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ICT IN ENTREPRENEURSHIP: A TOOL FOR ENHANCEMENT OF TRANSACTION MANAGEMENT FOR SMALL SCALE BUSINESS IN NIGERIA

By

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Abstract

This study examined the effect of ICT, as a tool for enhancement of transaction management for SME businesses in Nigeria. A survey was conducted in Delta South Senatorial district of Delta State, Nigeria. A total number of Seventy-three (73) SMEs operators were randomly selected as the sample size. Descriptive statistics which include frequency counts and percentages were used to describe the sample and to assess ICT use. Regression analysis was used to assess the relationship and influence of technology, organization, and environment characteristics on use of ICT. The findings showed that ICT use has a significant positive relationship with the constructs of the Technology, Organization, and Environment (TOE) Framework. The TOE Constructs also have joint influence on the use of ICT by the SMEs. Discussion of findings, summary, and conclusion along with research contribution were also presented in this study. It concluded that technology, organization, and environment features are indeed relevant to the study of ICT Use among the SMEs. Therefore, it was recommended that stakeholders must take seriously in planning the activities of SMEs and the corresponding related research work.

INTRODUCTION

Information and Communication Technology (ICT) has been, in a relatively limited period, one of the fundamental foundation blocks of contemporary society. Many countries already see ICT learning and mastering essential ICT skills and principles as part of core schooling, including reading, writing, and numeracy. Data and Networking Systems (ICTs) are computer devices used for retrieval and recovery (Iwu & Nzeako 2012; Suleiman, & Zuwom 2020; Oladimeji, 2018). Design is partially defined by the potential to create a synergistic relationship between scientific advances and human values. The accelerated pace at which ICT has developed since the mid-twentieth century, the proliferation and pervasiveness of ICT, has provided them a significant position in growth and globalization (Nwagwu, 2006). ICTs have a major effect on all fields of human life in the 21st century (Iwu & Nzeako 2012; Suleiman, Zuwo, 2020; Awobamise & Jarrar, 2019; Cunningham & Ekenberg, 2016; Ngozi, 2012; Ejeh et al. n.d.).

Information and communication technology (ICT) grows vast since the introduction of the internet. The internet helps send, share, or transfer information and data over different internet protocols (IP) in a network to serve billions of users

worldwide (Zorayda, 2000). Local entrepreneurship is a very common and important practice in the rural and urban areas of Nigeria, but most common in the rural areas. Considering how everyday businesses go on in most rural areas that are rich in agricultural produces but the people living there still have low standards of living. One begins to wonder why despite the agriculture growth in rural areas, the standard of living is still low. The question that comes to the mind is what can be done to help gain a better standard of living and generate profit for rural settlers? What can be of help in promoting local entrepreneurship? It makes one conclude how ICT can help promote local entrepreneurship in rural areas and help enrich the country's local culture, appreciate the work and produce of the rural areas (Ejeh et al. n.d.).

Entrepreneurship is derived from the French word entrepreneur, which means to initiate or take action. The French used it to describe contractors holding projects like roads and bridges (Musa, 2010; Umeano, 2012). William, et al., (as cited in Umeano, 2012) saw Entrepreneurship as accepting the risk of starting and running a business. They noted that it is the ability and willingness of an individual to create and build something that is virtually none existing (Suleiman & Magaji, 2017).

Information and Communication Technology (ICT) consists



of a broad range of technical tools and services used to develop, archive, interact, disseminate, and handle information. Enhanced exposure and skills to such innovations are changing the country's economies by creativity in the development and distribution of resources and producing new entrepreneurs (Jorgenson & Vu, 2005). This ICT-driven entrepreneurship is the capacity to develop and accelerate an ICT-based market strategy that uses such innovations to manufacture and distribute products and services (Koellinger, 2005). The Internet has been described as one of the main generators of entrepreneurship (Castells, 2011; Gyaase & Asante, 2014; Iwu & Nzeako, 2012; Jainaba & Kah, 2008; Suleiman, & Zuwo, 2020, Okiyi, et al., 2019; Jarrar, et al., 2020; Awobamise, 2018).

The ability of information and communication technology (ICTs) to change societies and economies has been demonstrated in literature. The expectation that ICT will play a transformative role is more evident in Africa. Africa, the last frontier of development and known as the poorest continent, has begun to look at ICT as a magic bullet to solve its developmental problems. A recent publication in 2007 by the Africa Capacity Building Foundation argued that there is a high degree of interest in technology solutions to critical growth problems in Africa, which raises the need to accelerate the penetration and deployment of technology on the continent, especially in the public sector. Technology helps to increase the efficiency and quality of public institutions by providing an enabling environment for the region to increase its competitiveness (Jainaba & Kah, 2008; Cunningham et al. 2016; Suleiman & Zuwo, 2020).

Iwu and Ike (2009) described ICT as the collection, processing, and delivery of a speech, practical; textual, and numerical knowledge through a microelectronic combination of computing and telecommunications. ICT is essentially the use of computer-based information and communication technologies to collect, store, and transfer data. It explains exciting and innovative ways to provide students with global access to information, learning, and support (Iwu & Nzeako 2012). It is a general term that covers all communication devices or applications, including, but not limited to, radio, television, cellular phones, computer network, hardware, software, electronic mail, fax, satellite systems, as well as the various services and applications associated with them. The field of education has been affected by ICT, which has undoubtedly had an impact on teaching and learning. ICTs can improve, enhance, and expand capabilities, inspire and educate pupils, and help connect school interactions to work practices. It also creates economic viability for future employees, as well as strengthening and helping schools to change. Consequently, entrepreneurship education is needed to ensure this (Dawodu, 2005; Iwu & Nzeako 2012; Suleiman & Zuwo, 2020).

Statement of the problem

SMEs are recognized as the main source of economic growth and a major factor in promoting private sector development and partnership (Adebayo, Balogun, & Kareem, 2013). Similarly, Small and medium enterprises (SMEs) have

emerged as promising opportunities to eliminate or reduce unemployment globally, and at the same time, brought about an increased levels of technological advancement which has equally revolutionized the dynamics of the business terrain. However, SMEs in developing countries such as Nigeria are yet to fully explore the benefits of Information and Communications Technology (ICT). In addition, little is known about how SMEs respond to the opportunities provided by ICT, if indeed they see technology as an opportunity and the smaller the enterprise, the less likely it is to use technology, let alone operate as an e-business.

