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INFORMATION AND COMMUNICATION TECHNOLOGIES (ICT) AND PERFORMANCE OF MICRO, SMALL AND MEDIUM ENTERPRISES (MSMEs) IN NIGERIA

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ABSTRACT: *The study examined the causality between ICT utilization and the performance of MSMEs in Nigeria, in terms of market visibility, marketing effectiveness and business survivability. Cross-sectional research design was adopted. Using a structured questionnaire, we obtained primary data from 337 operators of MSMEs. The data obtained were descriptively analyzed and interpreted, whereas the hypotheses of the study were tested using regression analysis. The study found that ICT utilization had a significant positive effect on the performance of MSMEs in Nigeria. Specifically, the findings showed that the utilization of ICT tools by operators of MSMEs in Nigeria had the capacity to substantially improve their performance by enhancing market visibility, marketing effectiveness and business survivability. The insights of the study can be useful in providing definitive evidence for operators of MSMEs in developing countries to realize the enormous potential of ICT and its capacity to bolster corporate performance in an ever-more dynamic business environment marked by technological uncertainty, and competition. This study makes a novel contribution to knowledge regarding the relationship between ICT and performance of MSMEs in the Nigerian context. The study has been able to generate empirical evidence that definitively demonstrates that the utilization of ICT tools can significantly improve the performance of Nigerian MSMEs by enhancing their market visibility, marketing effectiveness and business survivability.*

KEYWORDS: Marketing Performance, MSMEs, ICT, and Digital Marketing

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INTRODUCTION

The successful existence of micro, small and medium companies (MSMEs) is viewed as an economic benefit to countries, given that MSMEs are recognized to contribute significantly to economic growth, job creation, and poverty reduction (Etim et al., 2021; Etuk et al., 2022). In Nigeria, it is projected that MSMEs account for approximately 50 percent of the gross domestic product (GDP) and employ over 60 million people, which is about 84 percent of the country's entire workforce (Ezigbo, 2022; Mpuon et al., 2021). Around the world, MSMEs represent the backbone of several economies, including the Americas, Europe and Africa (Chitsimran et al., 2020; Mpuon et al., 2023; Etim et al., 2023). According to data from the World Bank, MSMEs employ over 60 percent of the workforce in developing countries and contribute over 40 percent of developing countries' GDP (Ezigbo, 2022; James & Inyang, 2022). In acknowledgment of the enormous contributions of MSMEs to global and regional economic development, numerous business strategies and technologies have been introduced to ramp up the competitiveness and resilience of these firms. One of these is information and communication technologies (or ICT) (Khalil et al., 2022). According to Okundaye et al. (2019), ICTs are a collection of all manner of internet-based, electronic and digital tools, devices, systems, tools, programmes, software, and hardware designed to help users optimize productivity while reducing their efforts. ICTs have altered the way businesses run, providing enhanced efficiency and profitability in the digital world of today (Shettima & Sharma, 2020; Anyadighibe et al., 2021; Etuk et al., 2021). Micro, small, and medium enterprises (MSMEs) are no exception. The usage of ICTs by MSMEs has become increasingly vital in the highly competitive global economy.

One of the essential uses of ICTs by MSMEs is in enhancing production processes (Igwe et al., 2020; Etim et al., 2023). ICTs boost the efficiency and precision of production processes from inventory management through the actual creation of products and services. MSMEs can utilize enterprise resource planning (ERP) software to manage inventory levels in real-time, which helps businesses avoid stock-outs and wastage. With the use of ICTs, MSMEs may also evaluate data on sales, consumer preferences, and market trends, which helps to optimize manufacturing processes. Furthermore, Tijani et al. (2021) observed that in Nigeria, the deleterious repercussions of the recent COVID-19 epidemic and the increasing rate of digitization of the Nigerian society are driving business organizations, including MSMEs to resort to ICT tools in their operations. However, compared to large-scale firms, the adoption and exploitation of ICTs by MSMEs in Nigeria are still sluggish and inhibited by various issues, including digital illiteracy, lack of technical know-how, cyber-fraud and lack of technological infrastructure, among others. As a consequence, scores of MSMEs confront the real concern of market extinction as environmental conditions in Nigeria continue to change. According to the Nigerian Association of Small and Medium Enterprises (NASME), "over 600,000 micro, small and medium enterprises (MSMEs) have shut down in Nigeria in the last one year, due to unfavourable business environments and other socioeconomic challenges" (Salau, 2022).

If this status quo keeps up without conscious interventions by relevant stakeholders and MSMEs operators, even more of these enterprises are likely to be eliminated from the Nigerian market, thereby causing mass unemployment, commodity scarcity, and decline in economic growth in the next several years. In response, Nigerian MSMEs are gradually resorting to new ICT tools, including social media, financial technologies, and mobile software to bolster their business processes in the face of environmental disruptions and intense competition from large enterprises (James & Inyang, 2022; Etim et al., 2020; Etuk et al., 2022; Anyadighibe et al., 2022). How effective are these ICT tools at enhancing the performance of MSMEs in Nigeria? A preliminary scoping review of relevant

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studies has revealed that there has been some research effort among Nigerian scholars on ICT application by business organizations. However, it was observed that the majority of existing studies were limited to the factors driving the adoption of ICT tools by SMEs in Nigeria (Apulu & Latham, 2011; Nyakuma et al., 2016; Irefin et al., 2012; Ladokun et al., 2013). Other available studies were restricted to how ICT adoption has affected the performance of SMEs in Nigeria (Igwe et al., 2020; Okundaye et al., 2019; Shettima & Sharma, 2020). The major gap observed is that existing scholars are yet to rigorously explore the causality between ICT application and performance of micro enterprises in the Nigerian context. In light of the foregoing, this study was carried out to provide comprehensive empirical evidence demonstrating the influence of ICT on the performance of micro, small and medium enterprises in Nigeria. Its specific objective was to determine the extent to which ICT utilization by operators of MSMEs influenced their market visibility, marketing effectiveness and business survivability in Nigeria.

LITERATURE REVIEW

Micro, Small and Medium Enterprises (MSMEs) in Nigeria

The precise definitions of micro, small, and medium businesses depend on the country and who is delineating the words. In Nigeria, micro, small and medium enterprises (MSMEs) are often referred to as enterprises with up to 250 employees (Ebitu et al., 2016; Etim et al., 2023; Inyang et al., 2022). For micro enterprises, they are acknowledged to have an employee base between 1 and 9 employees. Small firms are considered to have an employment base that is between 10 and 49 employees, whereas the staff population of medium enterprises spans between 50 and 249 individuals. According to the Ministry of Industry, Trade, and Investment, Nigeria has around 37.07 million micro, small and medium-scale enterprises (MSMEs), and they account for more than 84 percent of all occupations in the country (Yahaya et al., 2016; Etuk et al., 2022; Awara et al., 2021). The ministry further claimed that MSMEs in Nigeria also contribute approximately 48.5 percent of the gross domestic product (GDP) as well as about 7.27 percent of products and services exported out of the nation. Based on the total numbers of MSMEs in Nigeria, micro firms account for the bulk with 36,994,578 enterprises (approximately 99.8 percent), while small enterprises grabbed 68,168, and medium enterprises 4,670. Lagos, Oyo and Kano State are the top three states in Nigeria with the largest number of MSMEs (Yahaya et al., 2016). Furthermore, Anyadighibe et al. (2023) added that MSMEs are collectively the greatest employers in many low-income countries, although their survival might be jeopardized by a lack of access to such risk-management instruments as savings, insurance and credit. Their expansion is typically hampered by restricted access to financing, equity and payments services. Access to financial services can consequently stimulate employment creation, raise income, reduce vulnerability and increase investments in human capital.

