

# The Concept and Application of ICT on SMEs performance in Nigeria: Limitation and Challenges

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## ABSTRACT

Small and Medium Enterprises (SMEs) play a vital role in growing and building developing nations' national economy. This study investigates a deep understanding of the influence of Information Communication Technology (ICT) on SMEs' performance in Nigeria. The study found out that most SME owners engage in local business practices in nature of the operation, and marketing strategies are limited within the country. Hence, this is a growing concern, the need to broaden the field of doing business through global integration with ICT aid, which would improve the country's economic growth at large. Based on the literature reviewed, this research work helps to identify the underlying causes, limited ICT readiness, its effectiveness and the need for ICT implementation into business processes, and the knowledge of its potential benefit. Therefore, this paper examines the role of ICT in small businesses' performance; this is estimated to enhance firm productivity and increase profitability, improving overall SMEs' performance. The study recommends that provision be made for more ICT training facilities, and SMEs need to embrace information and communication technology in terms of resources, networks, and consumer skills. Entrepreneurs are to be enlightened and educated on how ICT can be used to boost operating efficiency. The government should create an enabling environment by offering ICT infrastructure that will promote its growth and implementation in SMEs. This study's data relied on secondary data and current research on SMEs worldwide, focusing on Nigeria.

**Keywords:** *Small and Medium Enterprises, Information Communication Technology, Limitation, Challenges*

## 1.0 INTRODUCTION

Globalization and digitalization have transformed how business is conducted and competes in the marketplace. Information and communication technology (ICT) is the lifeblood of this transition. This transition has resulted in a modern market strategy known as the knowledge economy. SMEs need to

invest in this economy to compete and thrive amidst several competitors, which paves the way to unlock business success in this 21<sup>st</sup> century. The impact of ICT is evident in the daily operations of companies' marketing strategies. The literature reviewed shows that Nigeria's small and medium enterprises (SMEs) have a long way to make the sector important, centered, profitable enough, and survive in technology and uncertain environments. SMEs play an important role in job creations, tax contributions, and human resource development in most nations, particularly in developing countries like Nigeria (Chen & Zhang, 2015; Maemunah, 2017). SMEs in developing countries face multiple challenges, such as working capital, poor human resource abilities, lack of technical know-how, also obstacles from the internal (individuals and organizations) as well as from the external forces, such as marketing, technology, industry, government policy, etc. (Ramli, 2016). SMEs are contributing to the growth and development of Nigeria's economy. Small and medium-sized businesses include organizations in most countries that contribute to the growth and build employment, which is important for the growth of both developed and emerging economies. (Okundaye, Fan, & Dwyer, 2019). The goal of every business entity, especially SMEs, is to exploit all business opportunities and technologies to increase its operation's overall efficiency. However, most small business owners in Nigeria engage in local business practices, like the operation and marketing strategies, were limited within the country. Hence, this is a growing concern, the need to expand the scope of doing business through global integration with ICT aid, which would improve the country's economic growth at large.

SMEs require new technological methods to promote their growth since their exceptional characteristics have a special place in the business community. ICT improves enterprises' manufacturing process as a tracking technology that lowers production expenses, raises operational capabilities, and influences inter-organizational market collaboration. In this 21<sup>st</sup> century, organizations worldwide have come to understand that the only tool to reform all of their operating processes and activities is ICT, which incorporates new business approaches such as e-commerce, e-banking, and e-government.

ICT offers the basis on which SMEs can build their business information systems to strengthen their business processes, customer relationships, and efficient delivery of products and services to satisfy other clients' needs (Nuamah-Gyambrah, Agyeiwaa, & Offei, 2016). Modern ICT tools are seen as great potentials contributing to the company's sustainable competitive advantage if applied in a relevant way. Business transactions' efficiency and effectiveness can grow due to faster, accurate, and timely information processing. ICT plays an important role in the modern information economy. SMEs need to invest in this economy to compete and progress in the future (Modimogale & Kroeze, 2011; Ladokun, Osunwole, & Olaoye, 2013). ICT contributes to an effective flow of data in organizations, helps them to get information at any time and achieve the desired goal (Apulu & Latham, 2011). The use of ICT in SMEs facilitates cooperation within an organization and between one organization and another (Apulu & Latham, 2010). It is necessary to adopt ICT innovations to improve SMEs' business processes to improve efficiency, profitability, and higher growth potential (Attom, 2013). The low rate of ICT adoption in emerging economies is due to many impeding factors that limit SMEs' development in the regions.

