

INFORMATION COMMUNICATION TECHNOLOGY AND SMALL/MEDIUM ENTERPRISE PERFORMANCE IN BENIN CITY EDO STATE NIGERIA

By

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Abstract

This study investigates the impact of ICT on the performance of small and medium-sized enterprises (SMEs) in Benin City, Nigeria. Through a survey of 122 SMEs, the study examined the extent to which SMEs employ ICT to improve their operational processes and make their products and services more accessible. The findings reveal that ICT significantly influences SME performance in Benin City. SMEs that have adopted ICT have experienced improved operational efficiency, reduced costs, and increased market access. Specifically, the study found that ICT has enabled SMEs to streamline their production processes, enhance communication with customers and suppliers, and expand their reach to both local and international markets. Based on these findings, the study recommends that both SMEs and government in Benin City prioritize ICT adoption and investment. SMEs should invest in ICT infrastructure and training to leverage the benefits of technology, while the government should create a supportive environment for ICT development and adoption by SMEs. By embracing ICT, SMEs in Benin City can enhance their competitiveness, improve their performance, and contribute more meaningfully to the local economy.

Keywords: Information Communication Technology (ICT), Small and Medium Enterprises (SMEs), SME performance, Benin City, Edo State, Nigeria

Introduction

Business activities nowadays have changed from the old traditional ways of doing things. Business is rapidly evolving from conventional to innovative model contexts. Therefore, entrepreneurs need to shift their focus and advance ways they can survive in the 21st century rather than relying on traditional methods of conducting their businesses (Agyemang et al., 2021). Entrepreneurship in the 21st century entails adopting novel strategies starting from leadership to administration, commercialization and digitalization of an enterprise activities. Modern global entrepreneurship development is one of the most promising approaches for overcoming the impacts of the global economic crisis and preventing and leveling future financial system crises because it ensures the highest level of production and distribution process optimization (Morozova et al., 2019).

Consequently, the introduction and progression of information technology brings a significant impact on different aspects of life, specifically in the business sector, and most especially amongst small and medium scale enterprises (Mgunda, 2020).

The society as we know it, is going through a radical makeover, thanks to constant connectivity everywhere. This is creating a need for a digital makeover of everything – from retail to our postal system. It is changing our infrastructure needs and it is also increasing the velocity of business. To stay ahead of the game business owners must also change the traditional way of operating their day-to-day business. The business world stayed pretty much the same for a century or so after the Industrial Revolution but it's probably pretty safe to say that's *never* going to happen again. The exponential rate at which technology is developing, mutating, and adapting is so fast that you can't help but be swept away in a tidal wave of progress— whether you're ready for it or not (Santhosh, 2018).

Small-scale enterprises are the nation's backbone, accounting for the majority of firms in most countries and generally offering the greatest potential for employment growth. Certain factors, including turnover, number of workers, profit, capital employed, market share, asset value, and relative size within the sector, can be used to define SMEs. Many academics and researchers have demonstrated the importance of small and medium-sized businesses in growing national economies (Nasse & Sawadogo, 2019). Agbiriogu & Amah (2021) stated that in most economies, small and medium firms (SMEs) account for more than 90 percent of all enterprises, account for the greatest rate of employment growth, and generate a considerable proportion of industrial production and exports. They are also seen as crucial to Nigeria's economic growth, poverty reduction, and job creation. However, their underwhelming record in job creation in recent years has piqued the public's curiosity in their issues and potential.

The new concepts currently are e-business (e-commerce) or electronic business. The performance of e-commerce gives new prospects and challenges to business professionals and organizations.

Santhosh (2018) explained that business technology allows companies to outsource business function to other businesses in the national and international business environment. Outsourcing can help company's lower costs and focus on completing the business function they do best. Technical support and customer service are two common function companies outsource. Small business owners may consider outsourcing function if they do not have the proper facilities or available manpower. Technology allows businesses to outsource function to the cheapest areas possible, including foreign countries.

Agbiriogu & Amah (2021) argued in their study that numerous pioneering organizations have gone out of business due to their incapacity to adjust to environmental changes and uncertainty. This is due to the fact that indicators of dangers and competition are regular elements of a complex and dynamic environment in which only entrepreneurial enterprises thrive.