Again, it is also necessary to develop an approach of knowledge to inform better theory that improves practical policy mechanisms for enabling SME growth through the use of ICT technology. These are issues of significance and concerns. The Technological – Organizational- Environmental (TOE) framework has been widely used in examining the factors influencing ICT adoption generally, but few studies have attempted to use this framework to measure ICT use among the SMEs. TOE framework does not only relate the technological aspects alone, but it also explores their organizational and environmental contexts and to this end, this study will investigate the influence of technology, organizational and environmental characteristics on use of ICT as factors that predict use of ICT amongst SMEs in Delta State, Nigeria.

Objective of the study

The main objective of the research is to examine the impact of ICT for the enhancement of transaction management for SMEs in Nigeria. The specific objectives are to:

- i. To examine the relationship between technological characteristics with ICT use by SME in Delta State.
- ii. To ascertain the relationship between organizational characteristics with ICT use by SMEs in Delta State.
- iii. To examine the relationship between environmental characteristics with ICT use by SMEs in Delta State.

Research Questions

- i. What are the technological characteristics with ICT use by SME in Delta State?
- ii. What are the organizational characteristics with ICT use by SMEs in Delta State?
- iii. What are the environmental characteristics with ICT use by SMEs in Delta State?

Hypotheses of the study

The following null hypotheses was formulated to guide the study.

H₀₁: Technology characteristics have no significant correlation with ICT use by SMEs in Delta State.

H₀₂: Organisational characteristics have no significant correlation with use of ICT by SMEs in Delta State

H₀₃: Environmental characteristics have no correlation with ICT use by SMEs in Delta State

LITERATURE REVIEW

Conceptualization

Entrepreneurship

Entrepreneurship can be defined as a privatization process to turn a company into a venture or to increase and diversify assets or business units with high growth potential. Entrepreneurship is a topic that dominates the world's education circles from the late twentieth century (Ngozi 2012; Tavakoli 2013). Entrepreneurship literature analysis shows that this concept was initially established in economic theory by economists and later reached schools and other scientific theories. Canutillo, who coined the term entrepreneurship, knows needs to know entrepreneur as a venture person who buys goods at a specified cost and sells goods at an undisclosed price. Knows the entrepreneur as the planner and the integrator of the variables of output but does not find the unique features. In other words, a person who incorporates factors of production (land, labor, and capital) into production, business, or services is called an "entrepreneur" and his job is called an "entrepreneur" (Iwu & Nzeako, 2012; Suleiman & Zuwo, 2020; Cunningham et al. 2016; Tavakoli, 2013).

The concept of entrepreneurship was first established in the 1700s, and the meaning has evolved ever since. Many simply equate it with starting one's own business. Most economists believe it is more than that. To some economists, the entrepreneur is one who is willing to bear the risk of a new venture if there is a significant chance for profit. Others emphasize the entrepreneur's role as an innovator who markets his innovation. Still, other economists say that entrepreneurs develop new goods or processes that the market demands and are not currently being supplied. Most economists today agree that entrepreneurship is a necessary ingredient for stimulating economic growth and employment opportunities in all societies. In the developing world, successful small businesses are the primary engines of job creation, income growth, and poverty reduction. Therefore, government support for entrepreneurship is a crucial strategy for economic development (Suleiman & Zuwo, Orthodox economics has largely ignored the crucial role that the entrepreneur plays in the development of industry and the growth of new markets. This has been especially the case, until recently, in development economics, which appeared to concentrate on macro-economic research and less on microeconomics as a human-driven operation. Entrepreneurship, though, is seen as a crucial contextual part of a variety of economic growth frameworks that understand the complexity of incomplete knowledge (Knight, 1921; Mises, 1966; Kirzner, 1979; Casson, 1982; Suleiman & Zuwo 2020; Duncombe 1999). Drucker (1983) defines an entrepreneur as someone who manages development functions together and shares the burden or insecurity of spending his finite capital in business projects. By doing so, it incorporates the administrative roles of arranging, scheduling, hiring, monitoring, and handling the company. Odusina (1975) sees Entrepreneurship as a mechanism. Usage of usable resources in some way in a transparent and free-market system for the

sole purpose of generating income. Entrepreneurs have been defined in a variety of different forms:

- As a fulfillment of a solely functional economic position by planning and distribution of capital within a business setting marked by instability (Casson, 1982).
- As imaginative and inventive prime movers, push the economy forward through productivity by technological and administrative advancement and the creation of modern technologies (Schumpeter, 1943; Williamson, 1983). Entrepreneurs are seen to embody special qualities, distinct from those of managers or owners, which lead to the formation of new products and services, the exploitation of emerging businesses, and greater economic efficiency (Suleiman & Zuwo, 2020; Duncombe 1999).
- As an investment hunter (Knight, 1921; Mises, 1966; Kirzner, 1979). We find the capitalist to be essentially a profit-seeking person whose efforts may not generally contribute to economic growth and do not lead to greater productivity in the distribution of capital (Suleiman & Zuwo, 2020; Duncombe 1999).

Entrepreneurship has often been identified with a collection of generally optimistic, though primarily inherent, human characteristics that characterize a specific category of person. Can include creativity, enthusiasm, and tolerance to fresh concepts, diligent work, commitment into the future, desire to conserve and spend, leadership, acknowledgment of threats, and selfishness or greed (Grindle, 1989; McClelland, 1976). Theoretical theories for entrepreneurship appear to imply that entrepreneurs are born and not produced and that the financial, economic, and cultural forces that occur inside and within cultures are sometimes not deemed significant. Nevertheless, work in industrialized and developing countries indicates a broad variety of motivating variables that motivate a large range of individuals, from a broad range of social, economic, and educational backgrounds, to become self-employed/small business owners. (The Storey, 1990; Duncombe 1999).

The position of an entrepreneur, whether creative, profit-seeking, or bureaucratic, would be essential to the collection and usage of knowledge. The entrepreneur will be at the center of the 'enterprise-specific' set of information networks. The entrepreneur must perform the task of finding and defining potential business opportunities; monitoring and organizing reports on the distribution and effective usage of resources; and gathering and utilizing knowledge on new product, process, and management technologies (Duncombe 1999).

Entrepreneurship is characterized as anticipation of benefit from the use of resources (Schumpeter 1934; Hayek 1945; Kirzner 1973, Casson 1982, Shane 2003). The entrepreneur can use tools such as financial aid, low-interest loans, or government funding to operate their company. Law and Macmillan (1998) define entrepreneurship as the creation of a new business venture, which means an entrepreneurial effort at the source of a person to start a business. Krueger et al,

(2000) said that entrepreneurial intent is very significant because it is the primary predictor of future entrepreneurial behavior. The entrepreneurship aim is very critical for the growth of entrepreneurship (Iwu & Nzeako 2012; Suleiman & Zuwo, 2020; John et al. 2014).

