and possible disruptions in the complete automation of their sales and marketing activities.

The persistent rise in fuel costs also championed the plans for full automation. MD5 stated,

Right now, we have two marketing cars. But the business the marketers bring in by using the cars is almost equal to our online sales. So, I'm thinking of full online sales and marketing, but what if the system crashes or technological glitches happen? Then I would lose a lot of business before it is sorted.

The other internal obstacle shared by nine participants was the trainability of staff. MD11 shared,

When we introduced ICT, it was not easy. The IT manager was overworked training staff. Even when I organized for external facilitators to come on a Saturday to come and train them, some did not show up, and for those that did, it took them quite some time to grasp the exact things they were supposed to do. It was quite frustrating then. So, increasing our ICT resources must be done, but how will I train them without losing so much money and time?

The visible dilemma in some responses was whether a firm should let go of good marketing and sales staff because of the company's nonadaptability to ICT installations. MD4 noted that their current inventory management application did not extend to receiving at the warehouse, creating difficulties. The extension would be capital intensive because they have more than four warehouses, considering the country's economic challenges. Despite the positive cost-benefit analysis of doing so, it was still an investment that needs to be revisited in the future.

The external factors were centered on the high cost of broadband by ISPs and the increasing cost of doing business. Participant responses referred to increased taxes, lack

of infrastructure, and inadequate electricity supply. Two participants observed that the fear of insecurity is also a contributory factor. MD16 stated that more investments portray high liquidity and available financial resources, which may subject the firm to cybercrime, theft, or even kidnapping.

A strategic management system is one of the fundamental avenues for creating strategic assets for the organization because it fosters competitive advantage, leading to profitability and sustainability. However, the fears and challenges summarized in Table 9 by the participants may hinder further plans of expanding the SCM applications in their various firms.

Table 9

Themes for Interview Question 7

Theme	No. of participants	% of participants	Participants
Lack of financial capacity	10	53	MD1, MD4, MD7, MD8, MD10, MD11, MD13, MD14, MD16, MD18
Disruption to business operations	7	37	MD1, MD2, MD3, MD5, MD6, MD12, MD19
Poor ICT skills	6	32	MD6, MD9, MD11, MD12, MD15, MD17, MD18
High cost of doing business	4	21	MD2, MD5, MD7, MD10
Insecurity	4	21	MD9, MD10, MD13, MD16

Interview Question 8

The eighth interview question asked, “What actions have you taken to ensure that your staff can utilize ICT resources available to the organization?” This question

answered Research Question 3: “What are the perceived barriers to adopting ICT strategies among Nigerian SMEs?”

Interview Question 8 was focused on staff training and reduced staff turnover. Despite the previous responses to the issue of training staff on the use of ICT and the attendant cost challenges, it was refreshing to note that over 75% of the participants were still invested in staff education in ICT. The approaches and styles for this training appear to have changed over the years and also differ among the companies. Over 50% still conducted structured ICT training at least once a quarter. This training was usually handled by the resident ICT manager or external people.

MD9, MD12, and MD16 and five others observed that over the years (see Table 10), they have been conscious of employing staff with ICT background or training, especially in business applications and software. Thirty-two percent of the participants noted that continual on-the-job training of ICT is part of the company’s policy, especially with recruits.

Table 10

Themes for Interview Question 8

Theme	No. of participants	% of participants	Participants
Quarterly ICT training	10	50	MD1, MD4, MD6, MD7, MD10, MD12, MD15, MD16, MD17, MD18
Employing staff with ICT training	8	42	MD3, MD4, MD8, MD9, MD12, MD13, MD16, MD19
On-the-job ICT training	6	32	MD1, MD2, MD5, MD6, MD11, MD14

Interview Question 9

The ninth interview question asked, “What role can government and other private institutions play in promoting ICT adoption as a strategy for business sustainability within SMEs in Nigeria?” The responses to this question answered Research Question 3: “What are the perceived barriers to adopting ICT strategies among Nigerian SMEs?”

Table 11 shows the different themes from participant responses, including the issue of low electricity supply, which seven participants noted. They opined that this would reduce operational costs, and the funds could be used for ICT investment. MD12 and four others observed that although the government helped in pervasive broadband across states, the cost should be subsidized for the SME sector.

Table 11

Themes for Interview Question 9

Theme	No. of participants	% of participants	Participants
Electricity	7	37	MD5, MD7, MD10, MD11, MD13, MD15, MD18
Subsidized cost of broadband	5	26	MD1, MD3, MD6, MD7, MD12
Rural broadband access	3	16	MD4, MD9, MD17
Funding ICT projects	3	16	MD6, MD8, MD19
Quality of ICT in schools and ICT training centers	2	11	MD 2, MD14, MD16,

The provision of available, accessible, and affordable (Triple A) broadband is a significant objective of the Nigerian National Broadband Plan 2020–2025, championed by NCC (2022). However, although the first two As have been impressive to a large

extent, the final A, affordability, is still not tenable according to the participants. MD7 shared,

The government is trying. Before, the broadband quality in our business area was so bad, but now it has greatly improved. But it is still too expensive, and the internet service providers seem to be increasing the cost, or the data appears to be reducing.

Three participants noted that more focus should be placed on rural broadband access because this will elevate the development of SMEs in rural areas. Responses also indicated that funding for ICT projects could be actualized through ICT investment loans from the banks or via a specialized funding project by the CBN. MD19 shared,

Last year, we wanted to borrow funds from the bank to buy some computers and install internet and other applications for one of our new branches. I was turned down, and it was stressful borrowing money from alternative sources at high interest rates to achieve that aim.