Small and medium enterprises have generated relative large amount of economic development and achieved decent level of productivity especially of capital. This is attributed to the right kind of technology and innovations brought about by globalization. Because of the interdependence and interconnectedness associated with globalization, SMEs are able to import technology, equipment, spare parts and raw materials from developed nations for their manufacturing processes (Chukwu et al., 2016).

Despite the drawbacks caused by Nigeria's position in the global process, there is rapid fall in transport costs, improved physical communication, advanced computing power, telecommunication and all these are of immense benefit to SMEs. Globalization of communication now makes it possible for SMEs to coordinate their production operation across a wide range of countries and to run global operations (Chukwu et al., 2016).

Statement of the Problem

The role and importance of ICT in business growth and development cannot be over emphasized. However in Nigeria, SMEs do not enjoy this in a substantial way due to the low state of development of the ICT facilities in the country. Thus, the success and contribution of these forms of enterprises to the economy of the nation, is substantially affected. Another major problem is the indifferent attitude of a good number of SMEs owners and operators in Nigeria towards ICT, to the extent that they are yet to appreciate and adopt ICT and all the benefits that goes with it in the day to day running of their business activities. And as a result, such businesses continually experience low turnover, obsolete operational procedures and processes, systemic inefficiencies, decreasing market share, outclassing by rivals and competitors, increasing marginal and total cost in operation etc. Invariably, such small and medium entrepreneurs are merely reduced to firms whose business practices is only for survival, as they remain local in their scope of operation and hence, not able to expand effectively nor contribute adequately to job creation as well as economic growth and development in the country.

Objectives of the study

In pursuant of two specific objectives, this study seek to;

- i. Determine the extent to which SMEs employ ICT to improve or change their operational and production processes.
- ii. Examine how well SMEs employ ICT to make their products and services more easily accessible and tradable.

Research Questions

- i. To what extent does SMEs employ ICT to improve or change their operational and production processes?
- ii. How well does SMEs employ ICT to make their products and services more easily accessible and tradable?

Conceptual Review

Small and Medium Enterprises

In Olatunji (2015), the National Council of Industries refers to SMEs as business enterprises whose total costs, excluding land, are not more than two hundred million naira ₦200million (€912,813,22). However, the Small and Medium Enterprise Development Agency of Nigeria (SMEDAN) defines SMEs based on the following criteria: a micro enterprise which is a business with less than 10 people, with an annual turnover of less than ₦5,000,000.00 (€22,896,35); a small enterprise as a business with 10-49 people with an annual turnover of ₦5,000,000 to ₦49,000,000 (€228,469,28); and a medium enterprise as a business with 50-199 people with an annual turnover of ₦50,000,000 to ₦499,000,000 (€228,469,28).

Hence, small and medium enterprises have been the vehicle that drives economic growth and development globally. In real terms, SMEs has contributed immensely to the economic growth in developing countries, Nigeria inclusive. Small and Medium Enterprises (SMEs) occupy a place of pride in virtually every country or state. Because of their significant roles in the development and growth of various economies, they have aptly been referred to as the engine of growth and catalysts for socioeconomic transformation of any country (Olatunji, 2015). Hence, Ongori & Migiro (2010) agree that SMEs not only help to improve the living standards of people but they also bring about substantial local capital formation and achievement of high levels of productivity and capacity.

Types of small and medium scale enterprises

Olatunji (2015), categorized businesses that falls under small and medium scale thus; firewood supply, packaging of food items, meat retailing, plantain production, restaurant service, small scale poultry, operating a nursery school for children, home services. Others include soap production, aqua culture/fish farming, chalk making, nylon production, concrete block production, hair/body cream production amongst others. He also summarized them accordingly based on SMEDAN's:

- i. **Micro/Cottage Industry:** That is an industry with total capital employed of not more than ₦15million (€69,168.94) working capital but excluding cost of land and a labour size of not more than 10 workers.
- ii. **Small – Scale Industry:** An industry with total Capital employed of over ₦1.5million (€6,916.77) but not more than ₦50million (€228,469.28) including working capital but excluding cost of land and labour size of 11 – 100 workers.
- iii. **Medium – Scale Industry:** An industry with a total capital employed of over ₦50million (€228,469.28) but not more than ₦200million (€922,289.89) including working capital but excluding cost of land, and or a labour size of 101 – 300 workers.
- iv. **Large – Scale Industry:** An industry with a total capital employed of over ₦200million (€922,289.89) including working capital but excluding cost of land or a labour size of over 300 workers. Comparatively, most advanced countries seemed to have agreed on a maximum limit of 500 employees as a small Firm.

