

## Effect of information and communication technology (ICT) on performance of micro, small and medium enterprises

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### ABSTRACT

*Information and Communications Technology plays a central role in the economic, social and political life of every nation. Hence, this study examines the role of information and communication technology on the performance of micro, small, and medium enterprises (MSMEs) in FCT, Abuja. Participants were MSMEs owners who have spent a minimum of three years in operation. A total of 367 questionnaires were personally distributed to the participants but only 325 were returned out of which 300 copies were considered valid for analysis. The statistical package for social sciences (SPSS) was employed for data analysis. The study found that there is a positive and significant relationship between e-business platforms and performance of MSMEs. These platforms help MSMEs to reach a wider coverage of customers in the comfort of their homes. Also, statistical result demonstrates a positive relationship between access to internet facilities and performance of MSMEs. It implies that through internet facilities, MSMEs can operate unhindered, even during pandemics. Similarly, results indicate that information and communication technology management enhances MSMEs performance. It implies that the more MSMEs embrace ICT, the better their performance would be. Also, statistical results demonstrate a positive and significant relationship between effective information system and MSMEs performance. The result suggests that effective information management enhances MSMEs performance. Therefore, this study recommends that Small and Medium Enterprises Development Agency of Nigeria (SMEDAN) and Abuja Enterprises Agency should formulate workable strategies that will encourage MSMEs owners/managers to easily embrace ICT in their business operations to enhance MSMEs performance.*

**Keywords:** Information and communication technology, SMEs performance, return-on-investment.

## **Introduction**

The pervasiveness and importance of Information and Communication Technologies (ICTs) throughout the economy and society can't be ignored. The former United Nations Secretary-General, Late Kofi Annan, stated that, "If harnessed properly, Information and Communication Technologies (ICTs) have the potential to improve all aspects of our social, economic and cultural life. ICT can serve as an engine for development in the twenty-first century" (Annan, 2003). Information technology as a concept stems from the mankind's continued searches to solve information problems and managing necessary data with ease.

Information Technology is about super-highways. It is not only about information super-highway, but also about developmental highways. When Japan and the Asian tigers were developing, they virtually had to pilfer technological information from the West, and then only in bits and pieces. At the touch of a computer, virtually all the information accumulated by the developed countries over the centuries is available even to the least developed of countries (Ademiluyi, 2004). Referring to Gates (1997), Ademiluyi (2004) observes further that properly harnessed, information technology provides third world countries with a development shortcut without precedence in human history.

Ademiluyi (2020) describes information technology as an electronic based technology which can be used to collect, store, process and package information and provide access to knowledge. It comprises both the supply side and the user side. The term also encompasses the notion of application of technologies to information processing. Since the end of World War II, the world has entered an age of globalization. The concept of the global village has meant that the world now operates a global economy. With greater freedom of trade and investment and new breakthroughs

in telecommunication technology, markets have become much larger, more complex and more intricately interlinked than ever before. Information technology today is the major engine of economic growth. Thus, it has brought about a steady increase in universal living standard. Tiamiyu (2003) notes that ICTs are the electronic technologies for creating, acquiring, storing, processing, communicating and using information.

To underscore the importance of communication, about 75% of the time spent in our offices by top politicians and bureaucrats in public and private organizations is devoted to communication in form of giving, receiving, analyzing or storing.

Despite the benefits of ICT, many MSMEs have not adopted and integrated ICT into their operations. There is dearth of study on the roles of ICT in both private and public organizations in Nigeria. Moreover, the few available studies on ICT in Nigeria focused mainly on the banking sector (Dauda & Akingbade, 2011; Emmanuel, 2011). There is no literature on roles and adoption of Information and Communication Technology on performance of MSMEs in FCT. The study, therefore, fills this gap and contributes to knowledge on the role of ICT on improved MSMEs performance in Abuja, FCT.

Consequently, the study is imperative in view of the need for MSMEs owners to develop and maintain a high level of ICT usage in order to meet global competition, and enhance quality service delivery. Uwaje (2000) opined that the term “information technology” includes computers and communication technology as well as associated software. Information technology is geared towards addressing the barriers of business. Such barriers include those of time, cost and distance. For all areas of science, information technology is now of great importance, both as a research tool and as a medium of facilitating the information transfer process (Metcalle, 1990). Management practice has been a major beneficiary of the introduction of information technology. With the

computer, projections of income, expenditure, raw-material requirements and pricing, are much easier, much faster and much more accurate.