Another contention with the SME owners was regarding ICT training in schools. Two participants complained about the quality of Nigerian school graduates who claim to have studied IT or related courses but have no practical skills. There were suggestions that ICT training centers should be established by the government because this would upgrade the ICT skills and education of Nigerian youths and students.

Interview Question 10

The 10th interview question asked, “What other information would you like to add regarding ICT strategies that managers of SMEs in Nigeria use to improve growth

and survival?” This question answered Research Question 2: “What are the major ICT strategies SME leaders utilize to grow and sustain their businesses for 5 years or longer?”

Most participants advised that businesses yet to incorporate ICT into their operational processes should start with essential tools, such as computers and the internet. Others suggested that despite the current financial hardship, ICT was still one of the foremost survival tools for SMEs. For ICT investment, gradual planning and budgeting should be initiated (see Table 12). The participants also emphasized the need to invest in ICT specific to a firm’s business needs, and research and consultations should be done before embarking on any ICT project. MD3 stated,

Don’t just start acquiring ICT tools because you saw your business competitor or neighbor doing so. What are the constant questions or demands that your customers or suppliers make? Which tools will address this need, and what is the most affordable way to acquire what you need?

Table 12

Themes for Interview Question 10

Theme	No. of participants	% of participants	Participants
Start small	9	47	MD1, MD2, MD4, MD6, MD7, MD8, MD10, MD14, MD17
Plan for the project	5	26	MD5, MD9, MD13, MD16, MD19
Conduct research	5	26	MD3, MD11, MD12, MD15, MD18

Summary

Chapter 4 presented and explained the findings of the semistructured interviews with 19 participants. These participants were owner leaders of SMEs in Abuja, Nigeria. The analysis of their responses also included direct quotes from some of the participants relating to each question. The themes generated from these responses were also presented in this chapter. As discussed previously in this chapter, data saturation was achieved earlier because of recurring and similar responses among the participants.

The participants were open with their responses and shared their perspectives relating to the questions. It was apparent that they spoke from their lived experiences, validating the phenomenological nature of this study. It was interesting to note that productivity and growth, operational efficiency, and competitive advantage were the top three benefits enjoyed by the firms since adopting ICT, alongside others, such as expanded markets, improved customer base, and so forth. The internet and SCM systems were the critical ICT tools employed by the companies. Poor electricity supply and lack of finance are the most crippling obstacles preventing ICT adoption.

The views expressed by the participants corresponded with the fact that although the SME sector is critical to the economic development of Nigeria, several obstacles exist that limit widespread, pervasive adoption by most SMEs in the country. Issues such as financial incapacitation, inadequate electricity, high cost of doing business, and lack of ICT skills authenticate the submissions in the literature review. In addition, the participants' suggestions on other areas revealed engaging and first-hand experiences of the various issues reviewed during the study. Chapter 5 presents the findings, conclusions, and recommendations.

CHAPTER 5: FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

Past and current worldwide economic crises have constantly prompted research into the causes of such problems and the provision of viable suggestions that can alleviate the issues. This study was one of such research targeted explicitly at examining how small and medium-sized enterprises (SMEs) in Nigeria can adopt information communication technology (ICT) as a strategic solution to the problem of early liquidation that is witnessed in the sector. Apulu and Ige (2011) posited that although some SME owners are aware of the critical role played by ICT in the sustainability of their businesses, this knowledge remains unknown to most SMEs. Notwithstanding the importance of ICT to the long-term survival of SMEs, there is a shortage of research in this field, especially as it relates to Nigeria and developing nations in general.

The purpose of this phenomenological study was rooted in that premise in exploring strategic ICT that can contribute to the longevity of SMEs in Nigeria. Three research questions were used in this explorative process:

1. How has ICT improved the business operations of SMEs in Nigeria?
2. What are the major ICT strategies SME leaders utilize to grow and sustain their businesses for 5 years or longer?
3. What are the perceived barriers to adopting ICT strategies among Nigerian SMEs?

The emphasis of this study was on drawing experiences from the owner managers of SMEs in Abuja, Nigeria. Therefore, semistructured interviews were conducted with 19 owners of firms chosen from three sectors of the economy: ICT, retail, and hospitality. A purposive sampling method was used as well as a snowballing sampling method. The

analysis of the sessions revealed that the participants' sector was not instrumental in their overall perspectives on the importance of ICT in their various businesses. This assertion is premised on the comprehensive discussion in Chapter 4, which provided an analysis of each interview question and the findings. This chapter presents the study's principal findings, the overarching themes from the interview sessions, the conclusions and recommendations, and ends with a summary.

Major Findings

Analyzing the participants' responses to the 10 semistructured interview questions contributed to answering the three research questions. However, the thematic analysis of this data resulted in the generation of six overarching themes: benefits of ICT to SMEs, ICT strategies for SMEs, factors affecting ICT adoption, internal organizational aspects, the role of government, and positive outcomes for ICT adoption. The themes discussed in the next sections provided a structure that helped determine the participants' views on the research questions.

Theme 1: Benefits of ICT to SMEs

The first theme emanated from the responses analyzed from Interview Questions 1 and 5, which relate to Research Question 1: "How has ICT improved the business operations of SMEs in Nigeria?" This question examined the participants' perspectives on the benefits derived from ICT as it relates to their organizations and SMEs in general. All the participants agreed that implementing ICT would benefit small and medium-sized businesses in several ways. These include operational efficiency, profitability and growth, increased market share, competitive edge, fast access to market information, improved customer relations, and sustainability. Some participants shared that ICT has

helped sustain their businesses, allowing them to engage in profitable self-employment. Ultimately, this cascades to employing others and reducing dependency on the government. An interesting dynamic central to this theme is that almost all participants agreed that adopting ICT has been the platform that reengineered their business operations for better efficiency, with the resultant positive effect on growth, profitability, and sustainability.