Life cycle of small and medium enterprises

In general, the ideal life cycle of small and medium enterprises can be divided into four phases: start up, accelerated growth, stable growth and maturity.

- i. **Startup** - usually lasts for a period of one to three years during which the founder supervises the whole business activities that may be carried out by family members, friends or small number of employees.
- ii. **The Phase of Accelerated Growth** - usually lasts three to four years. During this period, the founder or a management expert handles management. At this point, a corporate organization is developed thereby leading to separation of ownership from management.
- iii. **The Stable Growth phase**- typically has a duration of two to five years. During this period, management expertise and the corporate organization are divided into numerous departments and inflow of stable, long-term venture capital from corporate investors begins to appear.
- iv. **Phase of Maturity** – this is the final stage that may start after several years of establishing the business. It adopts the same type of management as stable growth phase but major difference being that sources of funding may become more diverse (Olatunji, 2015).

Information Communication Technology

Information Technology explains any technology that enables humans to create, change, store, communicate, and spread information. IT brings together high-speed computing and communication for data, voice, and video. For instance, IT consists not only of personal computers (laptops), but also telephones, televisions, electronic household appliances, and modern handheld devices like cell phones. The advancement of the tools is significant and supportive of business activities to be efficiently and effectively carried out (Mgunda, 2020).

Globally, changes in the way of conducting business are trending, and these changes are mainly in meeting the required information and comprehensive network systems to assist faster and more flexible accessibility of services. Things that are used to be expensive and take a long time, nowadays can take a short period to complete. According to Shaqiri (2015), due to the impact of IT, a task that would involve ten people now days can involve one person. Internet-based computer technology has increasingly developed into the most effective form of handheld computers and tablet PCs. High population mobility needs the world of commerce to enable the offering of goods and services instantly according to consumer demand (Mgunda, 2020). In order to overcome challenges, most business organizations are now using the media Internet to connect producers and consumers (sellers and buyers). The transactions through the Internet are well known as e-business and e-commerce. Many researchers describe that the main characteristic of global business today is e-business. The business model facilitates the exchange of information and business transactions that are paperless, via Electronic Data Interchange (EDI), e-mail, electronic bulletin boards, electronic fund transfers, and other network based technologies. The e-business is supported by three main factors, such as.

- Increase in competition in the global economy, regional trade agreements, and growing consumer power.

- Social and environmental factors such as changes in workforce characteristics, government deregulation, awareness and demands for ethical practices, knowledge of corporate social responsibility, and political changes
- Technological factors, such as the short lifespan of product and technology life cycles, innovations that occur almost every time, information-overload, and reduced risk of technology costs on performance (Mgunda, 2020).

Specific Influence of Information Technology on SMEs

Santhosh (2018) elaborately emphasized on the practical influence of technology on SMEs to the extent that any entrepreneur can readily benefit from its adoption on virtually all aspects of the business dealings, and these are x-rayed accordingly:

Reduction in Business Costs

Small business owners can use technology to reduce business costs. Business technology helps automate back office functions, such as record keeping, accounting and payroll. Business owners can also use technology to create secure environments for maintaining sensitive business or consumer information.

Improvement in Communication

Business technology can help small businesses improve their communication processes. Emails, texting, websites and personal digital products applications, known as “apps,” can help companies improve communication with consumers. Using several types of information technology communication methods allow companies to saturate the economic market with their message.

Companies may also receive more consumer feedback through these electronic communication methods. These methods also allow companies to reach consumers through mobile devices in a real-time format.

