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THE
IMPACT OF
INFORMATION COMMUNICATION
TECHNOLOGY
ON
SMALL AND MEDIUM SCALE ENTERPRISE
PRODUCTIVITY
IN NIGERIA

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VAASAN AMMATTIKORKEAKOULU

Tradenomi

TIIVISTELMÄ

Tekijä	Olatunji Oluwafemi Sewanu
Otsikko	Tieto- ja viestintäteknologian vaikutus pienten ja keskisuurten yritysten tuottavuuteen Nigeriassa
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Tutkimuksen tarkoituksena on kuvata pienten ja keskisuurten yritysten yleispiirteitä ja kartoittaa tieto- ja viestintäteknologian vaikutuksia pienten ja keskisuurten yritysten tuottavuuteen Nigeriassa.

Aineisto kerättiin kyselytutkimusmenetelmällä 80 vastaajalta. Saadut tutkimustulokset osoittavat, että pienet ja keskisuuret yritykset Nigeriassa edistävät omaa kehitystään ja tuotettaan tieto- ja viestintäteknologian käytön avulla. Suurin osa näiden yritysten toimijoista olivat 34-40-vuotiaita miehiä, joista useimmat olivat suorittaneet vähintään alemman korkeakoulututkinnon.

Lisäksi saatiin selville, että tieto- ja viestintäteknologia parantaa organisaatioiden tuotantoprosessia valvontateknologiana joka vähentää kustannuksia, vahvistaa organisaation kykyjä ja auttaa organisaatioiden välisen koordinaation luomisessa. Tutkimuksen perusteella voidaan nähdä, että pienten ja keskisuurten yritysten sidosryhmät ovat yhtä mieltä siitä, että tieto- ja viestintäteknologian käyttöönotto yrityksen toiminnassa muuttavat sen kehitystä ja tuottavuutta parantaen sen kannattavuutta. Näin ollen tieto- ja viestintäteknologian käyttö pienissä ja keskisuurissa yrityksissä avaa uusia mahdollisuuksia, vähentää kustannuksia sekä tekee yritysten palveluista myyntikelpoisempia.

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ABSTRACT

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The purpose of this thesis is to describe the general characteristics of (SME) Small and Medium Scale Enterprises and explore the effects of (ICT) Information Communication Technology on (SME) Small and medium scale enterprise productivity in Nigeria.

A survey research approach of the data collection was adopted to 80 respondents. Based on the sample results obtained is indicated that SMEs in Nigeria improves its processes and products with the use of Information Communication Technology and also most Small and Medium Scale Enterprises in Nigeria were operated by men within the age range of 34-40 year old and as well mostly had the least educational qualification of B.Sc.

Furthermore, Information Communication Technology enhances the production process in organizations as a monitoring technology which decreases cost, increase organizational capabilities and also assists to shape inter-organizational coordination. Hence, based on the research overviewed it is noted that Stakeholders in the Small and Medium Scale Enterprise industry agree that the introduction of Information Communication Technology in its operations changes its processes and productivity which in turn boost profitability. In the same vein, the use of Information Communication Technology by Small and Medium Scale Enterprise opens up new opportunities, reduces inventories with the use of Information Communication Technology as well as makes their services more tradable.

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CHAPTER 1

INTRODUCTION

Today we live in an information society in which more people must manage more information, which in turn requires more technological support, which both demands and creates more information. Electronic technology and information are mutually reinforcing phenomena, and one of the key aspects of living in the information society is the growing level of interactions we have with this complex and increasingly electronic environment. The general consequence is that we deal with large volumes of information, new forms and aggregations of information, and new tools for working with information Marchionini, 1997. These new tools we use to manage information at corporate, governmental and societal level are tools we must learn to use, pay for, and maintain. The primary tool of the information society is the computer. Microprocessors are used to improve the performance of other technologies, and computers are increasingly used to control and integrate other kinds of information technology (e.g. TV, radio, telephones).

Current literatures have it that ongoing advances in information systems and communication technologies allow organizations to achieve greater levels of productivity, efficiency and service delivery Brown, 2000; Dawes et al, 1997; Drucker, 1995; Tapscott and Caston, 1993. For example, one electronic mail message replaces the dictation of a memo which is then typed, copied and distributed. Electronic workflow processing allows operational reports to be stored and forwarded to appropriate units for follow-up without a host of manual intervening steps.