ICT gives SMEs an advantage over competitors in terms of accessing market information, providing customer relations, and ensuring accountability of operations. Increased collaboration and partnership were also widely mentioned as reasons why their businesses continue to thrive despite the economic downturn precipitated by the COVID-19 pandemic. The employment of ICT has helped them to carve a niche and a strong product/brand offering to their target market. The participants admitted that although the distinctions are narrow, they have been able to solidify their brands through ICT. Strategic ICT goals, employees, customer service, and continually increased turnaround times on deliverables were also identified by all the participants as significant success factors.

The strength of small and medium-sized businesses is fundamentally based on their flexibility, quick service, proximity, and attentiveness to customers. The ability to adjust to market demands and changes without bureaucratic bottlenecks that are present in large businesses adds to the sector's appeal and generic competitive edge (Olise et al., 2014). The data from the interviews support this, and the theme is a strategic element of the need for the adoption of ICT by SMEs.

The participants' responses also support the statement by Tedre et al. (2009) that firms can use ICT as a cheap avenue for advertising products and services on the company website or social media platforms, thereby reaching a wider network of existing and potential clientele. A major difference between large businesses and SMEs is the direct customer communication and flexibility that the latter enjoys (Bankole et al., 2013). This advantage can be fully exploited with ICT. The level of customer engagement and communication can be elevated with the internet, emails, and other related platforms, as revealed by the participants during the interview sessions.

Some participants expressed satisfaction with their companies' reduced fraud rate and increased accountability since they invested in ICT. The ease of conducting an audit trail instituted higher accountability in their firms compared to the pre-ICT days of paper and manual systems.

However, it is important to note that different schools of thought exist on this issue. Although researchers like Li (2014) agree with the participants' perspectives on reducing internal fraud since the adoption of ICT, others hold a contrary opinion. Maguire et al. (2007) stated that using online platforms and systems for purchasing and trading by SMEs increases their chance of being victims of scams or cybercrime. The argument is that the infrastructure or techniques that mitigate such acts are mostly unknown and not used by SMEs. Nevertheless, none of the participants revealed any such incident while answering the interview questions or the follow-up probing questions.

Benefits of ICT adoption, as deduced from the participants' responses, include simplification of functions, which has resulted in fewer staff turnovers. The participants listed increased market share, enhanced competitive advantage, and increased global and

local partnerships as benefits they derive from ICT. This aligns with statements by researchers like Chacko and Harris (2006) and Ghobakhloo and Tang (2013) that product differentiation and the creation of niche markets are some of the possible outcomes that can be derived from increased customer communication and relationships, which are ascertained through internet enabled platforms. SMEs can easily deduce their target market's needs and interests through these communication forms.

Theme 2: ICT Strategies for SMEs

The framework for this theme was developed from Interview Questions 2, 4, 6, and 7. The participants' responses to these questions led to the formation of this theme. It also presented viable answers to Research Question 2: "What are the major ICT strategies SME leaders utilize to grow and sustain their businesses for 5 years or longer?" An overwhelming majority of the participants agreed that adopting ICT is a principal strategy that has contributed to their businesses' visible growth, operational efficacy, cost reduction, and eventual survival.

The thematic interpretation of the participant responses to this theme revealed that the significant ICT or computer applications employed by most of the owners for the long-term sustainability of their companies are the systems that support their inventory and sales functions. Studies have shown that over 75% of the operational cost in most SMEs are embedded within the supply chain and sales activities (Clemons & Row, 1991; Ehinomen & Adeleke, 2012). This explains why installing ICT applications like supply chain management (SCM) systems is critical for cost reduction, improved profitability, and continual growth of small and medium-sized firms. The sustainability trajectory of SMEs is hinged on the decrease in supply deficiencies because this will lead to

effectiveness and efficiency leading to overall operating success. The participants' perspectives substantiated this point because most of them were invested in incorporating SCM with plans for extending it to all their operations and branches.

Globalization demands that these business-to-business applications, as they are called, should be an integral part of any business committed to innovative product offerings and creation of a competitive advantage. This is because these applications help strengthen the relationship between the organizations and their suppliers and save business hours and time through efficient communication and coordination between various value chain partners. Some participants also stated that it aids in reducing logistics costs associated with inventory management, such as tracking and stock wastage, because everything can be processed and tracked online. Furthermore, e-commerce applications like SCM are avenues for export opportunities and global expansion that would not have been possible without ICT.

There was an emphasis by several participants that a critical element for the successful implementation of any ICT strategy is a conscious choice and deployment of ICT tools that fit the business structure as well as promote operational efficiency and growth. Participants opined that this is a strategy because the wrong ICT infrastructure can lead to unnecessary disruptions and costs, which will deplete the firm's financial bottom line and demoralize and antagonize staff. A gradual introduction of e-commerce applications is a strategy that will enhance a smooth transition and enable the stakeholders of the business to become well acquainted with technological changes. These strategies provided by the participants are consistent with research on digitized business platforms. Studies have shown that SMEs that are organized by following a

graduation and regulation format for their ICT procedures have less interference and confusion across their business units (Eze et al., 2011; Gray & Saunders, 2016).

Other strategies employed by the participants in their daily experiences of managing their firms included the installation of the internet (email and website) and cloud services for business data storage. Also, hiring skilled staff or ICT managers to train unskilled staff is another way of incorporating ICT into the organization. The participants all posited that these strategies ensure that their businesses are well positioned for competition and growth through efficient ordering and delivery of goods and services to consumers based on growth-promoting parameters of proper timing, correct quantity, quality, and pricing.