Potential Increase in Market Share

Technology allows small businesses to reach new economic markets. Rather than just selling consumer goods or services in the local market, small businesses can reach regional, national and international markets. Retail websites are the most common way small businesses sell products in several different economic markets. Websites represent a low-cost option that consumers can access 24/7 when needing to purchase goods or services. Small business owners can also use Internet advertising to reach new markets and customers through carefully placed web banners or ads.

Mobile Solutions

Mobility is “The Next Big Thing.” So much so that Google has revamped its algorithms once again to prioritize websites that make seamless mobile web browsing easier. Every aspect of your business can be handled from remote locations if your smart device or tablet is loaded with the correct software. Everything from your sales enablement, content marketing and customer relations through back end processes like shipping and invoicing at the click of a button. But mobile isn’t just for you—it’s for your consumers as well. With the rise of Generation Y (Millennials) more people are using mobile devices to buy, sell, shop, find local businesses, and share their retail experiences with friends, acquaintances, prospects, and Facebook strangers every day.

Cloud Computing

Cloud computing allows businesses large and small to move some of their operation to third-party servers accessible via Internet connectivity. Not only does this allow for variable data packages but also for rapid (on-demand) expansion and mobility without the fear of downtime, crashes, or permanently lost data. This has allowed small business access to resources that would have been cost prohibitive for them in the past and evened the playing field when it comes to competing against corporations with far more funding.

Extreme Customer Segmentation

With the flow of more and more data, it's easier now than ever before to understand the customers you're looking for. With analytics services expanding you can segment your prospects into ever more minute groups in order to target them specifically and, in effect, get more bang for your marketing buck. Even a simple Google account will let you know where your visitors are from, what type of browser they're using, how they found your website, what they do while on it, how long they stay, and at which point they decided to leave. More in-depth services can allow you to whittle that data down even further to incrementally refine your processes, offerings, and approach to dramatically increase conversions.

Connectivity

Technology has also increased the ease with which we can all stay in touch. Whether it's having your coworkers and employees available via text/video chat at a moment's notice, or being able to send targeted promotional email blasts to prequalified customers when they're shopping at nearby businesses, the rise of mobile technology has blended almost seamlessly with communication software to create a hyper-real web of real time information.

Decreasing Cost/Increasing Functionality

Two things have come together to create a "buyer's market" when it comes to software solutions for your business. First, the hardware and software necessary to create these software solutions has become increasingly easy to use and afford. Secondly, the number of tech savvy and entrepreneurial minds who can exploit such crumbling barriers has multiplied exponentially (Santhosh, 2018).

Information Technology and Competitive Advantage amongst SMEs in Nigeria

Although the objective of any Information IT business unit is the enhancement of modern firm's performance - through the improvement of the quality of managerial decisions - in the absence of an adequate alignment between IT and Business objectives, the attainment of the firm's agility status is jeopardized, and consequently, the chances of achieving the IT-Business competitive advantage are reduced (Krume, 2014).

The strategic role of information systems involves using information technology to develop products, services, and capabilities that give a company strategic advantages over the competitive forces it faces in the global marketplace. This creates strategic information systems, information systems that support or shape the competitive position and strategies of an enterprise. So a strategic information system can be any kind of information system (TPS, MIS, DSS, etc.) that helps an organization:

- 1) Gain a competitive advantage
- 2) Reduce a competitive disadvantage
- 3) Meet other strategic enterprise objectives

It is also important to state here that Information technology emerges as an essential asset of modern firms' competitive advantage, because it connects all business functions and supports

managerial decision processes - both essential conditions for the attainment of the organization agility level.

In any company, IT has a dominant effect on competitive advantages in either cost or differentiation. The technology also affects value activity themselves or allows companies to gain competitive advantage by utilizing changes in competitive scope. Thus, IT tends to affect competition in three fundamental ways:

- It changes industry structure and, in so doing, alters the rules of competition.
- It creates competitive advantage by giving companies new way to outperform their rivals.
- It spawns whole new business, often from within a company's existing operations (Krume, 2014).

Theoretical Framework

This study is underpinned on the Contingency theory.

The contingency theorists viewed technological process as an important moderator.