In the most technologically advanced country, economies are genuinely knowledge-based. Countries worldwide are changing from a manufacturing economy to an information economy in which economic development relies on a country's capacity to produce, accumulate and disseminate knowledge. Computers and the internet have catalyzed the development of the information economy by allowing people to bring knowledge in a digital medium that can be quickly shared anywhere in the world.

In Nigeria, small and medium-sized enterprises engage in the best surviving business activities because they are local. Still, they need to move forward through global integration because government policy did not encourage SMEs' growth towards the world economy to compare with that of the developed countries. Small and medium-sized businesses have been the engine that promotes industrial growth and development globally and has since contributed enormously to emerging nations' economic growth, including Nigeria. Thus, ICT is recognized as a driving force that accelerates market growth both locally and internationally (Nuamah-Gyambrah, Agyeiwaa, & Offei, 2016). In emerging nations, small and medium-sized businesses have lower ICT adoption rates and various problems than those of their contemporaries in developed countries (Okundaye, Fan, & Dwyer, 2019). Hence, this research studies the

limitation and challenges of ICT in small and medium enterprises' success through productive and effective institutional practices in Nigeria.

Introduction section covers the broad idea of the present study, clearly states the problem statement, study gap, and research objective(s) and/question(s) which navigate the direction of the study.

## **2.0 CONCEPT OF SMALL AND MEDIUM ENTERPRISES (SMEs)**

The concept of SMEs differs from country to country, and varies across sources documenting SMEs statistics. There is no universal concept for small and medium-sized businesses, with general meanings ranging from country to country and from one industrial field to another. Julta et al.(2002) assert that small and medium-sized businesses have been categorized according to different metrics, such as the cost of assets employed and resource allocation. The concept of small and medium-sized enterprises (SMEs), as presented by the European Union (EU), is accepted as universal; it states that small and medium-sized enterprises (SMEs) are an organization engaged in economic activity; notwithstanding its legal form, it consists of institutions with less than 250 staff, with an annual turnover not exceeding EUR 50 million (€) and a gross annual balance sheet not exceeding EUR 43 million (€) (EU, 2015). Small and medium-sized businesses are viewed in different shapes and sizes. Still, they may have similar industrial, organizational, or governance partnerships with other enterprises in an increasingly challenging market climate. These partnerships sometimes make it challenging to draw a straight line between an SME and a larger organization. The concept of small and medium-sized enterprises (SMEs) is a realistic tool designed to help small and medium-sized enterprises define themselves to obtain maximum government support and help the government formulate a strategy that can effectively support small and medium-sized enterprises in each region.

In Nigeria, small and medium-sized enterprises (SMEs) were described by the National Council on Industry at its 13th Council meeting in July 2001 as follows: the small-scale industry is the industry that has a labour size of 11-100 employees or a total cost of not more than 50 million Naira(₦), including working capital, but excluding land costs. However, the medium-scale industry is a labour force of between 101 and 300 employees or a cumulative expense of more than 50 million Naira(₦), not more than 200 million Naira(₦), including working capital but excluding land costs (Moruf, Akande, & Yinus, 2014). The National Association of Small and Medium-Scale Enterprises (NASME) in Nigeria describes a small enterprise as an enterprise of fewer than 50 employees and an annual turnover of 100 million Naira(₦). A medium-sized business is described as a company with less than 100 employees and an annual turnover of 500 million Naira(₦). The Central Bank of Nigeria (CBN) and also the Small and Medium Enterprise Equity Investment Scheme (SMEEIS) describe small and medium-sized enterprises as any enterprise with a maximum asset base of 200 million Naira(₦) excluding land and working capital, with the number of employees estimated to be no less than ten and not more than 300 (Moruf, Akande, & Yinus, 2014; Akade & Yinus, 2013).