Entrepreneurs in Nigeria in the early years usually begin their business ventures in small capital, low value-added, and it takes time to set up a business. This type of entrepreneurs needs to collect money, a source of a better place, deal with suppliers and other intermediaries, manpower problems, and other relevant issues while setting up their enterprise (Iwu & Nzeako, 2012; John et al. 2014; Garba 2010).

ICT in Entrepreneurship

ICT entrepreneurship is the creation of new businesses in the Net Economy (Matlay, 2004). The Net Economy has a strong impact on creative market growth focused on the online knowledge and connectivity network. The information society is characterized by rigorous use of information technology and a shift from an industrial to a knowledge-based economy (Evans & Wurster, 1997; John et al. 2014). Kollmann (2006) claims that the knowledge market is moving from conventional economic sectors (production, services, agriculture). Electronic communication networks and the development of IT have generated a modern.

Increased awareness and enormous potential of ICT entrepreneurship, only very few are taking advantage of and taking advantage of its benefits. "The goals are thus threefold; firstly, we are aiming at fields of ICT development in the sense of Nigeria. Third, we are creating a metric of creativity for the ICT entrepreneurship market. Third, we assess the predictive validity of small business innovation on the likelihood of supporting the development of ICT entrepreneurship. Proposals are created to direct potential work and to address the consequences for development at the corporate and public policy levels" (Iwu & Nzeako 2012; John et al. 2014).

Technology now lets companies save time and money during the start-up phase of e-business. Information and networking systems have allowed today's entrepreneurs to succeed rather than conventional entrepreneurs. Such rising technology enables conventional businessmen to enter ICT entrepreneurship (Cheng & Chang, 2004; Iwu & Nzeako, 2012; Suleiman & B/Zuwo, 2020; John et al. 2014).

The development of ICT entrepreneurship is becoming the order of business days. Reports (e.g. Mzekandaba, 2013; Austins & Tygris 2010; Eduardo 2006; Kollmann, 2006) suggest that ICT entrepreneurship is rapidly relevant and useful; proof of the growth of ICT entrepreneurship can be seen from active entrepreneurs in Western countries such as the United States (Suleiman & Zuwo 2020; John et al. 2014).

Successful companies in the United States include google.com, yahoo.com, Amazon.com, eBay.com, Twitter, Instagram, etc. Google.com is one of the positive examples of young people with ICT expertise who have been interested in ICT entrepreneurship (Eduardo, 2006). Digital trade is

much simpler and cost saving relative to conventional forms of doing business (Marks & Albert 2009). Digital company does not take too much manpower. Technologies play a supporting function in enabling companies to grow quickly and effectively (Kollmann, 2006; John et al. 2014).

ICT and Small-Scale Business

Small scale businesses are business with number of employees between 1- 5. The partnership between ICT entrepreneurship and small business growth has stimulated research issues in the creation of entrepreneurship and the idea of ICT entrepreneurship has drawn a great deal of research attention over a decade. A variety of scholars in the world of business have concluded that the growth of entrepreneurship may lead to small business success through the skills it allows to grow inside the company (Morgan and Sanchez, 2008 in Amue et al, 2013; Tamil & Bartus, 2006). Ensuring the performance of organizations can be seen as the primary aim of small business growth initiatives in entrepreneurial firms most research on the partnership between ICT entrepreneurship growth and small business creation remains far from being thoroughly clarified. The research of Migisha (2011) suggests that ICT is a medium for growth, but that it can only flourish if small tech start-ups expand and generate new employment by creativity, and that technology is not the only problem, but also entrepreneurship. The opinions of Migisha (2011) face very contradictory observations and claims in literature (e.g. Adeniyi-kie, 2004; Jackson & Markfish, 2010; Marchese & Polter, 2010). Again, Kola-Ogunlade (2014) suggests that the Web can radically transform the way citizens find and navigate resources (Igwe & Abiye 2014; Awobamise et al., 2020; Awobamise & Jarrar, 2019; Awobamise, 2014).

Again, Kola-Ogunlade (2014) suggests that the Web can radically transform the way citizens find and navigate resources. Eduardo (2006) suggests that google.com is one of the effective tales of young businesspersons leveraging ICT expertise. Kofi and Anns (2010) claim that the diffusion and implementation of ICT entrepreneurship in Western business organizations may be deemed comparatively more established and developed, although its possible effect on less created countries' market networks still needs to be properly stimulated, re-engineered and re-evaluated. The study, therefore, examines the development of ICT entrepreneurship and small business innovation in Nigeria (John et al. 2014), (Jainaba & Kah, 2008).

Why ICT Entrepreneurship

Because of the important role, ICT plays in all aspects of our personal and business lives (Muhammad 2015). The IT entrepreneur is critical to development. For example, in this era of globalization, ICT entrepreneurship allows countries like Nigeria to become producers and creators in the high-value areas of the knowledge economy. ICTs are the infrastructure of the digital global economy (Muhammad 2015). They are what make the global village possible. However, the majority of entrepreneurship learning programs are offered in business and economic institutions and disciplines. ICT entrepreneurial learning is required to address

this state of affairs. There must be an entrepreneurship focus on areas that drive change in today's digital world, particularly ICT (Muhammad 2015).

ICT and Development of Entrepreneurial Competencies

Numerous tasks can be achieved more effectively and with better results thanks to the production of ICT. For example, ICT allows it easy to evaluate various decision-making situations. This is why many people assume this ICT should be used as a resource for the growth and creation of entrepreneurship skills. ICT will provide learning experiences, strategic strategy approaches, management resources as well as company preparation programs with the aid of business plan simulators. ICT will also help to build and strengthen connectivity and social networks (Suleiman & Zuwo 2020; Jagodič & Dermol, 2015).

In the last decades, the EU has gradually pushed towards a service-oriented economy focused heavily on the growth and usage of ICT. Governments promote the production of new skills for EU residents as training for addressing the demands of the labor market. By incorporating unique ICT resources, entrepreneurship capabilities may also be encouraged, and youth unemployment can. The EU adopted a resolution "New technologies for modern employment – 2007" in which the European Commission aims to support Member States in the usage of ICT resources to improve overall capabilities in the working community (European Commission, 2007; Suleiman & Zuwo 2020; Jagodič & Dermol, 2015).