Information and Communication Technologies (ICT)

Information and communication technologies (or ICTs) are a collection of all manner of internet-based, electronic and digital tools, devices, systems, tools, programmes, software, and hardware designed to enable users maximize productivity while minimizing their efforts (Anyadighibe et al., 2023; Inyang & James, 2022; Etuk et al., 2022). They are the instruments and technology that allow for the generation, storage, processing, and transfer of information and communication. In the context of this study, they comprise technologies such as computer systems, mobile application software, social media resources, inventory management systems, business productivity tools and

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electronic accounting systems. Since their inception in business processes, ICTs have altered the way business organizations operate and communicate with their stakeholders. Their objective in corporate organizations is to improve communication, promote efficiency, enhance production, and create a competitive edge (Apulu & Latham, 2011; James & Inyang, 2023; Etuk et al., 2022). To begin with, ICTs have revolutionized the way corporate organizations communicate internally and internationally. Communication inside a company is vital for its success. ICTs provide speedier and effective communication through multiple means such as emails, messaging, video conferencing, and social media platforms (Yunis et al., 2018; Etim et al., 2021; Inyang et al., 2022). The usage of ICTs enables firms to automate operations, decrease redundancy, and reduce errors. This makes it simpler for firms to manage their resources, cut waste, and optimize their operations. Also, Hameed et al. (2018) stated that ICTs increase productivity in commercial enterprises. With the usage of ICTs, employees can function from anywhere and at any time. This offers for flexibility and enables individuals to balance their professional and personal lives. Moreover, ICTs provide organizations with access to real-time data that can be used to make informed decisions. This enhances productivity as judgments are based on data rather than intuition.

Performance of MSMEs in Nigeria

Business performance is the degree to which commercial organizations are able to fulfill their stated business targets within the available resources at their disposal in the face of competitive forces (Veliu & Manxhari, 2017). For MSMEs, performance comprises the efficacy and efficiency of the activities and operations of MSMEs in fulfilling their organizational goals and objectives (James et al., 2022). In the context of this study, the performance of MSMEs is examined from three aspects, namely market visibility, marketing effectiveness and business survivability. Market visibility is the ability of MSMEs to access the market with their offerings, reach more customers, and dominate the market with their marketing content and programmes (Subagyo & Ernestivita, 2020; Etuk et al., 2022). Marketing effectiveness is the ability of the marketing efforts of MSMEs to effectively achieve established marketing objectives such as customer patronage, sales volume, customer retention and market share (Syaifullah et al., 2021), whereas business survivability is the ability of MSMEs to be resilient and sustain their operations successfully in the face of dynamic environmental changes (Subagyo & Ernestivita, 2020). The performance of MSMEs in Nigeria is a matter of substantial concern regarding the country's economic growth, given that these firms are vital to the country's GDP. However, MSMEs in Nigeria have not been functioning so well due to a flood of environmental difficulties that have inhibited their expansion. One important difficulty affecting the success of MSMEs in Nigeria is inadequate funding (Ebitu et al., 2016). Funding has long been a hard issue for small enterprises in the country. Most entrepreneurs in the sector do not have access to cash or sufficient resources to build their enterprises. Another powerful obstacle is weak infrastructure (Awoyemi & Makanju, 2020). Infrastructure such as power supply, internet connectivity, transportation, and water supply are inadequate in most sections of the country. Most of the MSMEs rely on generators for power supply, and this generates additional expenditures for them, and adds to the already high cost of production. Other problems such as corruption, lack of mentorship and business education also serve to impair the performance of Nigerian MSMEs (Taiwo et al., 2022).

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ICT and Market Visibility of MSMEs

In the modern world, the adoption of information and communication technologies (ICTs) has been rapidly expanding (Yorkulov et al., 2022). This has made it easier for micro, small and medium enterprises (MSMEs) to engage in numerous marketing practices. By employing these technologies, MSMEs can now connect with more customers and perhaps develop their market penetration and brand awareness. In Nigeria, where MSMEs play a vital role in the economy, the usage of ICTs has been crucial in increasing market visibility for small enterprises (Seyi, 2022). With the use of the internet and social media, MSMEs can now reach out to customers from various areas of the country and even beyond. In fact, many firms have been able to flourish by establishing a strong online presence, which has facilitated client engagement and brand promotion. Moreover, the usage of e-commerce platforms has made it easier for MSMEs to sell their products to customers who are not inside their geographical region. This has led to enhanced market coverage, as these enterprises can now reach clients who were previously out of their reach (Lukonga, 2020).

Another way in which ICTs improve market visibility is through the usage of mobile marketing (Seyi, 2022). A considerable percentage of Nigerians now own a smartphone, and MSMEs may take advantage of this by employing mobile advertising to market their brand. Similarly, technological developments have also made it possible for MSMEs to access potential customers through digital advertising. With the use of search engine optimization (SEO) and pay-per-click (PPC) advertising, MSMEs may now rank higher on search engine result pages (SERPs) and obtain maximal visibility. By offering access to new technology and business tools, these enterprises can now advertise their brand, increase their market coverage, and reach new customers. The foregoing viewpoints closely infer that the adoption of ICT may enhance the market visibility of MSMEs in Nigeria. Although research has shown that ICT tools have a significant effect on performance of SMEs in Nigeria (Igwe et al., 2020; Okundaye et al., 2019; Olatunji, 2015; Shettima & Sharma, 2020), there is no empirical evidence to demonstrate the influence of ICT on the market visibility of Nigerian MSMEs due to the scarcity of relevant research. This is why this study was carried out to cover this gap through a survey of selected MSMEs in Nigeria. Therefore, we present the following hypothesis to guide the investigation:

H_1: *ICT utilization has a significant effect on the market visibility of MSMEs in Nigeria.*

ICT and Marketing Effectiveness of MSMEs

Information and communication technologies (ICTs) have become increasingly vital tools in the promotion of businesses, particularly micro, small, and medium enterprises (MSMEs) (Karim et al., 2022). The use of ICT has revolutionized the way that business organizations operate, with extensive access to the internet and social media platforms making it simpler for firms to contact new clients and engage with existing ones. In Nigeria, ICT has presented MSMEs with new and inventive techniques of promoting their products and services (Irefin et al., 2012). Traditionally, MSMEs would rely on print or broadcast media advertising, which was often expensive, and their reach was limited. However, with the rise of a variety of social media sites such as WhatsApp, Instagram and Facebook, MSMEs may now reach a larger target audience with little or no cost. Social media marketing is presently a crucial approach for many MSMEs in Nigeria (Ladokun, 2019). Similarly, ICT has enhanced the link between businesses and customers in Nigeria (Seyi, 2022). With technology like emails, instant messaging, and chatbots, MSMEs in Nigeria can now engage with their consumers in real-time and provide rapid solutions to their concerns. E-commerce platforms have also essentially impacted the way MSMEs in Nigeria function (Idris, 2015).

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Online marketplaces like Jumia, Konga, and Jiji.ng have made it simpler for MSMEs to sell their things online and reach a broader audience. Moreover, ICT has enabled these online markets to offer several payment possibilities, including debit/credit card payments, and cash on delivery. This has resulted in a significant spike in the sales of MSMEs in Nigeria, particularly during the COVID-19 pandemic, with many Nigerians shopping online due to movement limits. The preceding perspectives closely infer that the implementation of ICT may enhance the marketing performance of MSMEs in Nigeria. Although research has shown that ICT tools have a significant effect on the performance of SMEs in Nigeria (Igwe et al., 2020; Okundaye et al., 2019; Olatunji, 2015; Shettima & Sharma, 2020), there is no empirical evidence to demonstrate the influence of ICT on the marketing effectiveness of Nigerian MSMEs due to the scarcity of relevant research. This is why this study was carried out to cover this gap through a survey of selected MSMEs in Nigeria. Therefore, we present the following hypothesis to guide the investigation:

H_2: *ICT utilization has a significant effect on the marketing effectiveness of MSMEs in Nigeria.*