Theme 3: Factors Affecting ICT Adoption

The analysis of the responses to the challenges of ICT adoption by SMEs in Nigeria revealed that the perceived usefulness of ICT was the fundamental reason for the adoption of ICT among the participants interviewed. Other significant inhibitors to the adoption of ICT noted by the participants were finance, infrastructural challenges, ICT literacy, insufficient electricity, and so forth. One of the major infrastructural challenges was the lack of sufficient electricity, identified by most participants as a prohibitive factor in the adoption of ICT by most SMEs. Lack of potable water, poor road network for transportation of goods and services, and poor broadband coverage in some areas were also some of the problems enumerated by the participants. The cost of providing these basic amenities by themselves reduces their financial resources and cripples their ability to invest in adequate ICT that can boost profit and sustainability. The participants attributed their success to years of grueling savings to acquire the requisite ICT for their

business. This strategy may be impossible for SME owners now because of inflation and rising costs in the present financial hardships.

These responses are derived from Interview Questions 3, 4, and 7 and addressed Research Question 3: “What are the perceived barriers to adopting ICT strategies among Nigerian SMEs?” They support the statement by Gbandi and Amissah (2014) that the financial capability for the initial investment, related costs of software and hardware, and ICT training for the staff were some of the significant hurdles that delayed the adoption of ICT. Inflation in the country and the squeeze on operating costs remain past and current deterrents to ICT adoption. The Nigeria SME sector is riddled with financial difficulties because of the inconducive business environment and high cost of doing business. Consequently, it becomes a daily struggle for these small and medium businesses to stay afloat, especially the relatively new ones. Most participants stated that this situation places ICT investment on the back burner.

However, participants were quick to note that technology type is also an influential element in ICT adoption. Although SMEs can benefit as ICT users for increased productivity, faster communications, and reaching new clients, not all SMEs need to adopt ICT tools to the same degree of sophistication. The responses of the participants are in tandem with this statement. Most of the participants noted that several ICTs, such as websites, emails, social media platforms, and some e-commerce applications, which are all facilitated by the internet, have a low cost of adoption. A mobile telephone subscriber base of over 200 million and an internet subscription of over 151 million (NCC, 2022) are evidence of a suitable telecommunications infrastructure base in Nigeria. SMEs may then use a personal computer or mobile phone with essential

software for simple information processing needs, such as producing text or keeping track of accounting items. The participants also stated that internet access enables SMEs to have advanced communication capabilities, such as email, web browsing, and website launching.

In addition, the internet is critical to business success and is easily accessible and affordable. It is noteworthy that the affordability of internet service is relative to the type of business, and the adoption of this low-cost ICT is also determined by literacy and awareness. On the flip side, the responses showed that some forms of ICT were expensive to adopt and may not be readily available. These include specialized applications and systems (such as software for accounting, human resource management, etc.). These require specialized training for staff or employing already skilled workers and annual license renewals, which are all cost intensive for most SMEs.

Interestingly, the interviews indicated that ICT facilitated the daily business of any organization, and all the participants agreed that despite the dilemma in the financial difficulty of ICT investment, the use of ICT was of critical importance to SMEs because any firm's survival depended on ICT. The fear of cybercrime is another outcome of the environmental influence and illiteracy that permeates the sector. Most of the participants admitted that this was a fear they had to overcome. MD2 stated, "Even the most sophisticated systems in the West are also susceptible to internet fraud, so that should not be a deterrent to adopting ICT." MD17 also opined that "SME owners should always purchase ICT software or hardware from trusted and certified dealers to reduce exposure to possible cybercrimes."

Theme 4: Internal Organizational Factors

This theme was derived chiefly from participant responses to Interview Questions 6, 7, and 8. Participants were clear in their analysis that several internal factors influence a firm's decision to embrace and use ICT strategies to remain profitable and afloat. One of the issues was the lack of knowledge and ICT awareness of some SME owners on the importance of ICT to their firms' survival. The owner leaders of such SMEs remain attached to their outdated manual business models and dismiss ICT as a waste of time and funds. This attitude stems from the nescience of the role of ICT in boosting their business parameters. Therefore, the philosophy of an SME's management plays a vital role in the adoption or use of ICT in the organization and can motivate or limit ICT investment decisions. Closely related to this is the fear of insecurity, which can be based on fear of hackers, computer viruses, fraudulent activities, and so forth.

Another reverberating issue identified by the participants was the need for internal ICT training among the staff of SMEs. ICT training enhances use and promotes the availability of skilled ICT resources across the sector. Most SMEs are not maximizing the benefits of their ICT because of a lack of qualified personnel. Igwe et al. (2018) and Nikmah et al. (2021) stated that SME owners must be willing to enhance their ICT adoption strategies by ensuring adequate training for themselves and their staff to enjoy the benefits of such investment. The decision to update and expand the scope of their ICT investment is another aspect of this theme deduced from the participants. The dynamism and innovation in the information technology (IT) industry imply the need for frequent software updates and license renewal purchases to keep up with business demands and maintain a competitive edge. Despite being market leaders with many years of business

operations, the costs required to support all these remain as challenging as they were in the early years. Rising costs, lack of government intervention, nonimplementation of policies, and inflation are all causal factors.

Some participants noted that the basis of ICT adoption and the type of ICT adopted by some SMEs was part of a locational or environmental trend. This may be positive or negative. Because many competitors, customers, and vendors were already using ICT in critical aspects of their business operations, implementing ICT based on this factor can be instrumental in attaining and sustaining a competitive edge. However, the technology adopted may not necessarily be suited to the firm's needs or business leading to a waste of much-needed capital.