Current ICT should be seen as a way of developing ties between business and higher education. It is a significant chance to provide young people with entrepreneurial knowledge and entrepreneurship awareness. This also affects a wide range of stakeholders, not just students – such as faculty, other educational institutions at all stages, corporations, etc. (Hynes & Richardson, 2007). Effective learning should be implemented to achieve continuous improvement in entrepreneurial skills. Educators would also be conscious of instructional approaches that could be updated to satisfy business expectations to provide students with a range of competencies. Of this cause, the only approach seems to be the usage of ICT software (Galloway et al, 2005). Entrepreneurship preparation includes mastering a range of business-related abilities, such as enhancing decision-making capabilities or exposure to knowledge skills and utilizing various ICT resources to build a better workplace (DeFaoite et al, 2003).

Empirical Review

Pathan, Tunio, Ahmed and Naich (2018) examined the Information and Communication Technology (ICT) challenges that are being faced by the small and medium enterprises (SMEs) in the service sector of Pakistan. Using quantitative research methodology by adopting the close ended questionnaire as a data collection tool. The paper revealed that unavailability, complexity of technology, limited speed of broadband, unskilled staff, frequent disconnection, and incomplete online payment process evaluated, significantly influence the performance & growth of SMEs in Pakistan. The

findings equally indicated that affordability, lack of trust and cyber threats assumptions were not significant to the study.

Ghobakhloo, Arias-Aranda, and Benitez-Amado (2011) revealed that many researchers might have provided a large body of research addressing factors that affect the success of information technology (IT) adoption in organizations, but the relative importance of these factors in the context of small and medium sized enterprises (SMEs) in developing countries has not been investigated in depth. They however drew on prior operations management (OM) and information systems research, to conceptually develop an interactive model of IT implementation success and tested it empirically in Iran, which of course, is an example of a developing country and specifically based their research model and hypotheses on survey data from a sample of 121 Iranian manufacturing SMEs.

Gono, Harindranath and Ozcan (2015) examined the impact of ICT adoption and use by South African SMEs. Focusing on answering the question regarding the irrelevance of ICT adoption and use in South African SMEs, this study also found strong evidence supporting the positive impact of a number of firm level factors such as owner-manager's level of education, top management support and the availability of internal expertise. The study highlights the critical role of owner-managers and employees in South African SMEs especially in relation to their ICT expertise. This finding also established that SMEs continued to depend on their association with large organisations that had recorded major achievements on their ICT adoption for their own adoption initiatives.

Erastus, Stephen and Abdullai (2014) examined the institutional framework needed for promoting small and medium-scale enterprises in Ghana from the perspectives of SMEs. using a cross-sectional survey and the findings confirmed the existence of formal institutions that support SMEs in Ghana. The study also revealed a lack of national strategy which has led to poor coordination of government incentive support programmes and eventual failing standard in performance and expectations.

Therefore, the technology indicators of the TOE will measure all the feature of ICT use, the organisational constructs will explore the major role and functions performed by individuals while the environment constructs will look at the conditions needed to be put in place for an ICT- driven enterprise.

Theoretical Framework

Lack of user acceptance has long been confirmed to be an impediment to the success of new ICT Strategies and involvement (Ghobakhloo, Arias-Aranda, & Benitez-Amado, 2011). The Technology-Organization-Environment (TOE) is best considered relevant to this study. Technology-Organization-Environment (TOE) framework according to Tornatzky and Fleischer (1990) proposed that the adoption of innovations depends on organizational, environmental as well as technological factor. In general, the TOE model is an integrative schema that incorporates the characteristics of the technology, contingent organizational factors, and other elements from the macro-environment such as policies,

institutional opportunity, as well as constraints.

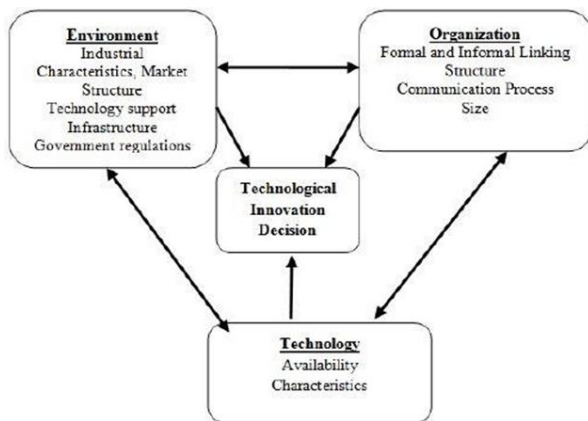


Figure 1: TOE framework (Tornatzky & Fleischer 1990)

Furthermore, the technological aspect depicts the technologies that are relevant to the organization in its pursuit of business objectives. In the context of this study, technology aligns more to perceived ease of use, perceived usefulness, users' skills, and cost of deploying the technology shaped by available resources and infrastructures that will exploit the potentials of the proposed innovation. The organizational aspect is characterized by the firm's size and scope, managerial structure, and internal resources. The environmental aspect describes how an organization conducts business with its business partners, competitors, and the government. In the context of the current study, the TOE framework is used to show that use of ICT by SMEs is determined by the influence of technological, organizational, and environmental characteristics. Other theories like Unified Theory of Access and Use of Technology (UTAUT), and Diffusion of Innovation Theory (DIT) -focused more on the adoption by individuals rather than by organizations and as such offered a partial explanation for the organizational adoption of technology and for this reason, they were not detailed enough for this study.

According to Awa, Ukoha and Emecheta (2016), the theories of TAM and TOE specifically target technology acceptance and most popularly showcase many Information Systems studies that explain end-user adoption at organizational level and equally observed that the pace of diffusion of any innovation has been tracked down by the proposed adoption models which includes: technology acceptance model (TAM Davis, F. (1989), theory of reasoned action (TRA; Ajzen & Fishbein, 1980), Theory of Planned behavior (TPB; Ajzen, 1991) Ajzen, (1991), Innovation Diffusion Theory (IDT; Rogers, 2003); Stage Model (SM; Poon & Swatman, 1999; technology-environment-organization (TOE; Tornatzky & Fleischer, 1990 and resource-based view (Caldeira & Ward, 2003). These theories apply to the adoption and use technology, though in different ways, but their central roles were connected to relating use of technology to various factors that could determine such use and application using appropriate constructs with their interpretations.

METHODOLOGY

The study adopted a survey design, which involved collection

of data from the various groups of SMEs in Warri South Local Government. The district was purposively selected because it has a large concentration of small and medium scale enterprises, where relevant SMEs can be located and selected to provide the setting and data for the conduct of the study. The population of the study is made up of 100 respondents drawn from 73 SMEs in the following sectors: pharmaceutical, manufacturing, textile, telecoms, tourism, printing, building and construction, events, and entertainment as well as general trading. Owners, managers, and employees of these SMEs were selected to provide the data for the conduct of the study because they are the major stakeholders involved in the day-to-day running of SMEs, including ICT deployment and use. Since the population of the study is small and manageable, total enumeration technique was employed.