ICT and Business Survivability of MSMEs

Micro, small, and medium-sized enterprises (MSMEs) make up a major percentage of the Nigerian economy. However, these enterprises have several problems that may risk their existence (Ebitu et al., 2016). Information and communication technologies (ICTs) can play a key role in boosting the survival of MSMEs in Nigeria. According to Asunka (2016), ICTs can aid MSMEs to grow their consumer base. The internet and social media enable MSMEs to access a bigger audience than would be possible through traditional marketing strategies. Also, Olatunji (2015) underlined that ICTs can boost the efficiency and production of MSMEs. Many small firms in Nigeria experience issues such as lack of resources and employees. However, with adequate ICT tools, MSMEs may automate operations, cut expenses, and enhance production. Furthermore, Khalil et al. (2022) asserted that ICTs can enable MSMEs to acquire financing and manage their finances better. Accessing financing is a key challenge for MSMEs in Nigeria. However, emergent finance methods, such as crowdsourcing platforms, allow enterprises to raise capital from a wide spectrum of sources. Additionally, ICTs can also assist MSMEs to regulate their money better. By allowing businesses to grow their consumer base, enhance efficiency and get finance more readily, ICTs can help enterprises to tackle many of the challenges they are confronted with. The previous perspectives closely infer that the application of ICT may boost business sustainability of MSMEs in Nigeria. Although research has shown that ICT tools have a significant effect on performance of SMEs in Nigeria (Igwe et al., 2020; Okundaye et al., 2019; Olatunji, 2015; Shettima & Sharma, 2020), there is no empirical evidence to demonstrate the influence of ICT on business survivability of Nigerian MSMEs due to the scarcity of relevant research. This is why this study was carried out to cover this hole through a survey of chosen MSMEs in Nigeria. Therefore, we present the following hypothesis to guide the investigation:

H_3: *ICT utilization has a significant effect on the business survivability of MSMEs in Nigeria*

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Empirical Review of Extant Studies and Research Gaps

Here, we have reviewed a range of studies from several scholars to understand the position of extant authors on the relationship between ICT utilization and the performance of MSMEs. From a preliminary scoping review of extant studies, we observed that relevant research articles on ICT and the performance of MSMEs in the Nigerian context is scarce and limited to a few studies. This review therefore centered on eight (8) empirical studies deemed closely relevant to the scope of the present study. The first is the study by Okundaye et al. (2019), which explored "The Impact of Information and Communication Technology on Nigerian Small-to-Medium-Sized Enterprises." The study used key informant interviews to obtain primary data from managers and executive personnel of SMEs in Nigeria. The data obtained were thematically analyzed. The findings of the study revealed that ICT adoption has a significant positive effect on the performance (profitability and global competitiveness) of SMEs in Nigeria. The study also revealed that perceived ease of use, perceived usefulness, attitude toward technology and intention to use technology were key factors influencing the adoption of ICT tools by Nigerian SMEs. However, the limitation of this study is that it was overly centered on SMEs, with no particular emphasis on the performance of micro-sized enterprises in Nigeria.

Another study by Igwe et al. (2020) explored "The Influence of Technology Adoption and Sales Performance of Manufacturing Small and Medium Enterprises in Port Harcourt." The study used a structured questionnaire to obtain primary data from marketing managers, sales and top managers of 34 manufacturing SMEs in Port Harcourt. The data obtained were descriptively analyzed while the hypotheses of the study were tested using simple regression. Consequently, the findings revealed that ICT adoption had a significant positive effect on the sales performance of manufacturing SMEs in Port Harcourt, Nigeria. However, the limitation of this study is that it was overly centered on manufacturing SMEs, with no particular emphasis on the performance of micro-sized enterprises in Nigeria. Shettima and Sharma (2020) conducted a study to determine "The Impact of Digitalization on Small and Medium Enterprises in Nigeria". The study used a structured questionnaire to collect primary data from 366 employees and managers of SMEs in Nigeria. Descriptive statistics were applied for data analysis while hypotheses testing was done using Chi-square test. The findings of the study revealed that digitalization (including ICT) has a great impact on the performance of SMEs in Nigeria as it automates the product and process as a result of which both quality and production increases. However, the limitation of this study is that it was overly centered on SMEs, with no particular emphasis on the performance of micro-sized enterprises in Nigeria.

Also, Olatunji (2015) explored "The Impact of Information and Communication Technology on Small and Medium Scale Enterprises Productivity in Nigeria." The study used a structured questionnaire to obtain primary data from 80 operators of SMEs in Nigeria. Data analysis and interpretation were subsequently done using descriptive statistics. Consequently, the study found that ICT adoption improves the productivity of SMEs by enhancing their processes and products marketing performance. It was also revealed that ICT adoption leads to cost minimization, and improved organizational capabilities of Nigerian SMEs. However, the limitation of this study is that it was overly centered on SMEs, with no particular emphasis on the performance of micro-sized enterprises in Nigeria. In another study, Asunka (2016) examined "The Significance of Information and Communication Technology for SMEs in Rural Communities" in Ghana. The study used a structured questionnaire to obtain primary data from 100 managers of SMEs in selected rural communities in Ghana. The data obtained were analyzed using descriptive statistics. Consequently, the findings of the study revealed that ICT adoption has greatly improved the growth of Ghanaian SMEs by minimizing transaction and communication expenditure and improving beneficial

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relationships with suppliers and customers. However, the limitation of this study is that it was restricted to SMEs in Ghana, with no particular emphasis on the performance of MSMEs in Nigeria.

Similarly, Cuevas-Vargas et al. (2016) examined "The Effects of ICTs as Innovation Facilitators for a Greater Business Performance in Mexico." The study used a structured questionnaire to obtain primary data from 288 operators of micro, small and medium enterprises in Guanajuato, Mexico. The data were analyzed and hypotheses tested using Structural Equation Modeling (SEM). The findings of the study therefore revealed that ICT acts as an innovation facilitator to significantly improve the business performance of MSMEs in Mexico. However, the limitation of this study is that it was restricted to MSMEs in Mexico, with no particular emphasis on the performance of MSMEs in Nigeria. Also, Khalil et al. (2022) examined "The Impact of Digital Technologies on SMEs' Resilience during the COVID-19 Pandemic." The study used a questionnaire survey to obtain primary data from 96 operators of SMEs in Saudi Arabia. The study used regression analysis subsequently to analyze the data obtained from respondents. The findings revealed that the influence of digital technologies on the resilience of SMEs during COVID-19 was significantly positive. However, the limitation of this study is that it was restricted to SMEs in Saudi Arabia, with no particular emphasis on the performance of MSMEs in Nigeria.

Furthermore, another study by Kawira et al. (2019) examined the effect of digital marketing on the performance of MSMEs in Kenya. With the aid of a structured questionnaire survey, the study obtained primary data from 302 operators of MSMEs in Kenya. Using descriptive and inferential statistics (multiple regression and correlation analysis), the data obtained were analyzed and interpreted. The findings thereof revealed that digital marketing (mobile phone marketing, social media marketing and internet marketing) had a significant positive effect on the performance of MSMEs in Kenya. However, the limitation of this study is that it was restricted to MSMEs in Kenya, with no particular emphasis on the performance of MSMEs in Nigeria.

Literature Gaps in Extant Studies

In the previous unit, an in-depth review of relevant studies by previous researchers on ICT and performance of MSMEs is presented, leading to the identification of literature gaps. During the review, a major literature gap was observed. The review revealed that there has been some research effort among Nigerian scholars on ICT application by business organizations. However, it was observed that the majority of existing studies were limited to the factors driving the adoption of ICT tools by SMEs in Nigeria (Apulu & Latham, 2011; Nyakuma et al., 2016; Irefin et al., 2012; Ladokun et al., 2013). Other available studies were restricted to how ICT adoption has affected the performance of SMEs in Nigeria (Igwe et al., 2020; Okundaye et al., 2019; Shettima & Sharma, 2020). The major gap observed is that existing scholars are yet to rigorously explore the causality between ICT application and performance (in terms of market visibility, marketing effectiveness and business survivability) of micro enterprises in the Nigerian context. In light of the foregoing, we carried out this study to provide comprehensive empirical evidence demonstrating the influence of ICT on the performance of MSMEs in Nigeria, with special emphasis on the following performance parameters: market visibility, marketing effectiveness and business survivability.

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Theoretical Framework

This study was based on the dynamic theory of innovation as propounded by Taylor et al. (2002). This theoretical framework was considered appropriate for the study because it illustrates how innovative technology (such as ICT tools) could be employed by business organizations, particularly MSMEs, to create sustained competitive advantages in a competitive business environment. The theory is an efficiency-driven framework meant to assist firms improve their overall productivity and achieve enduring competitive advantage by means of continual adaptation and innovation. It essentially originated to offer some insight as to why conservative business enterprises were left behind as the environment evolved with time. The core notion of the theory, according to Taylor et al. (2002), is that "organizations exist in a dynamic environment, one that is fast moving, fast changing and fast evolving; therefore, achieving sustainable competitive advantage in such a dynamic environment requires organizations to adapt, adjust and innovate in order to keep abreast of latest trends in the industry." Consequently, the theory views successful organizations as those that are consistently in the process of adapting, changing and innovating in order to acquire durable competitive advantages. Furthermore, the theory suggests that firms can adapt and innovate in four (4) areas, namely: technology, processes and procedures, corporate orientation, and personnel (Taylor et al., 2002). Since the study focused on ICT, which is technology-related, we only focused on the technological aspect of the theory.