The technological complexity of process moderates the relationship between business strategy and performance as consistent with the contingency theory. Theorists have argued that competitive advantage can come from any technological process. According to the theorists, firms should therefore incorporate their technological process in formulating and implementing their business strategies. The strategy theorists are of the view that the matching of business strategy with the technological process should significantly improve a firm's performance. SMEs tend to emphasize on different performance measurement, this suggests financial profitability and growth to be the most common measures of the firm's performance.

From the contingency point of view, technology is considered as an important contingency tool. This framework viewed technology as source of competitive advantage for a firm. However, a firm will need to align its technology to its strategy. The contingency theory suggests that firms that adapt their technology to their business strategies tend to improve their performance. Hence, SMEs that have adopted technology, enjoys cheaper operational costs than those that have not.

Thus, from the contingency viewpoint, different types of firms operating in different situations require different technological complexity. Mass production technology or more complex technology is normally effective for manufacturing firms involved in high volume products. Likewise, unit product or less complex technology is more suited for firms involved with the production of customized production.

3 Cs which are customer, costs and competition should be mixed to meet the overall objectives of the small medium enterprises. Therefore, technology should match with strategy and employee training to meet the demands of the market. Adaptability to change is a veritable tool because technology which is ever changing from time to time, brings efficiency, high output, low costs and high profitability, which are some of the core objectives and targets of small and medium enterprises.

Empirical Review

The study conducted by Schroeder et al., (1995) found the linkages between strategy, technology and performance in small manufacturing firms. The authors concluded that failure to adopt an appropriate new technology or the failure to realign a firm's strategy to the new technology weakened the firm's competitive position as well as affects its performance. Another study carried out by Ackroyd (1995), discovered that although information

technology firms lack structure or lack hierarchy, these firms are highly successful in terms of sales turnover and value-added due to their adoption of high technology.

Past empirical research on the relationship between strategy and performance has mainly concentrated on large firms. These studies provide strong evidence that suggests business strategies are associated with the performance of large firms. Although most of the empirical studies have centered upon large firms, findings of an increasing number of studies have suggested that business strategy also influenced the performance of smaller firms. Giglierano (1987) noted that effective business strategies in smaller firms depended on the type of business as well as the products they developed. Giglierano found that SMEs that adopted particular business strategies seem to achieve better performance. Forrest (1990) observed that small firms have to develop new strategies to react to the changing nature of business as reflected in such factors as increasing competition, both national and international, the increasing internationalization of markets, and new global competitors.

METHODOLOGY

Research Design

Due to the nature of this study, the researchers adopted the survey research design in order to secure as much and reliable information and data that could help for the purpose of analysis

Sample and Data Collection

It is practically impossible to cover the whole population. Thus a sample was used. The sample represents a given population of small and medium enterprises in Nigeria. And the instrument for data collection is the questionnaire.

Sample Size

The researcher employed judgmental sampling technique in the determination of the sample size and thus discretionally arriving at 122 as the sample size.

Method of Data Analysis

A tabular presentation of sourced data is adopted in this study. The data are analyzed using a combination of statistical calculations and narratives. Exploratory analysis will be used to determine factors that are significant for the development of SME in Nigeria. Meanwhile, descriptive statistics will be used in this study.

DATA ANALYSIS AND RESULTS

In order to determine the impact of ICT on SMEs, it was necessary to determine how ICT has been able to influence the business of SMEs in Nigeria. The section provides information on descriptive statistics. Table 4.1 presents the descriptive statistics of the variables used in exploring the impact of ICT on SMEs in Nigeria.

Table 1. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
SMEs employs ICT to improve or change their operational processes	122	1.00	2.00	1.6129	.49106
SMEs employs ICT to make their products and services more easily accessible and tradable	122	1.00	4.00	1.8065	.74303
Valid N	122				

From table 4.1, it shows that the most important effect of ICT on SMEs, is the ability for ICT to be used to improve or change their operational processes. This is followed by use of ICT to make SMEs their products and services more easily accessible and tradable.