Theme 5: The Role of the Government in ICT Adoption by Nigerian SMEs

Most participants identified the government as a weak link in the adoption of ICT by SMEs in Nigeria, hence the origination of this theme. In their responses, participants cited the nonexisting or dismal support received from the government toward promulgating an increased level of ICT implementation by small and medium businesses. Issues such as inadequate power supply (pervasive in all parts of the country), poor road networks, lack of potable water, and other infrastructural challenges were the main issues of the responses to Interview Questions 9 and 10.

The effective adoption of ICT is the nucleus of facilitating the growth and sustainability of Nigerian SMEs and positively impacting the national economy. However, this can only be achieved within a business environment conducive to healthy competition; data, personal, and business security; improved ICT financing; and related parameters. Consoli (2012) and Mazzorol et al. (2014) supported this assertion that a

national climate for innovation is the first step in achieving sustainable small and medium businesses in any country. Such an environment is evidenced by favorable government policies and regulations, adequate infrastructure provision, and reduced business costs. Unfortunately, the participants agreed that these are sorely lacking in Nigeria. They stated that based on the economic importance of SMEs, it behooves the government to actualize its responsibilities by providing these facilities and formulating laws and policies that would ease the plight of SMEs.

The responses indicated that improved quality of ICT education in schools, especially tertiary institutions, would be a significant step in promoting ICT awareness. Institutionalizing the value of ICT among the Nigerian youth is crucial in elevating self-employment and establishing an early foundation for budding business owners to compete favorably in today's highly technological world. The participants also suggested subsidized ICT training centers to bridge the educational gaps in schools and allow SME owners to garner the needed ICT skills and understanding.

The participant responses also showed that a lack of financial resources to initiate any ICT implementation was a major challenge impeding the adoption of ICT by SMEs. Economic intervention from the government can be in the form of tax breaks for small and medium businesses and subsidizing the cost of ICT-related needs, such as internet and telecommunications services. Some of the participants interviewed expressed their frustration over their inability to expand the ICT resources of their companies because of limited access to capital through bank financing loans. The astronomical interest rates and request for collateral by the banks truncates any ICT expansion plan. This is another area that requires government support and intervention.

Theme 6: Positive Outcomes of ICT Adoption

The employment of ICT tools in their business operations was one of the success factors mentioned by all the participants as a significant element in the sustainability of their business. ICT gives them a competitive edge in innovations, product differentiation, access to market information, quicker service delivery, customer relations, and ensuring operations accountability. Strategic ICT goals, employees, customer service, and continually increased turnaround times on deliverables were also identified by all the participants as significant success factors.

Conclusions

This phenomenological study aimed to elucidate the ICT strategies that would reduce the nonviability and liquidation of small and medium-sized businesses in Nigeria. This objective was achieved by exploring how successful SMEs in Abuja, Nigeria, employ ICT as a strategic foundation for business sustainability. The study showed that SMEs in Nigeria are saddled with enormous challenges that hinder their ability to incorporate ICT as a central strategy in achieving sustainability. The research was also driven by the significant role played by SMEs in economic development, poverty alleviation, and job creation in Nigeria (Ifinedo, 2006; Nikmah et al., 2021).

The responses obtained from participants enabled the researcher to identify six overarching themes linked to adopting ICT strategies for SMEs in Nigeria. The study findings coincided with several previous researchers' studies discussed in the literature review (Olatokun & Bankole, 2011). These researchers noted that SMEs are influenced to accept and use ICT because of increased productivity, access to business information, increased market share, and improved customer service. These factors ultimately secure

long-term business growth and innovative adaptability to market demands. The findings were also consistent with other studies reviewed, such as those by Apulu and Latham (2011) and Akanbi (2018), which found that perceived benefits, increasing collaborative opportunities, cost of technology, changes in the business environment, and competitive pressure are all reasons for the adoption of ICT by SME leaders.

A significant issue discovered in the literature review was the availability of sufficient and basic ICT infrastructure in the metropolis, and Themes 3, 4, and 5, which relate to the factors that influence ICT adoption and the role of the government, provided evidence to support this statement. The three research questions that provided the necessary guidance for this study are discussed next.

Research Question 1:

How has ICT improved the business operations of SMEs in Nigeria?

The benefits of ICT, which form the core of the first theme, address this research question. The global market is inundated with constant changes, and the competitive advantage of large businesses creates increased pressure on SMEs because of limitations to innovation and competition resulting from their size. However, the participant responses to this question show a positive rating for using ICT among SMEs to mitigate these shortcomings. SMEs' ability to acclimate to business environments and changes can be further enhanced through ICT. Competitive advantage, quicker access to information, increased local and international partnerships, improved customer service, and overall efficiency in business operations were some of the outcomes expressed by the participants. ICT has become an indispensable arsenal for achieving business growth and innovation leading to a higher possibility of business sustenance. All the participants

agreed with ICT's influence on productivity and development, and 75% were impressed with the quantum leap in the efficiency of business operations.

E-commerce products and services have created increased streams of revenue for SMEs through multiple channels of sales via the internet. The internet has also helped reduce advertising fees and brand awareness campaigns. The findings from Research Question 1 also revealed remarkable improvement in customer satisfaction and experience. The quick access to information, feedback, and engagement through ICT has led to improved customer service and retention, which are critical parameters for business sustainability.

Research Question 2:

What are the major ICT strategies SME leaders utilize to grow and sustain their businesses for 5 years or longer?

This research question is answered under Theme 2 with the participants' discussion of their ICT journey, the rationale for the choice of ICT, and the benefits it brings to their business development plans. The responses to this question were predicated on many factors, such as type of business, financial capability, and perceived usefulness. SMEs operate in niche markets and often have the capacity for long-term customer relationships because of the flexibility and proximity of owners to their customers. This aids the firms in streamlining the ICT tools that will be most beneficial to the business and its customer base. The internet and e-commerce products such as SCM were some of the leading ICT tools employed by the participants. Other strategies included hiring and training skilled workers; gradual expansion; and initiating the process with basic devices, such as computers, printers, and the internet.