The questionnaire method was used to collect data from the respondents. Out of the 100 copies of the questionnaire administered, 73 copies, representing 73%, were duly completed, returned, and found usable for analysis. The administration and retrieval of the questionnaire was done with the aid of research assistants who have given adequate training. Whereas the research questions were analyzed using descriptive statistical tools like frequency and percentage with Yes/No and Agree/Disagree options, the hypothesis was tested using inferential statistical tool (regression).

RESULT AND FINDINGS

Table 1. Demographic characteristics of respondents

Variables	Frequency	Percentage
Gender		
Male	49	67.1
Female	24	32.9
Age		
18-27	7	9.6
28-37	33	45.2
38-47	33	45.2
Level of Educational		
Primary School CertND	0	0.0
HNDNCE	0	0.0
Degree	17	23.2
Postgraduate	8	11.0
	15	20.5
	27	37.0
	6	8.3

Class of Business		
Pharmaceuticals Textiles	15	20.5
Telecoms	5	6.8
Business Centre (Printing)	17	23.3
Trading	7	9.6
Micro Finance Bank/Eatery	6	8.2
Filling Station	11	15.1
	6	8.2
	6	8.2

Source: Field Survey 2024

Research question 1: What are the technological characteristics with ICT use by SME in Delta State?

Table 2. ICT Infrastructure used by SMEs

ICT Infrastructure used by SMEs				
	YES		NO	
	N	%	N	%
PDA's	19	26.0	54	74.0
Desktop PC	46	63.0	27	37.0
Laptop	41	56.2	32	43.8
Tablet	33	45.2	40	54.8
Servers	34	46.6	39	53.4
Smart Phone	61	83.6	12	16.4

Source: Field Survey 2024

According to the result of table 2, Smart phone is the most used ICT by SMEs in the studied region (61:83.6%). This is followed by Desktop PC (46:63.0%) while PDA's are the least used of ICT infrastructure (19: 26.0 %).

Table 3. ICT Use by SMEs

Statement	Agree		Disagree	
	N	%	N	%
My enterprise communicates via email with external trading partners (e.g. customers, government agencies, etc.)	67	91.8	6	8.2
My enterprise promotes its business by publishing basic company information online through website (e.g. contact details, location,	66	90.4	7	9.6

goods & services etc.)				
My enterprise develops and publishes its catalogues online through websites, WhatsApp, Facebook, Skype, etc.	66	90.4	7	9.6
My enterprise receives enquiries from, or sends requests, to customers (visitors) through its website, e-mail, text messages etc.	51	69.9	24	30.1
My enterprise receives orders from customers on line	60	82.2	13	17.8
My enterprise sends invoices/bills to customers online	48	65.8	25	34.2
My enterprise receives payments online from customers.	72	98.6	01	1.4
My enterprise accepts payments online via electronic transfer, POS terminals etc.	73	100	0	0
My enterprise integrates its business with those of other businesspartners online.	58	79.5	15	20.5
My business uses computer application in processing Account information within the office	57	78.1	16	21.9
We send and receives correspondence messages with wordprocessing application.	57	78.1	16	21.9

Source: Field Survey 2024

customers” and “My enterprise accepts payments online via electronic transfer, POS terminals etc.” recorded the overwhelming response of 72(98.6%) and 72(100%) respectively while responses from all other statement too attested to the perception that SMEs uses ICT to deliver most of their services which includes; financial transactions, office processing, marketing as well as communication processes. This implies that of all the ICT uses according to this study, electronic payments transfer, and other financial transactions has the highest use.

Research question 2: What are the organizational characteristics with ICT use by SMEs in Delta State?

Table 4: Performance outcome of using ICT among SMEs

Statement	Agree		Disagree	
	N	%	N	%
Improved operational effectiveness	71	97.3	2	2.7

Reduced administrative cost	72	98.6	01	1.4
Better interaction with customer	67	91.8	06	8.2
Faster response time to enquiry	71	97.3	02	2.7
Better access to wider range of customers	73	100	0	0
New sources of revenue	63	86.3	10	13.7
Better access to information	73	100	0	0

Source: Field Survey 2024

Table 4 shows the results of the performance outcome of using ICT among SMEs. From analysis, better access to information and better access to wider range of customers 73(100%) respectively, ranked highest in the distribution, followed by Reduced administrative cost 72(98.6%). The performance outcome for using ICT among SMEs in the studied region, which ranked least in the distribution is new sources of revenue 63(86.3%).

Research question 3. What are the environmental characteristics with ICT use by SMEs in Delta State?

Table 5. Constraints of ICT use by the SMEs

Environmental characteristics of ICT use by the SMEs	Agree		Disagree	
	N	%	N	%
Enterprise’s efforts to adopt ICT are marred by inaccessibility of financial resources	32	43.8	41	56.2
(i) I have got no clue on what computers and the related technologies are and what to do to acquire them	25	34.2	48	65.8
(ii) There are no government directives or policies on use of computer and communication technology by the SMEs	43	58.9	30	41.1
(iii) My employees have excellent knowledge of computer technology	55	75.3	18	24.7
(iv) Telecommunication infrastructure around here is both inadequate and unreliable	24	32.9	49	67.1
(v) Advice and support regarding adoption of ICT such as what technology to adopt and how, is hard to find around here	33	45.2	40	54.8

(vi) The general ICT skills as applicable in our businesses is sufficient among my staff	41	56.2	32	43.8
(vii)The general process of business registration is cumbersome and time-wasting	27	37.0	46	63.0
(viii) The import duty, taxes and levies payable on technology accessories is high	51	69.9	22	30.1
(ix) The institutional support received from government agencies is inadequate	32	43.8	41	56.2
(x) There is generally inadequacy of technocrat and expertise to engage in ICT-related services	35	47.9	38	52.1
(xi) Our efforts in using computer technology are marred by irregular power supply.	53	72.6	20	27.4

Source: Field Survey 2024

From the results on table 5, some statements that relate to the general but noticeable constraints were put forward in terms of questions to the respondents. Those that recorded a high percentage of fifty percent (50%) and above were adjudged as the most common constraints while the responses below (50%) were interpreted to mean moderate constraints based on the results from this study. Therefore, statement (ix). The import duty, taxes and levies payable on technology accessories is high as well as statement (xii) Our efforts in using computer technology is marred by irregular power supply were signified as the most agreed common problem according to the results.