The potential for further change continues with recent advancements in ICT and with changing societal expectations such as global meltdowns and lockdowns which characterized recent Covid-19 pandemic all over the world. It is against this backdrop that, this study seeks to investigate the relationship between deployment and utilization of Information and Communication Technologies (ICTs) tools in MSMEs operating in Abuja-FCT and to examine if the ICTs skills possessed by the MSMEs owners and employees influence MSMEs performance.

## **CONCEPTUAL FRAMEWORK**

### *Concept of MSMEs performance*

SMEs promote indigenous industrial transformation through the mobilization and utilization of local savings, local raw material, and human capital to engage in local production of goods and services and serve as a source of inputs to large enterprises (Uwajumogu et al., 2015). In this sense, SMEs contribute enormously to the Gross Domestic Products (GDP) of many economies in the world (Ilegbinosa & Jumbo, 2015).

Performance is a multi-dimensional construct, which can be evaluated through financial and non-financial measures (Buli, 2017; Gbandi & Amissah, 2014; Zhou, Hu & Shi, 2015). These measures of firm performance (particularly financial measures) can be determined objectively from documented past records and can also be determined subjectively through self-reported perception held about the firm (Rauch et al., 2009). According to the theory of growth of the firm, performance is nothing more than an increase in the production of products which is the point

where the average cost curve is at the minimal level for that particular product, given the optimal size of the firm (Penrose, 1959; Boso, Story & Cadogan, 2013; Gruber-Muecke, & Hofer, 2015).

In Nigeria, like any other country, a vibrant SME sector is needed to promote sustainable economic growth and development through employment generation, wealth creation and poverty reduction. SMEs can also contribute to improving the oil-based Nigerian economy to an industrialized economy. Thus, SMEs can breed more business opportunities, generate revenue and sustainable economic growth and development. SMEs can also increase production capabilities of the Nigerian economy through absorption of productive resources, thus helping to create linkages between small and big firms that will encourage foreign investments (SMEDAN, 2018).

In Nigeria, the situation seems to be different as the contribution of SMEs to GDP is less than five percent, which is very low compared to other countries (Du & Banwo, 2015; Ofili, 2015). More so, evidence abounds that the performance of SMEs in Nigeria is not as impressive as the performance of SMEs in other developing countries such as South Africa, Ghana, and Malaysia. The low level of SMEs' performance in Nigeria has negative effect on the GDP growth rate, unemployment rate, and Nigeria's ranking on the world competitiveness index. Thus, to some extent, poor performance of SMEs contributes to a decrease in standard of living and increase in the rate of poverty in the country (Uwajumogu et al., 2015).

#### *Concept of information and communication technology*

Information can be described as data that is accurate and timely, specific and organized for a purpose, presented within a context that gives it meaning and relevance, and can lead to an increase in understanding and decrease in uncertainty. Information is valuable because it can affect behaviour, a decision, or an outcome.

Communication is the process of transmitting thoughts; the sharing and imparting of information; the giving of understandable information and receiving and understanding of the message; the transmitting of messages and the linking of people; the conveying of ideas, attitudes and feelings; the creating, exchanging of messages within a network of interdependent relationships (James, Ode, & Soda, 1990).

The word technology refers to the making, modification, usage, and knowledge of tools, machines, techniques, crafts, systems, and methods of organization. In order to solve a problem, improve a pre-existing solution to a problem, achieve a goal, handle an applied input/output relation or perform a specific function.

Generally, it is highly believed that no managerial reform can be materialized unless it is supported by ICT to improve effectiveness and efficiency of personnel management, procurements and many other government activities. The opportunities presented by e-government for improved administration, among other things, are leading to a global convergence toward a standard reform model in public sector. ICT-enabled reforms can yield many benefits, including lower administrative costs, faster and more accurate response to requests and queries of the citizen, especially after the normal office hours. It will also lead to direct access to transaction or customer accounts held in different parts of government institutions. More so, e-government provides basis for ability to harvest data from operational systems, thus increasing the quality of feedback to manager and policymakers.

However, the benefit can only be materialized if different offices and people are willing to share information with common mutual interests (Ambali, 2021).