One other thing that is crucial as far as ICTs are concerned is that, because of technological and communication innovations, geographic boundaries that once defined citizens, client and customer service jurisdiction no longer apply. The move toward e-commerce, e-banking and e-governance provides an excellent example of how organizations are no longer restricted to, a contained geographic boundary. In this 21st century, organizations all over the world have come to realize that only those that overhaul the whole of their administrative systems and operations are likely to survive and prosper.

Due to the pressures of competition and the need to maintain a high level of efficiency and productivity organizations have been forced to catch on to the technological craze. Thus in order to place themselves in a favorable position to meet the growing expectations of their customers, and become organizations or co-operations to be reckoned with, more organizations are making use of it to smoothen and speed up the process of administration. They have not only started ensuring that their PC per capita use is one for every staff, but have also started brining PC's together to form local and wide area networks.

Many organizations use computer systems to run their inventory, control accounting, manage human resources, etc. Businesses are no longer relying on trails of paper work to conduct every day transactions. With an installed modern computer interconnectivity backbone, establishments can keep in touch, synchronize and co-ordinate activities with the utmost ease.

Managers now realize that information technology can be used as an engine to speed up processes, eliminate or reduce paperwork, increase the quality of output and service delivery, decrease storage costs, and enhance information sharing and communication. They also realize that they have to achieve not only management / staff wide computer literacy, i.e. knowing how to locate, analyze, store and use information. All staff in modern organizations needs to be able to search and gather data from different sources, analyze them, select the relevant ones and organize them in such a manner as to allow them make decisions based on the information.

These being the case how are Nigerian Small and Medium Scale Enterprises (SMEs) faring in joining the information technology bandwagon? What are the SMEs doing to increase their productivity and efficiency through the use of IT? What constraints or challenges are organizations facing in overhauling their management? In what ways exactly is ICT infrastructure enhancing efficiency in the Nigerian SMEs? These and related questions structure the argument of this study.

1.1 Statement of Problem

Small and medium entrepreneurs in Nigeria engage in business practices for survival as they are local in their nature of operation but they need to forge ahead only through global integration even though the local institutional frame work are not steady encouraging the development of small and medium enterprise towards the world economy as those of other countries. Thus, the problem that is identified for this study is how can small and medium scale businesses be developed to meet the challenges presented by globalization in the face of available infrastructure and utility in Nigeria.

1.2 Objectives of Study

The primary aim of this study is to describe the characteristics of SMEs in Nigeria and secondly to explore the impact of ICT on SMES in Nigeria. Specifically the objectives of this study are;

- i. To understand the general characteristics of SMEs and these might contribute to the development of SMEs in Nigeria.
- ii. To explore the different areas of SMEs where the use of ICT can improve productivity of SMEs in Nigeria.
- iii. To suggest ways and mechanisms on how best to enhance the full potential of ICTs as an enabler of socio-economic development of SMEs in Nigeria.

1.3 Research Questions

In order to achieve the objective of this study, the following questions will be answered.

- i. What are the main characteristics of SMEs in Nigeria?
- ii. What is the impact of ICT on SMEs in Nigeria?

1.4 Significance of the study

The significance of this study can be highlighted as follows;

- i. To provide for small scale business stakeholders the need to propagate their resourceful processes and practices towards global needs.
- ii. To incline individuals, agencies and government to create an enabling environment within which small scale businesses can grow.
- iii. To emphasize on the value of the business processes and practices that are globally oriented.
- iv. To help students and others alike see that the neglect of non-oil sector in Nigeria has been the major factor impeding small and medium enterprise for better global status.

1.5 Scope of the study

The study is based on the performance of small and medium enterprise through efficient and effective institutional practices in Nigeria. However, the location of the study is Lagos State, Nigeria where the activities of small and medium enterprises are mostly concentrated.

CHAPTER 2

LITERATURE REVIEW

The definition of SMEs differs from one country to another but is often based on employment, assets or a combination of both. Jutla *et al*, 2002 state that SMEs have been defined against various criteria such as the value of assets employed and the use of energy. 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; Onugu, 2005. However, the Small and Medium Sized Development Agency of Nigeria (SMEDAN) defines SMEs based on the following criteria: a micro enterprise as 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 to ₦49,000.000.00(€228,469,28); and a medium enterprise as a business with 50-199 people with an annual turnover of ₦50 to ₦499,000.000.00(€228,469,28).