Electricity power supply and general import duty, taxes and levies payable on ICT products and accessories were seen as major problems. For instance, 53(72.6) respondents agreed that electricity supply is a major constraint. Similarly, 51(69.9) respondents also agreed that general import duty, taxes and levies payable on ICT products and accessories also constitute another major obstacle to the use of ICT by the Small and medium-scaled businesses. Other moderately agreed constraint is lack of government directives and policy on ICT Use by SMEs 43(58.9%).lack of institutional support and inadequate financial support from government were also rated but lowly as constraints by the respondents.

Inferential Analysis

Table 6. Relative contribution of variables to use of ICT. Coefficients(a)

Model	Unstandardized Coefficients	Standardized Coefficients	t-sig	Sig.
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	B	Std. Error	Beta	B	Std. Error
1 (Constant)	3.002	2.290		1.311	.194
Technology Characteristics	.240	.113	.305	2.116	.038
Organization	.315	.093	.485	3.376	.001
Environment	-.033	.095	-.042	-.345	.731

Source: Field Survey 2024; ^a Dependent Variable: ICT USE

Table 6 presents the result of the relative contribution of technology, organisation and environment characteristics on use of ICT among SMEs. Both technology and organization characteristics were significant with the value .035 and .001 respectively. The two values were less than .05 level of significance and as such, indicates that, the two independent variables, technology characteristics and organization characteristics have relative contribution to the use of ICT. The table equally shows the unstandardized regression weight, the standardized error of estimate, the standardized coefficient, the t-ratio, and the level of significant. As indicated in the table, the regression coefficient (standardized for Technology Characteristic (= 0.305, t= 2.116, p= 0.038 < 0.05), Organisational Characteristic (= -0.485, t= 3.376, p= 0.001 < 0.05) while Environmental Characteristics = -0.042, t= -.345 and p = .731 > 0.05) respectfully. This implies that both Technology Characteristics and Organisational Characteristics have positive relative influence on use of ICT, while the Environmental Characteristics have negative influence. The resultant regression model using the standardized regression coefficient became:

$$ICTU = 3.002 + .305TC + .485OC + (-.042EC)$$

Where: ICTU= Use of ICT

TC = Technology Characteristics OC = Organisational Characteristics EC = Environment Characteristics

Taking TC, OC and EC to be zero in this regression equation, ICT Use will be 3.002. The equation also shows that both TC and OC have positive coefficients meaning that both positively influence the ICT use while an improvement support in all the three variables, that is, TC, OC and EC will lead to 0.305 positive increase in TC, 0.485 in OC and a corresponding decrease of -0.042 in EC respectfully. The result further affirmed that OC has relative greater influence on the use of ICT among the three variables.

Similarly, an improvement in ICT Use among the SMEs in Delta will lead to 0.240 increase in Technology Characteristics, 0.315 in Organisational Characteristics and a decrease of 0.33 in Environmental Characteristics. These results then provide answers to the fourth research question.

Table 7 Relationship among variables

		ICT Use	Technology characteristics	Organization Characteristics	Environment Characteristics
ICT-USE	Pearson Correlation	1	.661	.699	.500
	Sig. (2-tailed)		.000	.000	.000
	N	73	73	73	73
Technology Characteristics	Pearson Correlation	.661	1	.791	.687
	Sig. (2-tailed)	.000		.000	.000
	N	73	73	73	73
Organizational	Pearson Correlation	.699	.791	1	.684
	Sig. (2-tailed)	.000	.000		.000
	N	73	73	73	73
Environmental	Pearson Correlation	.500	.687	.684	1
	Sig. (2-tailed)	.000	.000	.000	
	N	73	73	73	73

Source: Field Survey 2024

Table 7 explains the results of hypotheses one to hypothesis three. From the results, technology characteristics r(val) .661, shows a very strong positive relationship exists between technology and ICT Use, for instance, an increase in the technology awareness of the enterprise will lead to an improvement of ICT Use. Again p(val) .000 < .005 level of significance and is significant. Therefore, the null hypothesis, which states that technology characteristics have no significant relationship with ICT use by SMEs in Delta State is rejected. Similarly, the result also shows that Organisation characteristics r(val) is .699 and p(val) is .000, A strong positive, significant relationships while Environment characteristics r(val) is .500 and p(val) is .000. similarly, a positive and significant relationship exists in the two null hypotheses; H02: Organisation characteristics have no significant influence on use of ICT by SMEs in Delta State and

H03 Environment characteristics have no positive effect on ICT use by SMEs in Delta State are rejected. The implication of these is that all the variables have significant influence on use of ICT by the SMEs and in this case, the theory, TOE is considered suitable for research on ICT use and similar work by SMEs based on the outcome of the findings.

Table 8. Joint Influence of Variables on ICT Use ANOVA(b)

P	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	842.439	3	280.813	24.923	.000(a)
Residual	777.452	69	11.267		
Total	1619.890	72			

Source: Field Survey 2023

- a) Predictors: (Constant), Technology Characteristics, Organization, Environment,
- b) Dependent Variable: ICT USE

Table 8 shows that the independent variables have joint influence on the dependent variable. Therefore, the three (3) variables; technology, organisation and environmental characteristics will jointly affect the use of the ICT with .000 level of significance while the F value is 24.923 which is an indication that the value is high and connotes that the three (3) variables when considered together have high potentials to strongly influence the use of ICT. It also shows that the composite effect of the three variables constitutes about 72% of Influence on use of ICT by SMEs.

Discussion of findings

Essentially, this study has established the relevance of TOE conceptual framework on use of ICT among the SMEs. The findings have shown that TOE can be applied in studying the factors that are related to the adoption and use of ICT in businesses. All the three factors proposed by the TOE, that is technology, organisation and environment characteristics were found to be correlates of ICT use among the SMEs in Delta State based on the findings of this study. Meanwhile, earlier studies like, Ifinedo, (2011), Idris (2015), Abualrob, and Kang (2016) applied the TOE framework to examine the antecedents of factors on e-business usage and acceptance in small as well as medium firms elsewhere. It involved variables such as top management support, organizational readiness, and financial resources.

The findings acknowledged that the organisation context encompasses both informal and formal methods, communication processes, and the structure of the organisation which also formed one of the major findings of this study. The environmental context comprises characteristics such as government regulation, market structure and technology infrastructure. The technological

context involves the availability and features of the technology. However, it is evident that adoption of ICT can result in a variety of significant benefits for organizations.