The responses were categorized into strategic use of e-business tools, enhancement of ICT skills within the firm to improve the ICT adoption, improvement of collaborative partnerships, and engagement with business partners to enhance technology transfer. The study found that although ICT usage has improved over the years, most of the participants started with essential ICT tools and graduated to more complex systems. Participants viewed ICT as an enabler because it creates a platform for the organization to grow and innovate. This realization is, however, not myopic in acknowledging the difficulties in employing ICT effectively because of the challenges within Nigeria's business terrain.

Research Question 3:

What are the perceived barriers to adopting ICT strategies among Nigerian SMEs?

The participants' responses indicated that inadequate infrastructure posed a major obstacle to the adoption of ICT by SMEs. Although these have been exhaustively discussed in the preceding parts of the study, it is significant to note that this is where the government plays a crucial role. The provision of public goods and services, which is centrally focused on amenities, is a critical foundation for implementing ICT by the small and medium-sized business sector in Nigeria. The issue of sufficient amenities is closely related to another barrier to ICT adoption: low financial capability. The study revealed that most of the business capital is spent on improving the quality of the business environment, and consequently, ICT adoption is rendered secondary. Despite the numerous challenges, the flexibility and grit displayed by the participants through their responses are remarkable and majorly responsible for implementing ICT in their

companies. Identifying ICT as a viable resource for sustainability has ensured their firms' continued growth and profitability and the plans for expanded ICT usage.

The study also found that the use of sophisticated ICT application systems among Nigerian SMEs is still generally low, and this is because of the numerous challenges, such as insufficient power supply, insecurity, high cost of doing business, and so forth. As a result, most SMEs still use traditional technologies such as standard office applications and primary tools, such as telephones, fax machines, and Microsoft office software. The high cost of internet services is also an issue that hinders maximum internet use for improved efficiency and growth.

The resource-based view (RBV) theory was used as the theoretical model for this study because it explains how SMEs can use ICT as a strategic resource. Strategies to improve business performance is inextricably tied to ICT strategies because of the importance of ICT in today's business environment. The study's findings further support other studies by outlining the implementation process of ICT adoption by SMEs in Nigeria and emphasizing its continued relevance to small and medium-sized firms. Organizations can now see the need to adopt ICT and use it to make informed decisions that support and improve operations with an overall objective of achieving high efficacy. Ultimately, the varied benefits of a strategic ICT process outweigh the financial and time burdens it places on SMEs.

Implications for Action

The findings of this study present valuable information to owners of SMEs, policy makers, government, and other community partners in Nigeria on the benefits of ICT to the business longevity of SMEs. The primary objective of this study was to explore the

ICT strategies for sustaining SMEs in Nigeria through the lived experiences of successful SME leaders. The increasingly important role SMEs play in job creation, poverty alleviation, and the socioeconomic development of any country implies that the government must simultaneously play significant roles in ensuring SMEs have the resources needed to succeed. This study also discovered that ICT helped SMEs improve communication and increase efficiency and profit, adding business value and customer satisfaction. Despite the success stories recorded, the study found that some SMEs still encounter several challenges that stunt their businesses' growth, and synthesis of actions by the SME owners and the government is advocated to curtail these obstacles.

Implications for SMEs

It is evident from this research that although ICT is used in the Nigerian SME sector, this usage is minimal because of several factors. Some inhibitors are financial challenges, infrastructural inadequacies, lack of ICT knowledge or skills, and so forth. It was discovered that drivers or motivators to ICT adoption include perceived usefulness, competitive advantage, innovativeness, growth and efficiency, and industry type and size. Notwithstanding these issues, small and medium enterprise owners should endeavor to incorporate ICT strategies by conducting a comprehensive checklist of internal and external factors obstructing ICT usage. These internal factors should be specific to the firm and may be technical, staff-related, or an overall lack of awareness. The introduction of essential ICT tools can follow these. Subsequently, SME leaders must identify the appropriate ICT infrastructure to aid in actualizing their business goals and strategic objectives and long-term growth. SME owners need to evaluate the potential return on

investment of ICT adoption and verify the core benefits of any software or ICT tool, such as lower organizational cost, lower hardware expenditure, and information sharing.

Another internal factor identified by the study is the lack of adequate ICT training and development, which is a major obstacle to adopting ICT strategies. Successful strategy implementation is only possible with the knowledge of the practical application. SME owner leaders must invest in staff and personnel training to improve staff adaptability to the technologies incorporated into the business. This training should be a continuum as the technological processes within the firm evolve or are expanded. Optimizing or upgrading existing ICT business applications such as SCM and other e-business tools is often attributed to a lack of knowledge, fear of business disruption, and being comfortable with the norm. This apprehension can be managed by the phased introduction of new technologies or upgrades. Gradual automation of systems and processes can also be affected without disruptions by prior risk assessment procedures. The strategy involves measuring the risks and benefits of actions against desired outcomes. This process will also guarantee that the technologies are appropriately aligned with the organization's corporate objectives.

Furthermore, ICT is dynamic and cost intensive depending on use and industry. SMEs should investigate existing government or public and private partnerships for collaboration and support. This study recommends that SME owners establish associations or register with existing associations to help them access funds from financial institutions to purchase and implement ICTs in their businesses. In addition, SMEs can mitigate the financial challenge of ICT adoption by requesting free trial versions of software from the software companies. Large ICT software companies, such

as Microsoft, Apple, and Google have regional offices in Nigeria and intermittently provide free or trial versions of their software. SMEs can try them out before making their purchases. These trials will reduce the possibility of wasting resources on pirated or substandard software and will allow SMEs to purchase appropriate software that will enrich their business process.