### ***ICT and performance of MSMEs***

The challenges of e-government are even more acute in developing countries, although it also offers solutions. Public administration in all countries requires new thinking and leadership to ensure that e-government realizes its full potential. In a study conducted among Italian manufacturing firms within the period of 1995 to 2003 for the examination of the complementarities among information and communication technologies (ICT), skills, and organizational change from a panel of 680 Italian manufacturing firms. The researchers, Giuri, Torrisi and Zinovyeva (2008) found evidence of complementarities between skills and organizational change, but did not find evidence of complementarities between ICT and skills. Moreover, their results showed that the hypothesis of full complementarities among ICT, human capital, and organizational change does not apply to small and medium firms. Instead, they discovered that organizational change yields negative effects on the complementarities between ICT and human capital.

In a similar research study on the use, types, and availability of information and communication technologies (ICTs) in four government departments in KwaZulu-Natal, South Africa, in the context of work productivity and creativity, Mbatha, Ocholla and Roux (2011) using Diffusion of Innovations Theory, found that a variety of ICTs have been adopted in the sector for interaction and communication. The respondents' level of interaction with some of the ICTs was very high, while the use of ICTs such as video conferencing, television and radio was very poor.

The most common obstacles to the effective use of ICTs in government departments were found to be lack of skills or competence, the lack of an ICT policy, and the lack of proper planning for the adoption and diffusion of ICTs in the sector. In their study, Kiula and Wafula (n.d) on the effective penetration and utilisation of ICT in the public service for high-end value-adding

operations in local government; to enhance effective and efficient services that satisfy the citizens and other stakeholders. ICT penetration and utilization was found to have a significant linear relationship with ICT resources, the level of education, age, and length of service and the job scale of staff. In the light of above studies, the current study intends to investigate the deployment and utilization of Information and Communication Technologies (ICTs) tools in administration of FCT-Abuja government.

According to Drucker (1993), the Newtonian-industrial age model of reality emphasized hierarchical control. He added that within the traditional education system, the teacher was viewed as the authority and centre of control of the learning experience. With the increased importance and presence of human diversity within the global society and rise of an interactive network view of reality, our model of teaching and learning needs to change. Teachers do not simply recite ideas in the classroom-they think and explore within the classroom and they learn from the students. Students do not simply memorize “truth” they need to contribute and participate. He said the world brain/world mind system will be highly interactive. In fact, he said if we envision the computer as a teacher, then it will become increasingly personalized, intelligent and interactive with the user it will not simple provide “data”, it will ask questions and guide.

Huda (2001) added that the knowledge economy is significantly different to that for which most policy makers were educated and trained. Around the world, the various institutes are trying to grip the new ways of working that will create frameworks for future prosperity. This he said is not easy as the new economy and its activities rub shoulders with the old. There are tensions between established institutions and the “new kids on the block”. A concern of many commentators is the gap between the haves and the have-not, those individuals and societies that participate in the new

technology and prosper, and those that do not. He added that this problem is potentially caused in part by unequal access to necessary support services and infrastructures, such as education and internet access. He said for everyone who shares in the prosperity brought about by the knowledge revolution new agendas are needed.

Based on the extant literature and theoretical underpinnings, the following hypotheses emerged:

Ho1: There is no relationship between e-business platforms and performance of MSMEs

Ho2: There is no relationship between adoptions of internet facility and performance of MSMEs

Ho3: There is no relationship between information and communication technology (ICT) and performance of small and medium enterprises

## **THEORETICAL PERSPECTIVE**

### **Theory of Knowledge Sharing**

According to Huda (2001); the exploration of computing and related technologies for strategic advantage, began in the 70s, however, the strategic opportunities and threats in the late 80s is much more significant, not only because of the rapid advancement of Information Technology (IT) but because of the accompanying educational, economic and social change. Thus, IT has become an important support for many educational strategies. He said as computer networks evolved during the 80s to connect together more people, and they added extra facilities such as computer conferencing, the benefits of using them for communication and knowledge sharing became more apparent.

## **METHODS**

In this study, the population is 8,506 MSMEs that were registered with the Abuja Enterprise Agency as at August, 2022. In this survey, 367 samples were chosen using Krejcie and Morgan

(1970) sample size determination table. Questionnaire was used to obtain relevant data. The questionnaire designed for the study was subjected to a validation process for face and content validity. In all, the questionnaire is adjudged valid and reliable.