Hence, Small and Medium Enterprise has been the vehicle that drives economic growth and development globally, especially 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 (SMEs) significant roles in the development and growth of various economies, they (SMEs) have aptly been referred to as the engine of growth and catalysts for socio-economic transformation of any country Basil, 2005. Hence, Ongori and Migiro, 2010 agree that SMEs not only help to improve the living standards of people but bring about substantial local capital formation and achieve high levels of productivity and capacity.

However, SMEs in Nigeria do not enjoy this in a substantial way due to the low state of the ICT in the country, so their success and contribution to the economy could also remain low. Even though the use of ICT robs unskilled workers of their jobs, it increases the efficiency and effectiveness with which business activities are operated. The use of digital technology in running businesses increases productivity, so a country that is not very fast in adopting these technologies will not have a fast growing economy Minton.S, 2003.

2.1 Conceptual framework

Information and Communication Technology (ICT) play a very important role in helping SMEs to have hedge over competitors in terms of accessibility to global markets. Duan *et al*, 2002 ascertains that the use of ICT in many organizations has assisted in reducing transactional cost, overcome the constraints of distance and have cut across geographic boundaries thereby assisting to improve coordination of activities within organizational boundaries. In fact, ICT has the potential to improve the core business of SMEs in every step of the business process.

Through the use of information technology, SMEs can gain from developing capabilities for managing information, intensive resources, enjoy reduced transaction costs, develop capacity for information gathering and dissemination of international scale and gain access to rapid flow of information Minton, 2003.

According to a study by Lymer, 1997 it stresses that ICT implementation in the organization which includes SMEs has the potential to reduce costs and increase productivity level. According to them small firms might find cost-effectiveness as a motivating factor to use Internet-commerce for improving communication with trading partners and consumers. Sajuyigbe and Alabi, 2012 also argue that ICTs are being used for strategic management, communication and

collaboration, customers' access, managerial decision making, data management and knowledge management since it helps to provide an effective means of organizational productivity and service delivery.

Furthermore, Ashrafi and Murtaza, 2008 also agree with the assertion that information and communication technologies (ICT) have positive effect on firm performance in terms of productivity, profitability, market value and market share. In the research study of Minton.S, 2003 affirm that 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 chains.

According to Chau ,1995, ICT enhances the production process in organizations as monitoring technologies could be used to reduce the number of supervisors required in the process. In the same view Brynjolfsson and Hitt, 2003 confirm that there is a substantial long-term productivity gain with the use of ICT in organizations. Buhalis, 2003 also notes that the application of ICT in businesses causes fundamental changes that can provide powerful strategic and tactical tools for organizations if properly applied and used. This could have great impact in promoting and strengthening SMEs competitiveness. Sakai ,2002 study also stressed that the extensive use of ICT can allow micro-enterprises with ideas and technologies to remain small and profitable or generate substantial global sales by exploiting their intellectual property over the Internet.

Hence, Onugu, 2005 affirms that ICT enables organizations to decrease costs, increase organizational capabilities and also, assist to shape inter-organizational coordination. Therefore, the use of ICT can help to lower coordination cost and increase outsourcing in organizations.

According to OECD 2004 discovers that ICT is able to improve information and knowledge management inside the firm and increase the speed and reliability of transactions for both business-to-business (B2B) and business-to-consumer (B2C) transactions. Lauder and Westall, 1997 have given their experts opinion that ICT impacts include cheaper and faster communications, better customer and supplier relations, more effective and efficient marketing, product and service development and better access to information and training.

Previous studies identify factors affecting adoption of ICT in SMEs, for instance, Adebayo, Balogun and Kareem, 2013 discover that cost, funds, infrastructure, skills and training, management support and government support attitude are the main factors that affects ICT adoption in Nigeria by SMEs. The study of Sajuyigbe and Alabi, 2012 also confirm that infrastructural, cost of acquisition, lack of finance, skills, management and government support are the main challenges of ICT adoption by SMEs in Nigeria. Pinsonneault and Kraemer, 1993 in their study have categorized internal and external barriers that impede adoption of ICT by SMEs in developing countries