The dynamic theory of innovation holds significant relevance to this study due to its fundamental premise, which asserts that micro, small, and medium enterprises (MSMEs) exist within a dynamic environment characterized by rapid movement, frequent changes, and constant evolution. Consequently, the theory suggests that in order to attain sustainable competitive advantage and improve business performance in such a dynamic setting, MSMEs must engage in adaptation, adjustment, and innovation to stay updated with the latest environmental trends. According to the theory, successful MSMEs are those that consistently undergo the process of adapting, adjusting, and innovating to achieve sustainable competitive advantage. Specifically, the theory identifies four avenues through which MSMEs can adapt and innovate, namely: technology, methods and processes, corporate orientation, and personnel. Therefore, this study primarily focuses on the aspect of technological innovation within the dynamic theory of innovation, particularly in relation to information and communication technologies (ICTs). The underlying premise of the dynamic theory of innovation suggests that if MSMEs embrace and adapt ICT tools in their operations, they will be strategically positioned to enhance their overall performance within the ever-changing business environment.

Conceptual Framework of the Study

This study examined ICT and performance of MSMEs in Nigeria. Its aim was specifically to establish the causality between the independent variable (ICT) and the dependent variable (business performance) in the context of MSMEs. To that end, the independent variable (ICT) was decomposed into the following parameters as informed by Okundaye et al. (2019) and Karim et al. (2022): computer systems, mobile application software, social media resources, inventory management systems, business productivity tools and electronic accounting systems. Similarly, the dependent variable (MSMEs performance) was decomposed into the following parameters as informed by Subagyo and Ernestivita (2020) and Syaifullah et al. (2021): market visibility, marketing effectiveness and business survivability. Within the context of this study, market visibility is the ability of MSMEs to penetrate the market with their offerings, reach more customers, and dominate the market with their marketing content and programmes. Marketing effectiveness is the ability of

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the marketing activities of MSMEs to effectively achieve set marketing objectives such as customer patronage, sales volume, customer retention and market share, while business survivability is operationalized as the ability of MSMEs to remain resilient and sustain their operations profitably in the face of dynamic environmental changes. In the context of the study, it was proposed that there is some sort of association between ICT and these parameters of business performance of MSMEs. This hypothesized relationship is integrated into a conceptual model (see FIG. 1) that visually demonstrates how the variables of the study are tentatively related.

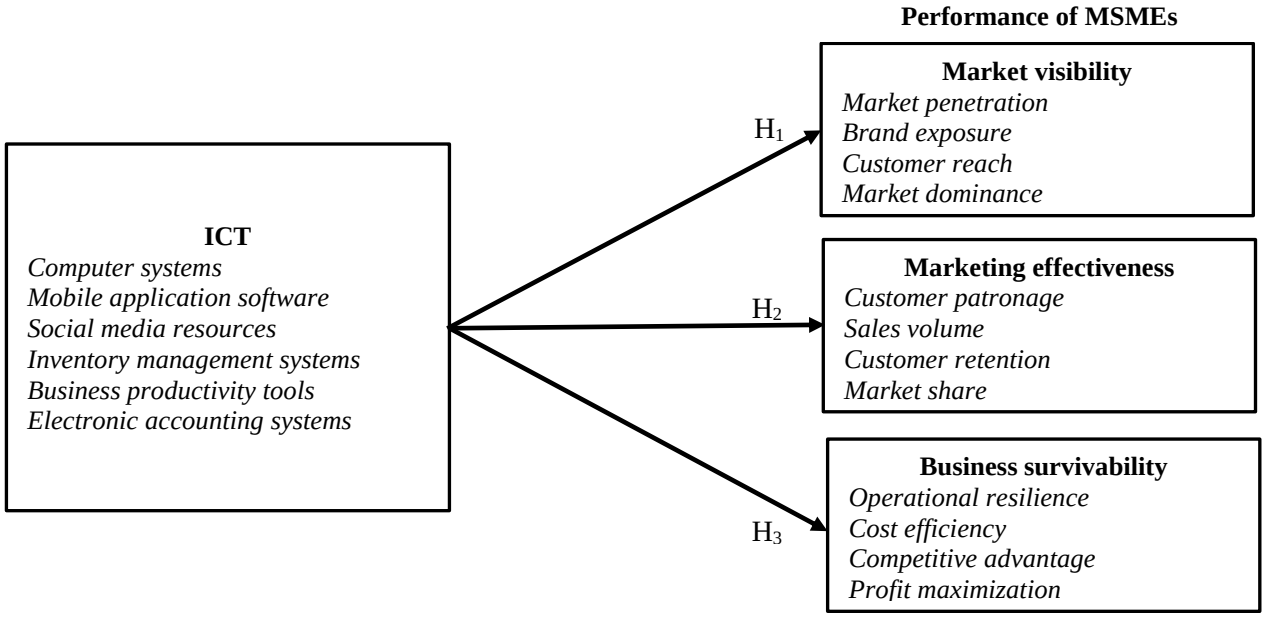

FIG. 1: Conceptual model of the study

Source: *Parameters of independent variable adapted from Okundaye et al. (2019) and Karim et al. (2022). Parameters of dependent variable adapted from Subagyo and Ernestivita (2020) and Syaifullah et al. (2021).*

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METHODOLOGY

Research Design

This study employed cross-sectional survey design by using a structured questionnaire to collect data from operators of MSMEs in Nigeria. In implementing cross-sectional survey design, the data-gathering process was not repeated over an extended period of time. Instead, data was collected from respondents on a one-time basis during a brief period of time, hence reducing time and effort associated in gathering data. Rather than commit to a longitudinal time horizon, which would have wasted more time and research resources in the survey (Caruana et al., 2015), we adopted cross-sectional survey because it enabled the collection of data from a large sample on a one-time basis to make inferences about the entire population with a relatively high degree of accuracy (Sileyew, 2019).

The Study Population

Given that this study bordered around the performance of MSMEs, the target population comprised operators of MSMEs in Nigeria. Considering that majority of MSMEs in Nigeria are unofficial and unregistered, there is no up-to-date record of all MSMEs operating in the country at the time of the study. This indicated that the population of this study was numerically unknown (infinite). A statistical estimation method was therefore necessary to determine the sample size from the unknown population (as suggested by Louangrath, 2014; Odigbo, 2018).

Sample and Sampling Method

Since the population of the study was numerically unknown or infinite, the researcher relied on the Topman sample size determination procedure to statistically determine the sample size of the study (Okoye-Chine, 2021; Attah, 2023). This procedure was based on the Topman formula which states thus:

$$n = \frac{Z^2Pq}{e^2}$$

where
- n: Sample size required
- Z: Tabular statistical unit (1.96)
- P: Probability of positive response (0.44)
- q: Probability of negative response (0.56)
- e: Margin of error (5 percent)

This statistical estimation procedure resulted in a sample size of 379 MSMEs operators approximately. After arriving at the sample, we adopted cluster random sampling to locate operators of MSMEs to participate in the questionnaire survey. Given that MSMEs were not all operating in a single location within Nigeria but were scattered across the country, the study area was broken into three geo-political zones: South South, South West, and South East. These clusters were further divided into three major states (namely, Cross River State, Abia State and Lagos State) for accurate targeting. We then recruited a 3-member team of enumerators to coordinate the survey in the three states via an online structured questionnaire. Consequently, online copies of the questionnaire were

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delivered via social media links and electronic mail to business enterprises identified as micro, small and medium in terms of capital (< N500 million) and employee population (< 300). Accordingly, any business enterprise that did not conform to the established criteria were deliberately excluded from the study. Following this procedure, a total of 379 MSMEs operators were selected to participate in the questionnaire survey for the study.