Moreover, in deciding whether a business is an SME, the enterprise's scale in terms of staff, turnover, and the gross balance sheet is not the only consideration to be weighed. An organization may be very limited in this context; however, if it has access to substantial additional capital (e.g., whether it is owned, connected to, or affiliated with a larger enterprise), it will not be qualified for SME designation. The concept of small and medium-sized businesses distinguishes between three distinct types of enterprises; independent, partner, and connected. Each category refers to a type of partnership that an organization might have with others. This classification is important to give a good view of an enterprise's economic condition and distinguish those that are not legitimate small and medium-sized businesses. By measuring its data with the benchmarks for these three parameters, the enterprise can be established if it is a micro, small or medium-sized enterprise (EU, 2015; Gilaninia, et al., 2012) as follows:

- i. Micro-enterprises are classified as firms that hire fewer than ten people and whose annual revenue or annual balance sheet not exceeding 2 million Euro (€).
- ii. Small enterprises are classified as firms that hire fewer than 50 people and whose annual turnover or annual balance sheet not exceeding 10 million Euro (€).

- iii. Medium-sized enterprises are classified as firms that hire fewer than 250 people, and either has an annual revenue not exceeding 50 million (€) or an annual balance sheet which does not exceed 43 million (€).

Small and medium-sized enterprises have been the engine that promotes economic development internationally. Small and medium-sized enterprises have made an enormous contribution to economic growth in developing nations, including Nigeria. Small and medium-sized enterprises (SMEs) occupy a position of pride in almost every region. According to Ongori and Migiro (2010), small and medium-sized businesses help boost people's living conditions and generate significant local wealth and achieve high levels of competitiveness and capacity. The success of small and medium-sized businesses in Nigeria is very low due to its poor ICT infrastructure state. The use of new technology to manage enterprises would increase competitiveness; thus, a nation that is hesitant to embrace ICT technologies may lag and experience a downturn in economic development.

### **3.0 CONCEPTUAL FRAMEWORK OF ICT IN SMEs**

Today's information and communication technology (ICT) transition has transformed the way people and organizations manage their enterprises. The advent of ICT is one of the remarkable discoveries of engineering and scientific study in the 20th century that has produced immense improvements in every human life area (Hassan & Ogundipe, 2017). ICT first emerged in the mid-1980s and was described as all communication devices used for radio, networking, and computer-based communications, including desktops, computer games, smartphones, web, card transactions, computer applications, etc. ICT comprises of electronic and technological advances. Computer technology is a medium for storing and manipulating digital forms of information, while information technology allows to transfer and transmit electronic information (Fasiku, 2014; Julta, Bodorick, & Dhaliwal, 2002).

The theoretical and academic discourse on the complexity of technology and SMEs' association has always been intense, thus promoting fundamental changes. ICT involves a range of technical applications in the process and exchange of information. The term, information implies intelligence, and technology connotes the use of machines and communications. ICT may be characterized as the integration and implementation of computing, networking, and information processing technology. Therefore, ICT means integrating technology applications and communication technology for gathering, sorting, saving, and sharing information, and it is often related to technologies used to capture, archive, modify and transmit information in several formats. It uses computer-based technologies and the internet, cellular networks, smartphones, machines, applications, web services, video calls, social media, and other network sites to make digital communication resources accessible to a wide variety of people. The techniques used in ICT comprise computer algorithms, databases, network infrastructure, computational and software tools, operating systems, machine learning, information bases, etc. (Hassan & Ogundipe, 2017). In small and medium-sized businesses, ICT is used for strategy formulation, connectivity and coordination, customer access, management and decision, and data knowledge management, thus providing an important way of handling information and product distribution (Sajuyigbe, & Alabi, 2012).

ICT plays an essential role in assisting small and medium-sized businesses to get ahead of competitors by gaining entry into foreign markets. ICT application by many organizations has helped lower processing costs, resolve distance limitations, cut through regional borders, and enhance operations within geographic borders. ICT can strengthen the core market of small and medium-sized businesses in every phase of the business operation. The use of ICT also tends to minimize the cost of collaboration and improve the procurement of organizations. The advancement of ICT also produces a positive degree of cost reductions, prospects, and eases business enterprises. It varies from fully-automated market processes that improve efficiency to the big data transformation, where businesses convert the broad range of ICT-generated data into information that enables innovative products and services, to internet interactions such as shopping online, telehealth, and networking that offer customers more flexibility about how they interact, communicate, and connect to the world at large (Onileowo & Anifowose, 2020).