The internal barriers include; owner manager characteristics, cost and return on investment, and external barriers include; infrastructure, social, cultural, political, legal and regulatory. Factors such as owner/manager characteristics, the role of top management, firm characteristics, costs and return on investment, lack of adequate telecommunication infrastructures such as poor internet connectivity, lack of fixed telephone lines for end-users, dial-up access and the underdeveloped state of the Internet Service Providers (ISPs) have been identified by Kapurubandara and Lawson, 2006 as problems that hinder SMEs' adoption of ICT in a developing country. While Chau, 1995 argues that the owner's lack of knowledge of ICT technology and perceived benefits is a major barrier to the adoption of ICT. The lack of knowledge on how to use the technology and the low computer literacy are other contributing factors for not adopting ICT Duan *et al*, 2002 also identify lack of ICT skills and knowledge in SMEs as one of the major challenges faced by all European countries, particularly in the UK, Poland and Portugal.

According to Cloete *et al*, 2002 finding in a study of SMEs in South Africa they discover that ICT adoption is significantly influenced by lack of access to computer software, other hardware, and telecommunication at a reasonable cost; security concerns and unclear benefits from ICT. A similar study in China by Kunda and Brooks ,2000 confirm that limited diffusion of computers, high cost of internet access and lack of online payment processes are the major factors that directly inhibit ICT adoption by SMEs. Similarly, a survey conducted by Lal 2007 on globalization and the adoption of ICT in Nigerian SMEs discovers that poor physical infrastructure is a major factor inhibiting ICT diffusion. Arendt, 2008 agrees with previous researchers that cost of ICT equipment and networks, software, and re-organization are barriers to ICT adoption in most SMEs. Okwuonu, 2013 concludes that poor communications infrastructure leads to limited access and higher costs. Many SMEs operating in Nigeria still experience this, as they still use outdated equipment and state owned monopolies, which often lead to expensive charges and limited coverage, especially in the rural areas. This discourages SMEs from adopting even the basic ICT application.

The figure below shows the trend to which the research questions infuse to the impact of ICT on SMEs

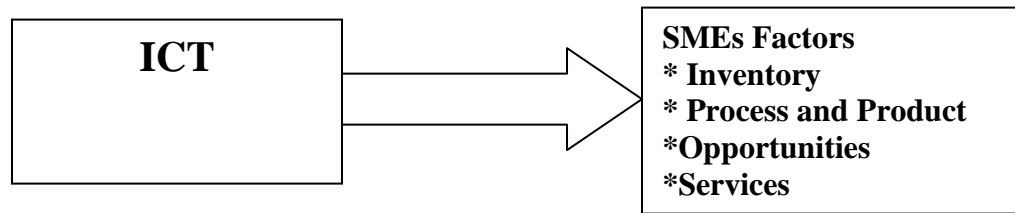


Fig 1. Research Model of study

In summary Fig 1 above , shows the research model of this study which turns up the factors that SMEs concedes in checking the impact of ICT on its productivity.

2.3 Types of small and medium scale enterprise

Here, Fasua, 2006 categorized business that fall under small and medium scale as follow in small scale enterprise, firewood supply, packaging of food items, meat retailing, plantain production, restaurant service, small scale poultry raising, rabbit raising, organizing labour squad, operating a nursery school for children, home service, arranging food for parties and host of others.

Business grouped under medium scale according to Fasua, 2006 are: soap production, aqua culture/fish farming, chalk making, foam production, nylon production, concrete block production, hair/body cream productions, chemical production, commercial poultry, professional practice claw, accountancy, education, food and beverage production among others. The following are summary of the general type of SSE:

- 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.

2.4 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 of 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 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.

Finally, the Phase of Maturity that may start after several years of beginning in the business adopts the same type of management as stable growth phase but major difference being that sources of funding may become more diverse.

2.5 Problems of small and medium enterprises

Baadam, 2004 asserted that the following problems militate against the effective operation of small and medium enterprises in Nigeria;

- i. Poor Implementation of Policies:** there have been many good policies formulated in the past by the government to improve, but weak implementation has made it impossible to realize the goal.
- ii. Lack of Continuity:** most small scale establishments are sole proprietorship and such establishment often ceases to function as soon as the owner loses interest or dies. This raises the risk of financing such business.
- iii. Poor Capital Outlay:** inadequate capital outlay has often affected small scale business adversely. Financiers often regard the sector has high risk area and therefore feel skeptical about committing their fund to it.
- iv. Poor Management Expertise:** Management has always been a problem in this sector as most small scale businesses do not have the required management expertise to carry them through once the business start growing. The situation gets compounded as training is not usually accorded priority in such establishments.
- v. Inadequate Information Base:** Small scale business enterprises are usually characterized by poor record keeping and that usually starve of necessary information required for planning and management purposes. This usually affects the realization of the sector.