Data Collection Method

This study was based on primary data obtained from operators of MSMEs in Nigeria using an online structured questionnaire. The data were obtained from respondents by a 3-member team of enumerators in order to ensure safe administration and retrieval of the questionnaire. This team utilized Google Forms to transform the questionnaire into an electronic copy that could be easily sent via mail or social media to respondents for response. By relying on personal and professional networks, we used the research assistants to locate and share the survey links to MSMEs in Cross River, Lagos and Abia States. All potential respondents were briefed on the subject and aims of the study and asked to consent to the survey before being given the survey link. We resorted to an online questionnaire rather than print copies due to the diverse nature of the study area; the survey occured in three states, which were logistically difficult to visit during the survey.

Instrument Reliability and Data Analysis Technique

The instrument of the study was confirmed for reliability through the Cronbach alpha reliability procedure. A pilot survey was conducted by administering print copies of the questionnaire to a random selection of 50 small-scale enterprises, who were ultimately excluded from the actual study. The selected respondents were debriefed and guided on how to accurately respond to the questionnaire statements to minimize erroneous responses. Following that, the collected data were assigned codes and loaded into the Statistical Package for the Social Sciences (SPSS 23) for reliability analysis. The questionnaire was hence deemed reliable and adopted for the study, because all its measurement scales generated Cronbach's alpha coefficients not less than the benchmark of 0.7 as displayed in Table 1.

Table 1: Summary of Reliability Results

SN	Variables	No. of items	Alpha coefficients
1	ICT	6	.822
2	Market visibility	4	.721
3	Marketing effectiveness	4	.759
4	Business survivability	4	.891
		18	

Source: *Authors' Analysis Via SPSS 2023*

Going further, we used descriptive statistics (frequencies and percentages) for analyzing and interpreting the data gathered during the survey. The study's null hypotheses were tested using simple linear regression in the Statistical Package for the Social Sciences (SPSS 23). The regression model states thus:

$$Y = a + \beta X + e$$

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where:

Y = Dependent variable (performance of MSMEs)

a = The intercept

β = Coefficient of the independent variable

X = Independent variable (ICT)

e = Margin of error

Therefore,

Y_1 = Market visibility

Y_2 = Marketing effectiveness

Y_3 = Business survivability

ANALYSIS AND DISCUSSION

Data Analysis and Interpretation

We distributed 379 questionnaire copies to MSMEs operators during the questionnaire study. Out of the 379 questionnaire copies distributed, 337 copies (or 88.9 percent) were effectively recovered, while 42 copies (or 11.1 percent) could not be recovered, hence generating an overall response rate of 88.9 percent.

Table 2: Descriptive Statistics of Research Variables

	n	Minimum	Maximum	Mean	Std. Deviation
ICT	337	1.17	4.00	2.351	1.719
Market visibility	337	1.25	4.25	2.347	1.911
Marketing effectiveness	337	1.25	4.50	2.589	1.929
Business survivability	337	1.00	4.75	2.485	1.004
Valid N (listwise)	337				

Source: *Authors' Analysis Via SPSS, 2023*

The results in Table 2 explain the descriptive statistics of the variables of the study using mean, standard deviation, minimum and maximum. This result is based on a 5-Point Likert scale ratio, with 5 being strongly agree and 1 strongly disagree, while 3, 2 and 4 are undecided, disagree and agree respectively. With respect to ICT, the results show that the minimum response from respondents was 1.17 (strongly disagree), while the maximum response was 4.00 (agree). The mean value was 2.351 while the standard deviation was 1.719. This implies that majority of the respondents agreed to the statements measuring ICT as a variable. The results in the same table show that with respect to market visibility, the minimum response from respondents was 1.25 (strongly disagree), while the maximum response was 4.25 (agree). The mean value was 2.347, while the standard deviation was 1.911. This implies that majority of the respondents agreed to the statements measuring market visibility as a variable. Similarly, with respect to marketing effectiveness, the results in Table 2 show

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that the minimum response from respondents was 1.25 (strongly disagree), while the maximum response was 4.50 (strongly agree). The mean value was 2.589, while the standard deviation was 1.929. This implies that majority of the respondents strongly agreed to the statements measuring marketing effectiveness as a variable. Furthermore, with respect to business survivability, the results in Table 2 show that the minimum response from respondents was 1.00 (strongly disagree), while the maximum response was 4.75 (strongly agree). The mean value was 2.485, while the standard deviation was 1.004. This implies that majority of the respondents strongly agreed to the statements measuring business survivability as a variable.

Test of Hypotheses

Hypothesis One:

Ho: ICT utilization has no significant effect on market visibility of MSMEs in Nigeria.

Decision Criteria: Accept the alternative hypothesis if (P < .05) and reject the null hypothesis, if otherwise.

Table 3: Model Summary of the Effect of ICT Utilization on the Market Visibility of MSMEs in Nigeria

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.534[a]	.286	.284	.77115

a. Predictors: (Constant), ICT utilization

Source: *Authors' Analysis Via SPSS, 2023*

Table 4: ANOVA[a] of the Effect of ICT Utilization on the Market Visibility of MSMEs in Nigeria

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	79.663	1	79.663	133.959	.000[b]
	Residual	199.217	335	.595		
	Total	278.880	336			

a. Dependent Variable: Market visibility

b. Predictors: (Constant), ICT utilization

Source: *Author's Analysis Via SPSS, 2023*

Table 5: Coefficients[a] of the Effect of ICT Utilization on the Market Visibility of MSMEs in Nigeria

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	.757	.144		5.270	.000
	ICT	.676	.058	.534	11.574	.000

a. Dependent Variable: Market visibility

Source: *Author's Analysis Via SPSS, 2023*

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Tables 3–5 convey the regression results of the effect of ICT utilization on MSMEs' market visibility. Table 3 reveals that the association between ICT and MSMEs' market visibility is 53.4 percent (as seen in the R column), indicating a substantial degree of relationship. The coefficient of determination (R^2) of 0.286 (in Table 3) implies that the independent variable (ICT) accounts for up to 28.6 percent of the variance in the dependent variable (market visibility). This means that a unit change in the use of ICT by MSMEs operators can increase their market visibility by up to 28.6 percent when all other parameters remain constant. Furthermore, based on the findings of the F-test (133.959, $P < 0.05$, t= 11.574), ICT utilization has a significant positive effect on the market visibility of MSMEs in Nigeria. As a result, we reject null hypothesis one, accept alternative hypothesis one, and conclude that ICT utilization has a significant positive influence on MSMEs' market visibility in Nigeria.

Hypothesis Two:

Ho: ICT utilization has no significant effect on the marketing effectiveness of MSMEs in Nigeria.

Decision Criteria: Accept the alternative hypothesis if ($P < .05$) and reject the null hypothesis if otherwise.

Table 6: Model Summary of the Effect of ICT Utilization on the Marketing Effectiveness of MSMEs in Nigeria

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.507[a]	.395	.392	.88586

a. Predictors: (Constant), ICT utilization

Source: *Authors' Analysis Via SPSS, 2023*

Table 7: ANOVA[a] of the Effect of ICT Utilization on the Marketing Effectiveness of MSMEs in Nigeria

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	27.440	1	27.440	34.967	.000[b]
	Residual	262.889	335	.785		
	Total	290.329	336			

a. Dependent Variable: Marketing effectiveness

b. Predictors: (Constant), ICT utilization

Source: *Authors' Analysis via SPSS, 2023*

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Table 8: Coefficients[a] of the Effect of ICT Utilization on the Marketing Effectiveness of MSMEs in Nigeria

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	1.656	.165		10.033	.000
	ICT	.397	.067	.507	5.913	.000

a. Dependent Variable: Marketing effectiveness

Source: *Authors' Analysis Via SPSS, 2023*

Tables 6–8 provide the regression results of the effect of ICT utilization on MSMEs' marketing effectiveness. According to the findings in Table 6, the association between ICT utilization and marketing effectiveness of MSMEs is 50.7 percent (as indicated by the R column), indicating a substantial degree of relationship. The coefficient of determination (R^2) of 0.395 (in Table 6) implies that the independent variable (ICT) accounts for up to 39.5 percent of the variance in the dependent variable (marketing effectiveness). This means that a unit change in the use of ICT by MSMEs operators can boost their marketing effectiveness by up to 39.5 percent when other variables remain constant. Furthermore, according to the F-test (34.967, $P < 0.05$, $t = 5.913$), ICT utilization has a significant positive effect on the marketing effectiveness of MSMEs. As a result, we reject null hypothesis two, accept alternative hypothesis two, and conclude that ICT utilization has a significant positive effect on the marketing effectiveness of MSMEs in Nigeria.