## 4.0 THE LIMITATIONS AND CHALLENGES OF ICT IN SMEs

Given the substantial benefits of small and medium-sized enterprises in any nation's growth, numerous factors have been identified as impeding its growth, particularly in developing countries. Such constraints have become substantially problematic in so many organizations, and they are more likely to suffer from the effects of such restricting factors due to size and cost limitations (Rahayu & Day, 2017). Such factors include a lack of sufficient credit, a substantial lack of technical improvement; insufficient and inadequate infrastructure; a lack of skills; a low degree of entrepreneurship education; and a staff turnover that affects efficiency, production, and expansion.

### 4.1 Limitations of ICT in Nigeria SMEs

SME development in Nigeria lacks the human technological resources needed in ICT. Most SME operations focus on day-to-day activities and lack the new technologies' skills to drive their businesses, even when they know the potential benefits of using ICT. Still, it requires technological know-how or qualified personnel. Internal and external barriers in an organization also limit ICT implementation in SMEs. The internal barriers include owner-manager attitudes toward ICT, firm characteristics, cost, and return on investment, while the external barriers are infrastructure, social, cultural, political, legal, and regulatory. SMEs face greater risks than large organizations regarding ICT investment and implementation since they have limited resources and training required in ICT (Emmanuel & Alfred, 2008). The use of ICT tools in SMEs development in Nigeria experiences the following limitations:

- i. **Government Policy:** The government has a major influence in setting up small-scale firms in Nigeria. They can create an enabling environment for SMEs to propagate by diverting government intervention and creating flexible laws and policies to use ICT to boost SMEs in Nigeria efficiently.
- ii. **Unstable Economic Policy:** Nigeria always faces instability in governance, which negatively affects SMEs' productivity and functionality. When the new government takes over, the past government's policy is abandoned, which sometimes leads to instability in policy and impedes SMEs' efficiency and overall performance.
- iii. **Poor Policies and Procedures:** The past government developed several policies to enhance and encourage SMEs' activities; however, they failed to meet their target due to weak policy implementation.
- iv. **Lack of Continuity:** In Nigeria, most small and medium-sized businesses are sole owners and frequently cease to operate as soon as the founder fails or passes on. Therefore, it increases the potential of ICT financing due to the limited time restrictions in the enterprise.
- v. **Poor Managerial Competencies:** The requisite skill to manage an enterprise has always been challenging in this sector. Most smaller firms lack the essential managerial competencies needed to operate as soon as they expand. This condition is exacerbated by the fact that ICT education has not been given optimum priority in the institutions.
- vi. **Lack of Necessary infrastructural facilities to benefit from ICT:** In Nigeria, most of the ICT infrastructures, such as the internet, telefax and e-mail, are dependent on NITEL (Nigerian Telecommunications Limited), NIPOST (Nigerian Postal Agency), and PHCN (Power Holding Corporation of Nigeria) services. These services are epileptic in delivery and attract unbearably high bills. Also, ICT infrastructures are limited resources even in schools as well as in industries and society. With the limited ICT resources, it is often difficult for SMEs to increase ICT use in expanding the business.
- vii. **Low capital outlay:** Capital plays a major role in determining the continuity and failure of any business. Thus, insufficient capital outlay has always impacted small business unfavorably. Financiers are sometimes reluctant to contribute their funds to this sector as it is viewed as having a high risk (Onileowo & Anifowose, 2020).

### 4.2 Challenges of ICT in Nigeria SMEs

In developing economies, small and medium-sized enterprises are confronted by the modernization of development and skill transfer in different determinants of market competitiveness. ICTs can boost performance and competitiveness in several areas, such as enhancing resource utilization efficiency,

lowering costs and technological development, and contributing to an external change in output function. Despite all the advantages of ICT, it has also raised difficulties and obstacles for institutions, people, and the environment. The digitization of records, the use of the high-speed internet, and the rising digital infrastructure have contributed to new levels of criminality in which so-called corrupt individuals may remotely crackdown every SME's database or unlawfully obtain access to networks for stealing funds, property rights, confidential information by undermining systems that manage key infrastructure.