## RESULTS

**Table 4.1**

### Results

	Items	SD	D	A	SA
1.	Information management collects, processes, stores, analyze and disseminate information for effective performance.	23 7.7%	49 16.3%	55 18.3%	173 57.7%
2.	SMEs provide hardware/software and electronic gadgets that workers use to access information system.	42 14.0%		63 21.0%	195 65.0%
3.	Information system helps SMEs facilitate improved performance.	12 4.0%		83 27.7%	205 68.3%
4.	Information management increases communication among SMEs owners and staff.	16 5.3%	15 5.0%	92 30.7%	177 59.0%
5.	A good information management helps staff in record keeping.	17 5.7%		51 17.0%	232 77.3%
6.	Electronic performance support system (EPSS) increases SMEs performance.	9 3.0%		88 29.3%	203 67.7%
7.	Information management helps in the correction of wrong sales records.	42 14.0%		192 64.0%	66 22.0%
8.	MIS provides information to SMEs owners at all times	74 24.7%		53 17.7%	173 57.7%
10.	Information management helps management to measure firm performance			252 84.0%	48 16.0%

**Source: Field Survey (2022).**

Table 4.1 presents respondents' responses in relation to information management. About 23 respondents representing 7.7% strongly disagree that information management collects, processes, stores, analyzes and disseminates information for effective performance, 16.3% disagree while 18.3% as well as 57.7% of the respondents agree that information management collects, processes, stores, analyze and disseminate information for effective performance.

More so, about 68.3% as well as 27.7% of the respondents are of the opinion that information

system helps management facilitate improved SMEs performance while 4% conclude that information system does not help management facilitate improved SMEs performance. 59% as 30.7% of the respondents conclude that information management increases communication among staff members while 5% as well as 5.3% conclude that information management does not increase communication among staff members.

About 14% of the respondents strongly disagree that information management does not help in the correction of wrong academic records mistakes while 64% as well as 22% of the respondents conclude that information management helps in the correction of wrong academic records mistakes. In terms of Local Area Network (LAN) installed by some SMEs, about 13.3% of the respondents conclude that it does not aid work performance while 24% as well as 62.7% of the respondents are of the opinion that it aids work performance. 57.7% as well as 17.7% of the respondents are of the opinion that MIS provide information to staff members at all levels while 24.7% of the respondents conclude that MIS does not provide information to staff members at all levels. In conclusion, about 84% as well as 16% of the total sample concluded that information management helps management to measure SMEs performance.

**Table 4.2**

***SMEs Performance***

Statement	Percentages				
	SD	D	N	A	SA
FP1. Over the last five years, our profit goals have been achieved.				100 (33.3%)	200 (66.7%)
FP2. Over the past five years, our sales goals have been achieved.				200 (66.7%)	100 (33.3%)
FP3. Over the past five years, our return-on-investment goals have been achieved.		50 (16.7)		100 (33.3%)	150 (50%)
FP4. In the past five years, the quality of our product(s) has improved.		50 (16.7)		200 (66.7%)	50 (16.7%)

FP5. Over the past five years, the rate of customer retention in our enterprise has been remarkable.				130 (43.3%)	170 (56.7%)
FP6. Over the past five years, our enterprise has developed a better reputation among major customer segments.				200 (66.7%)	100 (33.3%)
FP7. Over the last five years, the rate of employee turnover in our enterprise has reduced.		50 (16.7)		100 (33.3%)	150 (50%)
FP8. Over the past five years, our enterprise has been very effective in developing new product(s).				100 (33.3%)	200 (66.7%)

**Source: Field Survey (2022).**

Result from table 4.2 revealed that majority of the respondents are of the opinion that their profit goals have been achieved over the past five years. The result suggests that profit goals established by the SMEs owners have been achieved in the recent times. The reason for this may not be unconnected with the recent intervention programmes offered to the SMEs owners by the federal government agencies such the Bank of Industry, the central bank of Nigeria (CBN), Traders' Money, You Win Program, N-Power and so on.

Also, most of the participants were of the views that their sales goals have been achieved. The reason for sales goals achievement is not far-fetched due to the market size of Nigeria. An average SMEs sell commodities that are targeted at the low-income earners and this category of people constitute more than 80% of Nigerian population. Hence, the likely tendency to sell more on the part of SMEs owners.