SMEs should identify the various ICT-related resources that can serve as potential sources of competitive advantage for their firms. Studies have shown that managerial ICT skills are rare and firm specific and therefore likely to serve as sources of sustained competitive advantage. Others include competent/personnel ICT skills, customized technology base, and ICT infrastructure. Building a partnership between the firm and beneficial ICT companies or between a firm's operating and business units is the critical foundation for building strong and competitive ICT synergies and strategies (Mata et al., 1995).

Implications for Government/Policy Makers

The increasingly important role SMEs play in job creation, poverty alleviation, and the socioeconomic development of any country implies that the government must simultaneously play significant roles in ensuring SMEs have the resources needed to succeed. The globalization of economic activities resulting from advanced ICT and a decrease in trade barriers provide vast opportunities for small businesses. Invariably, companies can expand their market reach beyond local borders, enhance operational efficiency, and instigate closer customer and supplier relationships. Ultimately, this boost in business activities enhances sustainability and advances the national socioeconomic indices. This study showed that the early closures of SMEs in Nigeria can be alleviated

with ICT. However, this can only be effective by resolving the challenges and reducing the identified barriers to ICT adoption.

The dearth of infrastructure in the operating environment of small and medium-sized businesses in Nigeria remains one of the top deterrents to implementing ICT strategies. Government leaders and public administrators must ensure that SMEs have access to basic infrastructures such as electricity, good road networks, and other infrastructural facilities to help reduce business costs and increase their chances of investing in ICT. The study affirms that improving infrastructural development and its subsequent effect on socioeconomic activities should also enhance business operations for SMEs adopting ICT. It would also encourage others to adopt ICT.

The onus is on Nigerian policy makers and government leaders to demonstrate political will by evolving from policy formulation for political purposes to enacting specific and deliberate policies targeting SMEs and providing more financial support and access to funding. It is the trend for incumbent administrations to develop fire-brigade policies during an election period. This is done by distributing cash to traders and other SME owners under beautifully titled empowerment policies. An example of this type of policy is the TraderMoni scheme. The TraderMoni scheme is a cash transfer loan scheme and one of the microcredit policies of the Government Enterprise and Empowerment Policy (GEEP), which provides soft loans of 10,000 naira only to traders and artisans (Adesina, 2018). It has been widely criticized by political analysts who stated that the scheme was a weaponized social intervention tool that was conveniently constituted a few months before the 2019 general elections. According to the critics, the program was

politically motivated to garner votes in the 2019 general elections (Adesina, 2018; Idris 2019).

These short-term politically motivated inducements will not solve the long-term challenge of business sustainability for SMEs. Government policies and frameworks must be deliberately couched to reflect the practical realities of the Nigerian business environment, which would guarantee effective long-term execution. Issues such as tax incentives for ICT adoption by SMEs, financial support, loans, and subsidies for ICT adoption are all steps that would enhance the workability of such policies.

This study enumerated several examples of actionable and long-term ICT strategies employed by other governments in developed countries such as the Italian example researched by Lucchetti and Sterlacchini (2004). Gbandi and Amissah (2014) also provided more insights on how government can offer financing options for SMEs to enhance sectoral growth and sustainability. Furthermore, there should be an increased partnership with SMEs in a shared ICT vision. This collaboration could be accomplished through awareness and training on ICT for businesses and localizing ICT resources.

To ensure the actualization of national ICT goals, especially relating to awareness and adoption, the government needs to ensure that existing ICT policies are in tandem with today's contemporary and dynamic world. The National Information Communication Technology policy was conceived in 2012 and has undergone little or no change. Considering the dynamic nature of the ICT ecosystem, it is difficult to ascertain the viability of the policy against the numerous innovations and changes that have occurred since its formulation. The policy addresses 23 thematic areas of critical importance, including policy and regulatory framework, internet and broadband

development, local content, coordinated ICT development across all sectors, and national security and safety, among others (The Ministry of Communication Technology, 2012).

The Terms of Reference for a committee was to harmonize all existing policies in the information and communications technology sector into a single information and communications technology policy (The Ministry of Communication Technology, 2012).

However, since then, there has been a National Policy on Information and Communication Technologies in Education, which was developed in 2019 to address the need to have a standardized and coordinated deployment of ICT in education (Yusuf, 2005). In addition, there is the Nigerian National Broadband Plan 2020–2025, which was formulated after the expiration of the first plan in 2018 (NCC, 2022). Although the different policies contrast against the objective of the national ICT policy of 2012, which is supposed to integrate all policies, it is still commendable because it guarantees a focus on the ICT challenges of different sectors. Conversely, this proliferation of approaches by different administrations could also speak to political grandiose because it eradicates continual focus and implementation of the policy objectives. ICT training and education in most Nigerian secondary and tertiary institutions remain subpar despite developing a policy to address the issue. The issue is not the creation of policies and regulatory frameworks but the actualization of such policies.

Several developed nations have effectively implemented ICT policies by developing different policies for different sectors. This approach can also be achieved in Nigeria through a continual implementation process regardless of administrative changes. An ICT policy formulated for the SME sector will address most challenges hindering ICT adoption. This study has significant ramifications for SMEs in Nigeria because it

provides the basis for creating policies that affect the SME sector. Understanding the factors that influence or hinder the acceptance of ICT will aid in formulating policies that address these challenges. The issue of low awareness and lack of ICT training can be addressed by establishing subsidized government ICT training or skill acquisition centers. The promotion of ICT literacy can also be enhanced by improved quality of ICT teaching in schools and higher learning institutions. Establishing wireless access points nationwide would encourage e-commerce and transactions, promoting increased ICT adoption by SMEs.