According to this study, Smart phones, Desktop computers and Laptop are the most used gadgets among the SMEs, it reflected that they get some certain level of satisfaction and confidence from the usage, but it is also possible to get more of such services if they (SMEs) could adopt other electronics such as PDAs, tablets and hosts of server-based applications. For instance, tools like Executive Support System (ESS), Decision Support System (DSS) are good applications that can run on PDAs are good examples. Also, having a server-based application in running business activities will support exchange of knowledge and other resources including cloud resources and many other useful tools.

Among the notable use of ICT by the SMEs according to the findings of this study are, use of email, websites publishing, Social Networking, SMS texts, online orders by customers, payments online via electronic transfers from POS, banking apps and various USSD links, desk top processing of correspondence using office packages and other office suites. All these are indications to the facts that SMEs are fully aware of the potentialities of ICT use for innovative development in small and medium-scaled businesses. Adebayo, Balogun and Kareem (2013) posited that SME's use of ICT is inclusive of basic technology such as radio and fixed lines and more advanced technology such as email, e-commerce, and information processing systems.

In similar manner, the findings revealed that SMEs were of the opinion that improved operational effectiveness, reduced administrative costs, better interaction with customers, faster response time to enquiry and better access to information are possible outcome of applying ICT in businesses based on the findings of this study.

The findings also revealed the lack of government directives and policy on use of ICT by SMEs and this is similar to the outcome of survey conducted by Erastus, Stephen and Abdullai (2014) which examined the institutional framework needed for promoting small and medium-scale enterprises in Ghana from the perspectives of SMEs, it revealed lack of national strategy which has led to poor coordination of government incentive support programmes and eventual failing standard in performance and expectations. Improved quality of tasks, time parsimony, improved job performance, staff productivity, operation efficiency, improvement in decision-making, and enhanced competitiveness are examples of IT benefits for firms.

In the same vein, Eniola and Ektebang (2017) on SME firm's performance in Nigeria, competitive advantage and its impact, implemented an observatory Survey of qualitative design type through conceptual review of previous empirical data sources. They came out with reports that innovation is the most significant and critical resources for the organization to survive in a competitive environment and therefore, called on SME Managers and employees to imbibe innovation. They also observed that improvement is needed in the research and

development ability for market and product performance in order to advance in product innovation, market and services. Similarly, this study has identified some uses of ICT such as better information access, wider reach of customers, reduced administrative costs among others by the SMEs, this shows that the SMEs are well positioned to harness the full benefits of ICT use in their operation for their development.

Esselaar, Stork. Ndiwalana, Deen-Swarrray (2007) make similar findings that informal SMEs have a higher profitability than formal ones in respect to ICT Use. It also shown that ICT use are productive input factors and that their use equally bring about an increased productivity for both informal as well as formal SMEs. The finding was also corroborated by the findings of Oyebiyi, Misra, Maskeliunas, and Damasevicisius (2018). Furthermore, the challenges to the use of ICT identified by this study is in line with that of the findings of Onyedimekwu. (2013) and Oyelaran-Oyeyinka (2010).

This study has also established that the three independent variables, that is technology, organisation and environment characteristics have joint relationship with the use of ICT among SMEs, the implication of this is that any effort that could aid the positive development in any of the three (3) variables will definitely bring about an increase in ICT use among the SMEs. The research also shown that technology, organisation, and environment characteristics have joint significant and relative influence on use of ICT by SMEs and in this is an indication that all the three (3) independent variables jointly influence ICT use by the SMEs. based on the outcome of the study.

Conclusion and recommendations

From this study, it has been established that technology, organisation, and environment features are indeed relevant to the study of ICT Use among the SMEs and as such these factors must take seriously in planning the activities of SMEs and the corresponding related research work. Likewise, the study also identified some obstacles and challenges which work against the use of ICT. Notable among these are inadequate electricity power supply and general import duty, taxes and levies payable on ICT products and accessories.

All the constructs of the TOE were of great significance to the use of ICT by SMEs hence adequate attention and care should be given in order to ensure their positive influence and gain. The concerned institutions like the Small and Medium - Based Enterprises Development Authority of Nigeria (SMEDAN), Bank of Industry and Agriculture (BOI) and all other directorates of businesses and investment promotion in both federal and states ministry of commerce and industries must come to the aid of SMEs by making necessary provision and support, with these, the business activities will thrive while the economy will be sustained both at the local, state and as well as national level.

The SMEs must be ready to interface with any of these government agencies whenever an opportunity is extended to them, they must continue to make their position known to

government through their different bodies such as National Association of Small and Medium- Scaled Businesses Association of Nigeria (NASME), National and states Chambers of Commerce and Industries, Mines and Agriculture NACCIMA, council of different business associations etc. Most often, they (SMEs) must also engage in development activities by organizing special training as well as other innovative activities among themselves. It is also necessary for them (the SMEs) to respond positively and participate in any targeted survey organized either by an individual researcher as in the case of this study or government bodies like the National Bureau of Statistics (NBS) as this will help to provide genuine data on business activities for proper planning.

References

1. Abualrob, A. A. & J. Kang, J. (2016). The barriers that hinder the adoption of e-commerce by small businesses: Unique hindrance in Palestine, *Information Development*, 32(5);1528–1544.
2. Adebayo, O. S., Balogun, O. J., & Kareem, T. S. (2013). An Investigative Study of The Factors Affecting The Adoption of Information and Communication Technology In Small And Medium Scale Enterprises In Oyo State, Nigeria. *International Journal of Business and Management Invention*, 2, 13-18.
3. Al-Ismaili, S., Li, M., Shen, J. & He, Q. (2016). Cloud computing adoption determinants: an analysis of Australian SMEs. *Pacific Asia Conference on Information Systems 2016 Proceedings* (pp. 1-17). United States: AIS Electronic Library.
4. Awa, H.O Ukoha, O and Emecheta, B.C (2016) Using T-O-E theoretical framework to study the adoption of ERP solution. *Cogent Business & Management*, 1;1-12
5. Awobamise, A.O. & Jarrar, Y. (2019). Exploring the impact of social and source cues on news selection. *Plaridel: Journal of Communication, Media, and Society*, 16 (1): 141-160.
6. Awobamise, A.O. & Jarrar, Y. (2019). Understanding the e-consumer buying behaviour: Introducing an online buying decision model. *Journal of Advanced Research in Dynamical and Control Systems*, 11(8), 3215-3225.
7. Awobamise, A.O. (2018). Increased Consumerism in a Networked-Nigeria: A Study on the Effect of E-Malls and Social Media on Youth Spending. *Journal of Digital Media & Interaction*, 1(2): 40-55
8. Awobamise, A.O., Jarrar, Y. & Owade, J. (2020). An analysis of media reportage of conflict during the 2007, 2013 and 2017 Kenyan presidential elections: A peace journalism approach. *Universidad y Sociedad*, 12(2), 184-191
9. Clarke, S., Gray, D., Morgan, C., Nelson, C., Paul, L., Shelley, D & Wainwright- Crooks, S (2009). *ICT in Small and Medium-Sized Enterprises (SMEs) UWI Working Paper MSBM April 2009*