Besides, small and medium-sized businesses in Nigeria have not reaped this innovation's possible value, poorly in terms of government ICT infrastructure projects in the region. Their success and contributions to society could continue to decrease. ICT has also provided robotic process automation innovation that deprives inexperienced employees of their positions, particularly those who are unable to pass their skills and knowledge to new jobs. Also, it restricts the degree to which people make contact with others, causing what certain people resent seem to be a society that might lose much of what made it unique (Onileowo, 2019). Small and medium enterprises' challenges to move beyond these first few stages were discussed below and ultimately integrated ICT in more complex enterprise applications. Hence, the following challenges are identified as impeding the incorporation of ICT in Nigeria:

- i. **Insufficient Infrastructural Growth:** A conducive business environment contributes to the functionality and performance of the business enterprise. However, the government's effort to ensure and build a desirable atmosphere for small and medium-sized enterprises is not enough, thus there is a need for improvement by encouraging them to incorporate ICT in their businesses, as the problem of infrastructures ranges from inadequate transport systems and lack of electricity in most rural areas and some cities, and these two factors are the bases of using ICT in any nation.
- ii. **Financing and Sustainability:** Cost and sustainability are the major challenges for SMEs when bringing new ICT revolutions into their business. Most Nigerian small and medium-sized companies are faced with high ICT operational cost, so they often neglect the incorporation of ICTs but instead, they use their funds for other activities which would contribute to rapid revenues.
- iii. **Socio-economic Problems:** The socio-political desires of certain entrepreneurs could distract essential funds and industry resources to public misuse. The issue of discrimination towards products manufactured in Nigeria (reducing the demand for domestically generated goods) is critical. Instead, it reduces the interest of the investors to put a large amount of capital into ICT. Hence, a traditional Nigerian businessman wants to invest today and harvest the following day.
- iv. **Strategic Planning Issues:** Small and medium-sized businesses frequently may not conduct adequate organizational strategy in their business operations. That is one of the main challenges of small and medium-sized businesses as they lack strategic planning capabilities.
- v. **Fear of taking greater risks:** Small business owners face considerable pressure, given the risk of setting up a business as well as the broad range of competencies needed to perform the job. Risk management is the firm's ability to determine and proceed without a clear understanding of potential profits and, if appropriate, to rely on human, financial, and business risks. It represents the extent to which a business recognizes investment opportunities. However, small and medium-sized enterprise owners in Nigeria prefer to avoid risk-taking due to a fear of loss, particularly those small and medium-sized enterprises that have not been planned to innovate, are more content with the current results, and are much more probable to be reluctant to take risks.

## 5.0 CONCLUSION AND RECOMMENDATIONS

In the light of the findings mentioned above, the research makes the following recommendations:

- i. Provision should be made for more ICT training programs for small and medium-sized businesses to offer affordable access to specialized ICT consultation and guidance at a fair cost to SMEs.
- ii. Small and medium-sized enterprises in Nigeria must adopt communication and information technology to housing, technology, and consumer skills. It directly contributes to small and

- medium-sized enterprises' success in terms of revenue increase, patronage increase, customer base, and productivity.
- iii. The government should make the ICT business atmosphere more favorable by offering ICT infrastructure that will promote its growth and adoption in small and medium-sized enterprises (SMEs).
  - iv. Business entrepreneurs should be equipped with knowledge and skills about the relevance of ICT and how it could improve operational efficiency.
  - v. Following the national ICT scheme, the research suggests that the government must endeavour to make sure all efforts are directed towards achieving the complete adoption of ICT by MSEs in Nigeria.

Conclusively, the impact of ICT on industries cannot be denied. The research examined the concept of ICT's limitations and challenges on SMEs' performance in Nigeria. It further highlights the critical association between ICT and its effects on the performance of small and medium-sized businesses in Nigeria. This study showed that ICT has a lot of impacts on SMEs, improving market efficiency in terms of production, cost benefits, profitability, lower operational costs, and enhancing Nigeria's economic growth. Also, there is a need for firms that are yet to incorporate the ICT concept to do so to increase the quality and productivity of their corporate activities, which, in turn, would boost the competitive advantage of small businesses as well as put them in a position to perform at the same par with the international community.

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