Hypothesis Three:

Ho: ICT utilization has no significant effect on the business survivability of MSMEs in Nigeria.

Decision Criteria: Accept the alternative hypothesis if ($P < .05$) and reject the null hypothesis, if otherwise.

Table 9: Model Summary of the Effect of ICT Utilization on the Business Survivability of MSMEs in Nigeria

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.675[a]	.316	.313	1.00353

a. Predictors: (Constant), ICT utilization

Source: *Authors' Analysis Via SPSS, 2023*

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Table 10: ANOVA[a] of the Effect of ICT on the Business Survivability of MSMEs in Nigeria

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	11.931	1	11.931	12.212	.000[b]
	Residual	327.370	335	.977		
	Total	339.301	336			

a. Dependent Variable: Business survivability

b. Predictors: (Constant), ICT utilization

Source: *Authors' Analysis Via SPSS, 2023*

Table 11: Coefficients[a] of the Effect of ICT Utilization on the Business Survivability of MSMEs in Nigeria

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.238	.187		11.969	.000
	ICT	.105	.076	.675	1.385	.010

a. Dependent Variable: Business survivability

Source: *Authors' Analysis Via SPSS, 2023*

Tables 9–11 present the regression results of the effect of ICT utilization on the business survivability of MSMEs. The results in Table 9 show that the relationship between ICT utilization and business survivability of MSMEs is 67.5 percent (as seen in the R column), which indicates a very strong degree of relationship. The coefficient of determination (R^2) of 0.316 (in Table 9) indicates that up to 31.6 percent of the variability in the dependent variable (business survivability) is accounted for by the independent variable (ICT). This implies that a unit change in the utilization of ICT by operators of MSMEs will result in the improvement of their business survivability by up to 31.6 percent when other factors are held constant. Also, given F-test (12.212, $P < 0.05$, $t = 1.385$), the findings revealed that ICT utilization has a significant positive effect on the business survivability of MSMEs. Therefore, we reject null hypothesis three, accept alternative hypothesis three, and conclude that there is a significant positive effect of ICT utilization on the business survivability of MSMEs in Nigeria.

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DISCUSSION OF FINDINGS

From the test of hypothesis one, it was revealed that ICT utilization has a significant positive effect on the market visibility of MSMEs in Nigeria. Although extant studies have shown that ICT tools have a significant effect on performance of SMEs in Nigeria (Igwe et al., 2020; Okundaye et al., 2019; Olatunji, 2015; Shettima & Sharma, 2020), there is no established empirical link between ICT and market visibility of MSMEs in the Nigerian context. This finding therefore generates novel empirical evidence that definitively confirms the causality between ICT utilization and market visibility of MSMEs in Nigeria. The implication of this finding is that the utilization of ICT tools by operators of MSMEs in Nigeria has the capacity to improve their market visibility in terms of market penetration, brand exposure, customer reach and market dominance. In other words, this finding has been able to prove that ICT enhances the ability of MSMEs to gain the visibility of actual and potential customers in their chosen target markets.

From the test of hypothesis two, it was revealed that ICT utilization has a significant positive effect on the marketing effectiveness of MSMEs in Nigeria. Although extant studies have shown that ICT tools have a significant effect on performance of SMEs in Nigeria (Igwe et al., 2020; Okundaye et al., 2019; Olatunji, 2015; Shettima & Sharma, 2020), there is no established empirical link between ICT utilization and marketing effectiveness of MSMEs in the Nigerian context. This finding therefore generates novel empirical evidence that definitively confirms the causality between ICT and marketing effectiveness of MSMEs in Nigeria. The implication of this finding is that the utilization of ICT tools by operators of MSMEs in Nigeria has the capacity to improve their marketing effectiveness by enhancing customer patronage, sales volume, customer retention and market share. This means that the effectiveness of the marketing efforts of MSMEs in Nigeria could be substantially and sustainably improved through the utilization of several ICT tools.

Finally, the test of hypothesis three revealed that ICT utilization has a significant positive effect on business survivability of MSMEs in Nigeria. Currently, extant studies do not yet support the link between ICT utilization and business survivability of MSMEs in the Nigerian context. Most existing studies domiciled in Nigeria are limited to ICT and performance of SMEs (Igwe et al., 2020; Okundaye et al., 2019; Olatunji, 2015; Shettima & Sharma, 2020). This indicates that with respect to ICT and business survivability of MSMEs in Nigeria, much is yet to be known about the potential causality between the variables. This study therefore provides novel empirical evidence that definitively confirms that the utilization of ICT tools by operators of MSMEs in Nigeria has the capacity to substantially enhance the ability of MSMEs to profitably sustain their survival in the face of uncertain environmental changes. This entails that one potent way of reinforcing the capacity of Nigerian MSMEs to survive harsh environmental changes is the integration of ICT into their marketing operations.

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CONCLUSION AND PRACTICAL IMPLICATIONS

As earlier observed, in the quest to achieve operational efficiency and organizational effectiveness, business organizations around the world are integrating and utilizing a plethora of ICT tools in their operations. Particularly because of the ongoing advances in modern communications and digital technologies, even more ICT tools are being introduced for use by business organizations. In Nigeria, this trend involves business organizations of all sizes, including MSMEs utilizing one ICT tool or another for marketing, promotions or recruitment. This had resulted in a slew of studies on ICT and business performance in Nigeria. However, the influence of ICT on the performance of MSMEs in Nigeria (in terms of market visibility, marketing effectiveness and business survivability) was acutely under-investigated. This study was therefore carried out to bridge this study gap by quantitatively exploring the influence of ICT on the performance of MSMEs. Specifically, the study sought to provide empirically-verifiable answers to the central research question: Has the utilization of ICT by MSMEs in Nigeria improved their market visibility, marketing effectiveness and business survivability? This investigation was carried out through a structured survey of operators of MSMEs to obtain primary data for the study. With the aid of descriptive and inferential statistics, the data obtained were analyzed and interpreted in line with the objectives of the study. The findings of the study therefore revealed that ICT utilization had a significant positive effect on the performance of MSMEs in Nigeria. Specifically, the findings showed that the utilization of ICT tools by operators of MSMEs in Nigeria had the capacity to substantially improve their performance by enhancing market visibility, marketing effectiveness and business survivability.

On the basis of this novel empirical evidence generated, the study concludes that in the Nigerian context, ICT adoption and utilization is significantly instrumental to the improvement of the marketing performance of MSMEs. Guided by the findings of the study, a number of recommendations are suggested for possible implementation. First, we recommend that operators of MSMEs in Nigeria should intensify their adoption of ICT tools and apply them in marketing operations in order to improve market visibility through market penetration, brand exposure, customer reach and market dominance. The adoption of ICT tools such as social media, online advertising and email marketing is a game-changer for MSMEs because it provides a variety of less expensive channels for them to target large market segments with their offerings. Second, we recommend that operators of MSMEs in Nigeria should seek practical training on how to utilize innovative ICT tools to improve the effectiveness of their marketing campaigns in such a way that they can effectively enhance customer patronage, sales volume, customer retention and market share in the face of competition. Both operators and employees of MSMEs should be trained and re-trained to acquire practical technical expertise and basic computer literacy in order to improve their ability to nimbly apply ICT tools to enhance the effectiveness of their marketing operations amidst uncertain environmental changes. Finally, we recommend that to reinforce business resilience and bolster their ability to survive harsh environmental disruptions, it is crucial for Nigerian MSMEs to integrate ICT into every key aspect of their operations (internal communications, customer service delivery, marketing, and financial management) to ensure they can continue to operate without interruptions. In an ever-dynamically changing business environment, the indispensability of ICT tools in guarding against business disruptions cannot be ignored. This is why it is essential for Nigerian MSMEs to incrementally integrate ICT into key aspects of their operations to make them more accessible, efficient and effective.