On return-on-investment, about 83% of the respondents agreed that their goals in that regard have been achieved. This is not surprising because small scale businesses thrive very well in Nigeria. Any investor who puts his money in any venture in Nigeria will definitely make huge returns at the end of the trading year.

In relation to customer retention, most of the respondents agreed that customer retention in their enterprise has been remarkable. Bearing in mind that customer is king, most SMEs owners do put personal touches to create and maintain relationship with their customers.

Another result indicates that SMEs have developed a better reputation among major customers. Conscious efforts have been exerted to enhance the reputation of SMEs and their products. Also, most of the respondents conclude that the rate of employee turnover in their enterprise has reduced because with improved profitability and enhanced salary package for employees in the employment of SMEs, some of the employees will not be willing to change jobs.

Results of the hypotheses testing indicate that there is a positive relationship between e-business platforms and performance of MSMEs. More so, statistical results demonstrate a significant and positive relationship between adoptions of internet facility and performance of MSMEs. In addition, results show a significant and positive relationship between information and communication technology (ICT) and performance of small and medium enterprises.

## **DISCUSSION OF FINDINGS**

Statistical results demonstrate that there is a positive and significant relationship between effective information system and SMEs performance. Normally, people say information is power. It simply implies that a well-informed SME is empowered to do perform better.

Another result from hypothesis testing indicates that there is a positive and significant relationship between effective information system and SMEs performance. This result suggests that when the SMEs owners/managers have the requisite information, their performance will be enhanced.

Majority of the participants strongly agreed that information management enables SMEs to collect, process, and store, analyze and disseminate information for effective operational performance.

This implies that the management information system is helpful to the owners as it helps them to be well-equipped for effective and efficient performance.

Also, most of the respondents are of the opinion that SMEs owners provides some hardware/software and electronic gadgets that staff use to access information. Practically, this result suggests that the SMEs owners provide computer gadgets, printers, network connections, and other apparatus that are needed for a smooth operation of a computer-friendly environment.

Result indicates that the ICT helps to facilitate improved SMEs' performance. The result means that management gains by creating a work environment that supports information communication technology (ICT). In other word, workers' increased performance as a result of ICT is a blessing to the SMEs owners.

Statistical results show that information management helps in the correction of wrong records. In most SMEs records are kept manually, there are tendencies for errors and mistakes in the records. Also, such a manual record keeping method is time-consuming but with the advent of ICT in the present day, sales records and other valuable data are kept electronically to avoid mistakes.

In terms of work performance, majority of the respondents were of the opinion that staff members in SMEs use their time positively during working hours. Similarly, result demonstrates that staff members are very dedicated to their duties. In addition, most respondents strongly agreed that staff members have adequate knowledge of the tasks expected of them.

Staff members willingly accept responsibilities and deploy initiatives in solving operational problems at work. It was found that staff members perform their duties with little or no supervision. In addition, there is open communication and transparency between the management and staff

members. In the view of the researcher, open communication may be the key factor responsible for a harmonious working relationship between SMEs management and workers.

## **CONCLUSION**

Based on the findings of the present study, it can be concluded that information and communications technology have significant and positive impact on the performance of small and medium enterprises in FCT, Abuja. The impacts were found to be relevant to profitability, growth, sustainability, improved working conditions and overall economic development of the FCT, Abuja. Therefore, SMEs owners are encouraged to embrace ICT as a veritable tool to enhance SMEs performance.

## **RECOMMENDATIONS**

Based on the findings of this study, the following recommendations were put forward:

The federal and state governments should as a matter of urgency need to undertake deliberate policies aimed at encouraging the use of ICT facilities and equipment to support the growth and development of MSMEs in Nigeria.

The government agencies such as SMEDAN, BOI, NEPC, NDE and other state-owned supporting agencies should recognize the need for the applicability of ICT to enhance qualitative and quantitative decision-making in MSMEs.

The federal, state, local governments and other stakeholders should make the compliance of ICT facilities more relevant to encourage skill acquisitions and competence of MSMEs owners.

MSMEs owners/managers should show more interest in the use of ICT to guarantee improved MSMEs performance because ICT has capacity to handle and process data within a fastest desired speed.

Aggressive sensitization campaigns through workshops and seminars should be carried out from time to time to sensitize MSMEs owners and employees on the need to embrace ICT in order to enhance MSMEs operations.

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