- vi. **Lack of Raw Materials:** In some small scale business enterprises, raw materials are sourced externally, hence the fate of such enterprises to foreign exchange behavior. The fluctuation of foreign exchange may therefore make it difficult to plan and that may precipitate same stock that may destabilize the setup.
- vii. **Poor Accounting System:** the accounting system of most small scale business enterprises lack standard and does not make room for the assessment of their performances. That creates opportunity for mismanagement, which consequently may lead to enterprise failure.
- viii. **Unstable Policy Environment:** Government policy instability has not been helpful to small scale businesses. That has been destabilizing and has indeed sent many SME to early fold-ups.

Furthermore, the small and medium enterprises (SME), remain the hub of a country's entrepreneurial revitalization as well as the spark for net job creation and regional development. Over the last decade, government have realized the dynamic consignment of small business and technology development. Two major trends have developed in this area that are not mutually exclusive. The first is the support for and assistance to the creation of new, technology-intensive firms. The type of policy measures that have been established to support the technology intensive small and medium firms have included "incubator or enterprise centers, venture capital programs and advance technology support programs. The second is to focus a great deal of attention on providing roughly 95 percent of a nation's industrial infrastructure that will serve to improve the firms productivity and competitiveness.

Small scale business can be categorized in different ways depending on a country's industrial pattern, stage of development, policy aims and administrative set up. There are not universally accepted definitions of small business. As the word small business has relative meanings depending on the context and purpose. In general term, certain criteria are used to determine what a small business is, such criteria includes number of employees, assets value, sales value, financial strength, number of locations, relative size and so on.

In Nigeria the following definitions are used at different times and circumstances.

- i. Industrial research Unit of Obafemi Awolowo University (OAU) Ife, defines small business as one whose total assets in capital, equipment, plant and working capital are less than ₦250,000(€1,144.65) and employing fewer than 50 full-time workers.
- ii. The federal ministry of industries defined small scale business based on the Small Scale Industries Credit Scheme (SSCS) criteria which held small-scale business capital investment not exceeding ₦150,000(€686,97) in machinery and equipment done.
- iii. For the purpose of revolving loan scheme for small scale industries, the Nigerian Bank for Commerce and Industries (NBCI) in 1981/1982 defines small scale enterprises as those investing not more than ₦500,000(€2,289.78) excluding the cost of land but including working capital. However, the bank's official definition since 1985 has been from whose capital does not exceed ₦750,000(€3,434.61) excluding working capital but including land.
- iv. The Central Bank of Nigeria (CBN) 1991 credit guideline-monetary policy circular No25 stated that small scale business for commercial and merchant bank's loan is defined as one whose capital investment does not exceed ₦5 million(€22,899.41) including land and working capital or whose turnover is not more than ₦25million (€114,495.74)annually.
- v. The National Economic Reconstruction Function defined small and medium scale enterprise (SMES) with that project to be financed by the firm should have a total fixed assets cost including land of one more than ₦10 million(€45,801.17)
- vi. The Centre for Management Development (CMD) recommended that the official definition of small scale industry is manufacturing, process or service industry, employing up to fifty full-time workers shall not exceed ₦500,000(€2,290.02) power plant and machinery are utilized in its operation.

Accordingly small business may be defined as an enterprise operating with limited amount of capital small in size in its area of operation and limited number of employees such that its limited assets and liabilities could not really qualify its management to obtained loan from financial institutions.

In any nation, small-scale industries play very significant economic role in generating employment for rural communities of the society and other benefits which can hardly be generated from large firms. A-round the world, economy of every nation has improved dramatically as a result of small business development which has put the nations in a better positions in globalizations.