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LIMITATIONS AND FUTURE RESEARCH

The limitation of this study is that the performance of MSMEs was viewed from three dimensions: market visibility, marketing effectiveness and business survivability. The performance dimensions of business organizations, including MSMEs are however more than those used in this study. There is a need for further research to unravel the influence of ICT on several dimensions of MSMEs performance such as financial management, customer service, internal communications efficiency, inventory, logistics and supply chain management, and a host of others. The findings of such a study can provide holistic empirical evidence to demonstrate the causality between ICT and performance of MSMEs in a comprehensive context. Another limitation of this study is that it relied on a quantitative methodology which might have restricted the empirical insights generated and prevented deep insights into the phenomena from in-depth survey of the respondents. It is therefore recommended that further research should apply qualitative methodologies in order to unravel deep insights into how ICT actually impacts the performance of MSMEs in Nigeria.

REFERENCES

Anyadighibe, J. A., Awara, N. F., James, E. E., Ekarika, W. A. & Omemgbeoji, C. C. (2023). Quality management and customer satisfaction in the financial services sector. *UNIBEN Journal of Marketing, 2*(1), 90-113.

Anyadighibe, J. A., Ebitu, E. T., Ezekiel, M. S., James, E. E. & Asueze, C. E. (2023). Electronic banking and customer satisfaction in commercial banks. *UNIBEN Journal of Marketing, 2*(1), 129-151

Anyadighibe, J. A., Etuk, A., James, E. E., & Okpetim, B. E. (2022). Celebrity endorsement and consumer buying behaviour towards telecommunication services. *International Journal of Applied Research in Social Sciences, 4*(2), 9-20.

Anyadighibe, J. A., Etuk, A., James, E. E., & Stephen, R. (2021). Effect of promotional mix on the marketing of insurance services. *Journal of Business and Management Studies, 3*(2), 125-134.

Apulu, I., & Latham, A. (2011). Drivers for information and communication technology adoption: A case study of Nigerian small and medium sized enterprises. *International Journal of Business and Management*, *6*(5), 51-71. https://doi.org/10.5539/ijbm.v6n5p51

Asunka, B. A. (2016). The significance of information and communication technology for SMEs in rural communities. *Journal of Small Business and Entrepreneurship Development*, *4*(2), 29-38. https://doi.org/10.15640/jsbed.v4n2a4

Attah, P. A. (2023). Impact of the extended family system and access to health care services in Kogi State, Nigeria. *KIU Journal of Social Sciences*, *9*(1), 143-149.

Awara, N. F., Anyadighibe, J. A., Eneh, S. I., James, E. E., & Oladejo, M. (2021). Service quality delivery and students' satisfaction in the University of Calabar, Calabar, Nigeria. *AKSU Journal of Management Sciences, 6*(1&2), 158-179

Awoyemi, B. O., & Makanju, A. A. (2020). The growth prospect and challenges of financing micro, small and medium scale enterprises (MSMEs) in Nigeria. *European Journal of Business and Management Research, 5*(4), 67-81. https://doi.org/10.24018/ejbmr.2020.5.4.350

Caruana, E. J., Roman, M., Hernández-Sánchez, J., & Solli, P. (2015). Longitudinal studies. *Journal of Thoracic Disease*, *7*(11), E537.

Chitsimran, P. M., Kumar, K., Goyal, P., & Manish, N. H. (2020). MSME sector: A multifaceted

Article DOI: 10.52589/AJESD-WYE3IERI
DOI URL: https://doi.org/10.52589/AJESD-WYE3IERI

model to achieve prosperity. *Solid State Technology*, *63*(6), 18204-18221.

Cuevas-Vargas, H., Estrada, S., & Larios-Gómez, E. (2016). The effects of ICTs as innovation facilitators for a greater business performance: Evidence from Mexico. *Procedia Computer Science*, *91*, 47-56.

Ebitu, E. T., Glory, B., & Alfred, U. J. (2016). An appraisal of Nigeria's micro, small and medium enterprises (MSMEs): Growth, challenges and prospects. *British Journal of Marketing Studies, 4*(5), 21-36.

Etim, G. S., Ada, J. A., Eyo, I. E., Ndem, S. E., & James, E. E. (2023). Electronic banking and customers' access to banking services in rural settlements. *Resmilitaris*, *13*(3), 1161-1177.

Etim, G. S., Etuk, I. U., James, E. E., & Ekpe, S. (2020). Effect of relationship marketing on customer retention in the telecommunications industry. *British Journal of Management and Marketing Studies, 4*(4), 68-81.

Etim, G. S., Inyang, W. S., James, E. E. & Mbu-Ogar, G. B. (2023). Marketing information system (MKIS) and optimization of banking service delivery. *African Journal of Accounting and Financial Research, 6*(2), 112-125

Etim, G. S., James, E. E., Essien, E. E., & Okeowo, V. O. (2021). Integrated marketing strategies and performance of hospitality firms amidst the COVID-19 pandemic. *International Journal of Academic Research in Business & Social Sciences 11*(11), 2300-2317

Etim, G. S., James, E. E., Nnana, A. N., & Okeowo, V. O. (2021). E-marketing strategies and performance of small and medium-sized enterprises: A new-normal agenda. *Journal of Business and Management Studies, 3*(2), 162-172.

Etim, G. S., Ndem, S. E., Inyang, W. S., & Ada, J. A. (2023). Marketing factors and new vehicles sales: A correlative exposition. *Resmilitaris*, *13*(3), 756-768.

Etuk, A., Anyadighibe, J. A., Amadi, C., & James, E. E. (2022). Service quality delivery and consumers' choice of fast-food outlets. *International Research Journal of Management, IT and Social Sciences, 9*(2), 264-273.

Etuk, A., Anyadighibe, J. A., James, E. E., & Bassey, E. B. (2022). Corporate social responsibility and customer patronage in the telecommunications context. *Journal of Advanced Research and Multidisciplinary Studies, 2*(1), 42-57)

Etuk, A., Anyadighibe, J. A., James, E. E., & Egemba, P. M. (2022). Trade sales promotion and distributors' performance of fast-moving consumer goods (FMCGS). *International Research Journal of Management, IT & Social Sciences, 9*(2), 254-263

Etuk, A., Anyadighibe, J. A., James, E. E., & Mbaka, R. (2021). Service quality and passengers' loyalty of public transportation companies. *British Journal of Management and Marketing Studies, 4*(4), 82-98.

Etuk, A., Anyadighibe, J. A., James, E. E., & Ukpe, M. U. (2022). Sociological factors and consumer buying behaviour towards fashion clothing. *International Journal of Applied Research in Social Sciences, 4*(2), 21-34.

Etuk, A., Anyadighibe, J. A., James, E. E., & Ulo, A. I. (2022). Marketing mix and subscribers' satisfaction in the telecommunications industry. *Journal of Advanced Research and Multidisciplinary Studies, 2*(1), 29-41.

Etuk, S., James, E. E., & Joseph, U. E. (2022). Marketing strategies and passengers' adoption of ride-hailing services. *International Journal of Management & Entrepreneurship Research, 4*(1), 59-73.

Ezigbo, O. (December 10, 2022). 'MSMEs contribute 48% of Nigeria's GDP, Says ILO': This Day Newspaper. https://bit.ly/3MccP8R

Hameed, W. U., Nadeem, S., Azeem, M., Aljumah, A. I., & Adeyemi, R. A. (2018). Determinants of e-logistic customer satisfaction: A mediating role of information and communication