10. Cunningham, P. M., Cunningham, m. & Ekenberg, L. (2016). Factors Impacting on the Current Level of Open Innovation and ICT Entrepreneurship in Africa. *Electronic Journal of Information Systems in Developing Countries* 73(1):1–23.
11. Davis, F.D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly* 13(3), 319-339.
12. Eindhoven Centre for Innovation Studies, ECIS (2019) Innovation in Theory and Practice: papers of the ECIS opening conference edited by A. Szirmai, J. Halman and
13. Eniola, A.A. & Ektebang, H. (2017). SME firm's performance in Nigeria: Competitive advantage and its impact. Researchgate publication. *Intl. J. of Research Studies in Management*,3(2): 75-86
14. Erastus, Y.E., Stephen, A. & Abdullahi, I. (2014). Institutional Framework for Promoting Small and Medium Scale Enterprises in Ghana: Perspective of Entrepreneurs. *Australian Journal of Business and Management Research*,3(10),28-45
15. Esselaar, S., Stork, C., Ndiwalana, A. & Deen-Swarray, M. (2007). ICT Usage and Its Impact on Profitability of SMEs in 13 African Countries. *MIT Journal of information Technologies and International Development*, 4(1), 87-100.
16. Ghobakhloo, M., Arias-Aranda, D. & Benitez-Amado, J. (2011). Information technology implementation success within SMEs in developing countries: An interactive model. POMS 22nd Annual Conference: Operations management: The enabling link Reno, Nevada, U.S.A. April 29 to May 2, 2011. <https://www.researchgate.net/publication/229052628>
17. Gono, S., Harindranath, G. & Ozcan, G.B (2015). Understanding the Impact of ICT Adoption and Use in South African Manufacturing and Logistics SMEs: A Firm, Market and Regulatory (FMR) Context Perspective.
18. Hassan, A.K & Semkwiji, D. (2011). The role of mobile phones on sustainable livelihood. ESRF Discussion Paper no. 33. Daresalaam, Economic and Social Research Foundation. 23p.
19. Ifinedo, P. (2011). An empirical analysis of factors influencing Internet/e - business technologies adoption by SMEs in Canada, *International Journal of Information Technology & Decision Making*, 10(4);731 - 766.
20. 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.
21. Jarrar, Y., Awobamise, A. O., & Sellos, P.S. (2020). Technological Readiness Index (TRI) and the intention to use smartphone apps for tourism: A focus on in Dubai
22. John, G. Igwe, D., Sunny, R. & Abiye. (2014). ICT Entrepreneurship and Small Business Innovation: A Mechanism for Sustainability. *European Journal of Business and Management* 3(6):103–12.
23. Kordha, E., Gorica, K & Ahmetai, L. (2010). Managing It Infrastructure For Information Society Development. *The Albanian Case. Romanian Economic and Business Review – 6(2)*,120-130
24. Muhammad, S. Y. (2015). Small Business Innovation In Information And Communication. In *An African Conference Of The Faculty Of Education, Ahmadu Bello University Zaria, With The Theme Entrepreneurship Education For Sustainable Development In Africa, From 15th September - 19th September.*
25. Okiyi, G.O., Okeya, A.O. & Awobamise, A.O. (2019). Achieving Standards of New World Information and Communication Order for Sustainable International Broadcasting in Nigeria. *The Nigerian Journal of Communication (TNJC)*, 16(2), 329-344
26. Oladimeji, T.T & Folayan, G.B. (2018). ICT and Its Impact On National Development in Nigeria -A Conceptual Analysis ICT and Its Impact On National Development in Nigeria – A Conceptual Analysis. *Research & Reviews: Journal of Engineering and Technology* 7(1):83–90.
27. Ongori, H. (2010). Information and communication technologies adoption in SMEs: literature review. *Journal of Chinese Entrepreneurship*, 2(1), 93-101.
28. Ongori, H., & Migiyo, O. S. (2011). Understanding the drivers of information and communication technologies (ICTs) adoption by Kenyan small and medium enterprises (SMEs). *International Journal of Management Research and Review*.
29. Onyedimekwu, O. (2013). Factors Influencing the Adoption and Use of ICT by Small and Medium Sized Enterprises in Nigeria. A Paper Presented At The International Conference On Science, Technology, Education, Arts, Management & The Social Sciences (ISTEAMS) May 31 – June 01, 2013, University Of Ibadan, Ibadan, Nigeria.
30. Oyebiyi, O., Misra, S., Maskeliunas, R., & Damasevicius, R. (2018). Application of ICT by Small and Medium Enterprises in Ogun State Nigeria Chapter in *Communications in Computer and Information Science*. Retrieved from Research Gate: <https://www.researchgate.net/publication/>
31. Oyelaran-Oyeyinka, B. (2010). SMEs issues and challenges. Retrieved from http://www.cbn.gov.ng/SME_Issues%20and%20prospects_Oyeyin
32. Pathan, Z.H., Tunio, M.Z., Latif, Z., Ahmed, S & Naich, S.R. (2018). Empirical Analysis of ICT Constraints Affect the Performance of Small &

- Medium Enterprises. Pakistan. Saudi J. of Eng. Technol., 3, Iss-1 (Jan, 2018): 1-9
33. SMEDAN. (2005). Small and medium enterprises performance in Nigeria: A report presented at African entrepreneurship seminar organized in collaboration with the Scientific Committee on Entrepreneurship of the University of Essex.
 34. Suleiman, M.M., Bakin-Zuwo, B. & Salihu, H. (2017). Applying ICT In An Entrepreneurship: A Motivating Tool For Poverty Reduction In Nigeria. Pp. 1–11 in First National Conference Organized By Research & Academic Development Committee, Sorted Rano, Kano, State Polytechnic
 35. Tornatzky, L.G., & Fleischer, M. (1990). The Process of Technological Innovation. Lexington, MA, USA, Lexington Books.
 36. Venkatesh, V., & Davis, F.D., (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. Management Science 46(2), 186- 204.