Table 2. SMEs employs ICT to improve or change their operational and production processes

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Agree	46	37.7	37.7	37.7
Agree	76	62.3	62.3	100.0
Total	122	100		

Table 4.2 shows that 100% of the respondents agree that SMEs employ ICT to improve or change their operational processes. Hence, it can be said that ICT enhances the operational and production processes in SMEs, as technologies could be used to reduce the number of supervisors required in the process.

Table 3. SMEs employs ICT to make their products and services more easily accessible and tradable

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	46	37.1	37.1	37.1
Agree	58	46.8	46.8	83.9
Uncertain	18	14.5	14.5	98.4
Disagree	2	1.6	1.6	100.0
Total	122	100.0	100.0	

Table 4.3 above represents the respondent's opinion. Where 83.9% agree that SMEs use ICT to make their products and services more easily accessible and tradable. In other words, buyers and sellers are able to share information and transfer goods across national borders with the use of ICT, which helps to increase access to global supply chain.

4. Findings and Conclusion

From the established result of this study, the study thus concludes that ICT has a great influence on small and medium enterprises performance. Hence, the application of ICT in the operation of a particular SME in Nigeria, is able to bring a significant change in its operational and production process. In the same way, the employment of ICT is also able to make the business product and services more easily accessible and tradable.

Recommendations

Following the findings in this research, it is recommended that government should strongly engage and invest in technological innovations and development. Furthermore, SMEs in the country should as a matter of urgency and expediency, with open arms embrace and equally adopt ICT, in order to meet up with global trend and competition, as this will both in the short and long term enhance the survival, growth, profitability and stability of the business.

REFERENCES

- Agbiriogu, E. K., Amah, E. (2021). Globalization and small businesses in Nigeria: challenges and prospects. *African Journal of Business and Economic Development*, 1(12), 73-78
- Agyemang, K. S., Cai, L., Agyeman, F. O., Brenya, R., Laweh, N., Semyalo, M., Atampa, A. S. (2021). A critical assessment of the role of entrepreneurship development in the 21st century. *European Journal of Business and Innovation Research*, 9(5), 1-26
- Chukwu, B. A., Aguwamba, S. M., Anyasi, E. (2016) the impact of globalization on the development of small and medium enterprises in Enugu state, Nigeria. *International Journal of Economics, Commerce and Management*, 4(11)
- Donat, B (n.d) Impact of Technology on the Business Strategy Performance Relationship in Building Core Competence in Uganda Small Medium Enterprises (SME's). *International Conference on Innovation and Management*, 39-43
- Krume, N. (2014) the Role of Information Technology in the Business Sector. *International Journal of Science and Research*, 3(12), 303-310
- Mgunda, M. I. (2020) Impact of Information Technology on Business. *Journal of International Conference Proceedings*, 147 – 156
- Minton, S. (2003). Nordic Nations still top information index. *The World Paper*.
- Morozova, Irina A., Elena G. Popkova, and Tatiana N. Litvinova. 2019. "Sustainable Development of Global Entrepreneurship: Infrastructure and Perspectives." *Int Entrep Manag J* 15:589–97. doi: 10.1007/s11365-018-0522-7.
- Nasse T. B., & Sawadogo, Y. M. (2019). Internal equity and customer relationship management in subsistence markets: A comparative and a qualitative study of three private companies in Burkina Faso. *International Journal of Management and Entrepreneurship Research* 1(1), 42-58.

- Olatunji, O. S. (2015) The Impact of Information Communication Technology on Small and Medium Scale Enterprise Productivity in Nigeria. Business Economics and Tourism, a BSc. Thesis Submitted to the Department of Business Administration, VAASA University of Applied Science.
- Ongori, H and Migiro, S. O. (2010) Information and Communication technology adoption: a literature review. *Journal of Chinese Entrepreneurship*, 2(1), 93-104.
- Onugu, B. A. N. (2005) Small and medium enterprises (SMEs) in Nigeria: Problems and Challenges. PhD Thesis, St. Clements's University [online].
- Santhosh, T. (2018) Impact of Technology in Business. *International Journal of Management and Humanities*, 3(6), 6-10
- Shaqiri, A. B. (2015). Impact of Information Technology and Internet in Businesses. *Academic Journal of Business, Administration, Law and Social Sciences*, 1(1), 73–79.