Implications for Academia

This study outlines how ICT strategies can help SMEs in Nigeria, and it also contributes to the body of knowledge on the SMEs' ICT discourse. The study findings are valuable because they may meet the diverse needs of students, academicians, and fellow researchers. Students can gain contrasting thoughts from authoritative sources of educational material to carry out additional research projects. For academicians, the findings of this study provide them with additional scholarly information that furthers the discourse on SME sustainability in Nigeria and other developing nations.

Recommendations for Further Research

The researcher hopes this study will motivate other areas of research on this topic such as investigating how government can incrementally deliver on ICT policies that will promote the business health of SMEs in the country. It is recommended that future studies on this issue can focus specifically on internal factors that may affect ICT adoption among SMEs. These issues may range from the demographics of the SME owners (educational qualifications, age, experience, ICT knowledge, etc.) to firm

characteristics (size, sector/industry, company policy, level of ICT skills among staff, etc.). Research can also be targeted at exploring single or multifactorial influences, such as government policies, operating environment, competition, and industry issues.

The leadership styles of SME owners and their effect on decisions to adopt ICT is another area of study that researchers can explore. In their research on strategy, planning, and innovation in Australian SMEs, Mazzarol et al. (2014) discovered that leadership was a crucial factor in SMEs adopting ICT for growth and survival. Such a study can be replicated in Nigeria to examine the correlation between leadership styles and positive influence on adopting ICT strategies among Nigerian SMEs. Such a study will enhance the understanding of the impact of SME leadership on ICT implementation.

This study was based in Abuja, Nigeria. Abuja is one of the major cities in Nigeria alongside Lagos, Port-Harcourt, Kano, Onitsha, and others. Although several related studies have been conducted in Lagos and other Southern cities, it will be beneficial to this area of research to expand the scope of this type of study to different geographical regions of Nigeria, for example, the Northern part of the country. Topics to investigate in such a study would include sociocultural influences on ICT adoption among SMEs, academic qualifications and multicultural exposure influence the decision to implement ICT strategies, and other related issues. Researchers can also compare ICT adoption among the different regions in Nigeria.

This type of research on sociocultural influences can be extended to a study that solely investigates the impact of culture on ICT adoption. Nigeria and Africa, in general, are highly cultural societies, and studies have shown that individual attitudes and culture play key roles in decisions relating to technology (Olise et al., 2014). Retesting the

research findings and the recommendations in different parts of the country and the continent will help to determine whether the findings have the same impact or are less significant in other areas.

Similarly, a comparative study on incorporating ICT strategies between Nigeria and other developing nations can be examined to gauge the differences in adoption levels and beneficial lessons that can be adopted from other countries. A significant advantage of a comparative study is that it will present and compare the growth, development, and influences of ICT adoption in the African region. The findings of such studies can provide valuable information for SME leaders, researchers, and the government to help address many of the challenges encountered by SMEs in Nigeria. Researchers have compared ICT adoption strategies in developed countries, such as the United Kingdom and the United States. This can also be done between two developing nations, Nigeria and South Africa and Togo and Ghana, and others.

Another opportunity is to conduct a comparative study of competing SMEs utilizing ICT. This research will be done using the RBV theory as the framework. A close look at leading SMEs in a particular sector can explain how the organizations attained such competitive advantages using ICT as a rare, unique, and imitable resource. This study can compare the specific perceptions of each competitor on the contribution of ICT to its relative advantages or disadvantages. This would further validate the use of ICT strategies as nonsubstitutable resources that can be used for competitive advantage. It would also be a helpful resource that can guide SME owners on how to customize, strengthen, or maximize their ICT infrastructure for growth and profitability.

This study used the phenomenological approach. Although this is the norm for research topics such as these, using a mixed or quantitative approach may uncover some pertinent findings that will improve the knowledge in this research area.

Concluding Remarks and Reflections

This doctoral journey has been challenging, insightful, and ultimately rewarding in terms of education and expansion of knowledge in issues pertaining to SMEs and ICT. The researcher attained an increased understanding by interviewing the SME leaders and by studying the vast literature that was reviewed during the research. This study was initiated without any preconceived notion of the outcome or findings of the study. The researcher ensured that participants were guaranteed comfort, and there was full disclosure in an informed consent form provided to and signed by the participants to ensure they fully understood the terms and conditions of participation.

Conducting research in an environment that is very familiar and in an industry that one has operated in for over 10 years was a lesson in understanding the value of suppressing a researcher's bias. The researcher ensured clarity and objectivity by removing personal experiences or prejudices, a skill that was sharpened during the study. Furthermore, Nigeria and most developing nations do not have the best academically conducive environment. The researcher experienced psychological stress while working on the study because of national and international crises that occurred during this academic pursuit. However, just like the SMEs that must constantly compete against larger organizations by using unique characteristics such as size, adaptability, personalized service, and flexibility, the researcher had to self-examine herself and dig deep to find the qualities that would guarantee success. The importance of organization,

stamina, diligence, and resilience are constantly paraded as the top positive qualities of Nigerians. The researcher's doctoral journey affirmed this truth and solidified these qualities.

The researcher gained new perspectives and insights that were beneficial to her work and personal plans. The small and medium-sized sector is instrumental to Nigeria's economic growth and social development, and the researcher hopes that this study has contributed to encouraging more SME owners to adopt ICT to sustain their business. The heavy reliance or dependence on the government is unrealistic and, more importantly, unfeasible, considering the staggering statistics in the population of Nigeria. An increased economic contribution from the private sector through profitable and continually growing SMEs that will graduate to large corporations is possible and can be actualized through ICT and the appropriate government intervention and support.

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