Article DOI: 10.52589/AJESD-WYE3IERI
DOI URL: https://doi.org/10.52589/AJESD-WYE3IERI

technology (ICT). *International Journal of Supply Chain Management*, *7*(1), 105-111.
Idris, A. O. (2015). Assessing a theoretically-derived e-readiness framework for e-commerce in a Nigerian SME. *Evidence Based Information Systems Journal*, *1*(1), 1-20.
Igwe, S. R., Ebenuwa, A., & Idenedo, O. W. (2020). Technology adoption and sales performance of manufacturing small and medium enterprises in Port Harcourt. *Journal of Marketing*, *5*(1), 44-59.
Inyang, B. I., Etim, G. S. & James E. E. (2022). Public relations strategies and the marketing performance of financial service providers. *Quantitative Economics and Management Studies*, *3*(2), 173-184
Inyang, I. B., & James, E. E. (2022). Appraisal of major factors inhibiting the internationalization of small and medium-sized agricultural exporters in Nigeria. *African Journal of Agriculture and Food Science, 6*(1), 35-52
Inyang, I. B., James, E. E., & Igbo, G. C. (2022). After-sale services and subscribers' satisfaction with terrestrial television service providers. *International Journal of Management & Entrepreneurship Research, 4*(3), 170-182.
Irefin, I. A., Abdul-Azeez, I. A., & Tijani, A. A. (2012). An investigative study of the factors affecting the adoption of information and communication technology in small and medium scale enterprises in Nigeria. *Australian Journal of Business and Management Research*, *2*(2), 1-18
James, E. E., & Inyang, I. B. (2022). E-servicescape and customer patronage of internet banking in deposit money banks. *Finance & Accounting Research Journal, 4*(2), 14-28.
James, E. E., & Inyang, I. B. (2022). Logistics management and marketing performance of small and medium-sized manufacturing firms. *International Journal of Entrepreneurship and Business Innovation, 5*(1), 1-15.
James, E. E., & Inyang, I. B. (2023). Hotel atmospherics and guests' experience in the Nigerian hospitality industry. *Research Journal of Hospitality and Tourism Management (RJHTM), 2*(1), 1-17.
James, E. E., Inyang, I. B., & Ochelebe, A. O. (2022). Enhancing public awareness of Lassa fever virus through publicity in Cross River State, Nigeria. *International Journal of Public Health and Pharmacology, 2*(1), 49-63)
Karim, M. S., Nahar, S., & Demirbag, M. (2022). Resource-based perspective on ICT use and firm performance: A meta-analysis investigating the moderating role of cross-country ICT development status. *Technological Forecasting and Social Change*, *179*, 121-136. https://doi.org/10.1016/j.techfore.2022.121626
Kawira, K. D., Mukulu, E., & Odhiambo, R. (2019). Effect of digital marketing on the performance of MSMES in Kenya. *Journal of Marketing and Communication*, *2*(1), 1-23.
Khalil, A., Woujoud, H., Abdelli, M. A., Baccouche, I., & Nasr, H. E. (2022). The impact of digital technologies on SMEs' resilience during the COVID-19 pandemic. In *Management and Information Technology in the Digital Era* (Vol. 29, pp. 111-126). Emerald Publishing Limited. https://doi.org/10.1108/S1877-636120220000029008
Ladokun, I. O. (2019). Exploring social media as a strategy for small and medium enterprises (SMEs) performance: evidence from Oyo state, Nigeria. *South Asian Journal of Social Studies and Economics*, *3*(4), 1-8. https://doi.org/10.9734/sajsse/2019/v3i430110
Ladokun, I. O., Osunwole, O. O., & Olaoye, B. O. (2013). Information and communication technology in small and medium enterprises: Factors affecting the adoption and use of ICT in Nigeria. *International Journal of Academic Research in Economics and Management Sciences*, *2*(6), 74-89. http://dx.doi.org/10.6007/IJAREMS/v2-i6/443
Louangrath, P. (2014). Sample size determination for non-finite population. *Southeast-Asian*

Article DOI: 10.52589/AJESD-WYE3IERI
DOI URL: https://doi.org/10.52589/AJESD-WYE3IERI

Journal of Sciences, *3*(2), 141-152.
Lukonga, I. (2020). Harnessing digital technologies to promote SMEs in the MENAP region. *International Monetary Fund*, *2020*(135), 1-46. https://ssrn.com/abstract=3721177
Mpuon, J. A., Etim, G. S., Offiong, A. I., & Enouh, R. O. (2021). The role of event marketing in entrepreneurship development of firms in hospitality industry. *International Journal of Hospitality and Tourism Systems*, *14*(2), 25-32.
Mpuon, J. A., Odigbo, B. E., Etim, G. S., Etuk, I. U., & Usoro, A. A. (2023). Impact of system integration of automation and autonomation supply chain strategies in operational performance of manufacturing firms. *International Journal of Value Chain Management*, *14*(2), 195-219.
Nyakuma, D. D., Jaleel, A., Shittu, K., Ojobo, H., & Ivase, T. J. (2016). Challenges of adopting information and communications technology by small and medium enterprises in Nigeria. *Journal of Multidisciplinary Engineering Science and Technology*, *3*(1), 3766-3776.
Odigbo, B. (2018). *Mastering research: Developing countries' challenges (1st Ed.)*. Rhyce Kerex Publishers
Okoye-Chine, M. (2021). The effect of sales promotion on marketing of Coca Cola drinks in Anambra State. *International Journal of Innovative Social Sciences & Humanities Research*, *9*(1), 117-129.
Okundaye, K., Fan, S. K., & Dwyer, R. J. (2019). Impact of information and communication technology in Nigerian small-to medium-sized enterprises. *Journal of Economics, Finance and Administrative Science*, *24*(47), 29-46. https://doi.org/10.1108/JEFAS-08-2018-0086
Olatunji, O. S. (2015). *The impact of information communication technology on small and medium scale enterprises productivity in Nigeria* [A Bachelor's Degree Thesis, Vaasa University of Applied Science, Finland]
Salau, S. (October 23, 2022). '600,000 MSMEs shutdown in one year, Says NASME': Guardian Nigeria. https://guardian.ng/business-services/600000-msmes-shutdown-in-one-year-says-nasme/
Seyi, J. S. (January 30, 2022). 'Eight ways e-commerce technology improves micro, small businesses in Nigeria': BusinessDay Nigeria. https://businessday.ng/news/article/eight-ways-e-commerce-technology-improves-micro-small-businesses-in-nigeria/
Shettima, M., & Sharma, N. (2020). Impact of digitalization on small and medium enterprises in Nigeria. *Adalya Journal*, *4*(2), 635-644.
Sileyew, K. J. (2019). *Research design and methodology* (pp. 1-12). IntechOpen.
Subagyo, K. & Ernestivita, G. (2020). Entrepreneurial parameters and performance of MSMEs in East Java province of Indonesia. *International Journal of Business Innovation and Research*, *23*(2), 267-282. https://doi.org/10.1504/IJBIR.2020.110102
Syaifullah, J., Syaifudin, M., Sukendar, M. U., & Junaedi, J. (2021). Social media marketing and business performance of MSMEs during the COVID-19 pandemic. *The Journal of Asian Finance, Economics and Business*, *8*(2), 523-531. https://doi.org/10.13106/jafeb.2021.vol8.no2.0523
Taiwo, O. S., Hakan, A. C. E. T., & Savaş, Ç. (2022). Modeling the impacts of MSMEs' contributions to GDP and their constraints on unemployment: The case of African's most populous country. *Studies in Business and Economics*, *17*(1), 154-170. https://doi.org/10.2478/sbe-2022-0011
Taylor, R., Burrows, E. & Logan, P. (2002). Assessing organizational performance: The dynamic theory of innovation approach. *International Journal of Emerging Trends in Business and Management*, *28*(7), 190-203
Tijani, A. A., Osagie, R. O., & Afolabi, K. B. (2021). Effect of strategic alliance and partnership on

Article DOI: 10.52589/AJESD-WYE3IERI
DOI URL: https://doi.org/10.52589/AJESD-WYE3IERI

the survival of MSMEs post COVID-19 pandemic. *Ekonomicko-manazerske spektrum*, *15*(2), 126-137.

Veliu, L., & Manxhari, M. (2017). The impact of managerial competencies on business performance: SME's in Kosovo. *Journal of Management*, *30*(1), 59-65.

Yahaya, H. D., Geidam, M. M., & Usman, M. U. (2016). The role of Micro Small and Medium Enterprises in the economic development of Nigeria. *Journal of Advance Management and Accounting Research*, *3*(4), 1-18.

Yorkulov, M., Marjona, T., & Zarrina, B. (2022). Usage of ICT for hospitality industry of Uzbekistan: Analysis and suggestions. *British View*, *7*(2), 56-71

Yunis, M., Tarhini, A., & Kassar, A. (2018). The role of ICT and innovation in enhancing organizational performance: The catalyzing effect of corporate entrepreneurship. *Journal of Business Research*, *88*, 344-356. https://doi.org/10.1016/j.jbusres.2017.12.030

Article DOI: 10.52589/AJESD-WYE3IERI
DOI URL: https://doi.org/10.52589/AJESD-WYE3IERI