Aluko et al, 2003 concluded that the same manager handles variety of operations like financing, production, marketing and personnel of the enterprises, the proprietors rely on financial support from relations, money lenders or personal savings instead of borrowing from financial institution either long term or short term loans, the manager is familiar with the local community needs. Low level of education depend less on imported inputs, thus reducing the pressures on the limited foreign exchange earnings, owing to the growing global competition, consumers are searching for quality and cheaper products. This development has prompted a sound and balanced industrial development of small scale business. The utilization of locally available resources has help to conserve foreign exchange earnings.

2.6 The reason for setting up small & medium scale business

There are many reasons for setting up small scale firms. Nowadays businessmen set up firms in order to make enough profits. Therefore they set up small scale firms in places where it will be economical to produce whatever they want to produce.

The reasons why the Nigerian government set up small and medium scale firm in her country are:

- i. To reduce the dependence of her country economic or agriculture.
- ii. To replace the imported goods with homemade goods.
- iii. To make their economic more diversified and difficult.
- iv. To create job opening for school leavers.
- v. To raise the standard of living of the people.

2.7 Factors influencing small & medium scale business establishment

- i. National factor :** The location of extractive firms depend on where raw materials are to be found, for example, mining is possible only where the mineral can be obtained farming depend on soil and climate condition mineral deposits like oil, lime stone do influence the setting up of firms. Cement factories are located both at Ewekoro and Nkulaju in Nigeria. In the same way, coal is mined in Enugu and Oil in Warri and other areas.
- ii. Government Policy :** To make for distribution of industries all over the country, the government has to come in. government often influence the setting up of small-scale firms in Nigeria, either direct participation in the establishment of firms or by giving individual encouragement to set up in the particular area. Government can accelerate the development of markets for financial and non-financial services suited to the special characteristics of small enterprises by promoting product innovation and building institutional capacity. In financial markets, improving small and medium enterprise (SMES) to be profitable and therefore sustainable. This diverts government intervention toward reducing the

risks and transactions costs of lending to this segment of the market, strengthening the capacity of financial institutions to serve small-scale clients and increasing competition in financial markets.

- iii. Economic factor:** Economic factors responsible for the location of industry are:
 - a. Transport Cost:-** The nature and quantities of the raw materials are bulk heavy and therefore costly to transport, whereas the finished product is relatively compact, light and cheap and easy to transport.
 - b. Availability of Suitable Labour:-** Industries should be sited where necessary labour would be easily engaged. In a situation where this is not available and other factors within the location, retraining system could be adopted.
 - c. Availability of Funds:-** It is easy for the entrepreneur to obtained enough funds all by himself to start a business. In other to achieve his aim, he will have to contact banks and other financial institutions.

2.8 The role of small & medium scale firms in Nigeria

In any developing country like Nigeria, the role of the small scale firm is not farfetched. Basically, the use of small scale firms grossly depends on the type of economic system that exists in such country, this affects its economic system its ability to be innovative and to change and meet the economic needs of the society. In evaluating whether the small scale firm in Nigeria is a failure or not, this research aims at looking into the roles which ought to have played by this set of business enterprises and comparing their present roles with what it ought to be.

According to Staley and Morse, 1965 small scale industries make the following contributions:

Economic Efficiency: Small scale industries permit the tapping of idle resources such as labour, capital and raw materials.

- i Raising the Efficiency of the Industrial System:** Small scale industries have a lower capital or labour ration that is they are generally labour-intensive, thereby contributing towards the utilization of idle hands, thus using resources which would have been otherwise idle.
- ii. Development of Entrepreneurs and Managers:** Small scale industries are incubators for entrepreneurs and future manager of industry.
- iii. Capital Formation (Human and Materials):** Small scale industries make a significant contribution toward the creation of wealth and manpower development in the economy
- iv. Capital Saving:** They contribute towards generation of investible funds in the form of savings.
- iv Employment:** Small scale industries provides employment for no small percentage of the working population in any economy.
- v Geographical Spread of Development:** Because of their nature, many small scale industries are spread across the country. Thus, they aid rural development.
- vi Socio-Political Development:** By providing means of employment to a vast majority of the citizenry, small scale industries help to raise the standard of living of the people and help to arrest rural-urban migration so doing they reduce social problem which could otherwise threaten political stability.

- vii Labour-Social Relations:** As pointed out earlier, small scale industries serve as a training ground for young managers to develop managerial skills. This is equally so in labour relations, they also provide avenues for people to develop social relations.
- viii National Enterprise:** Some small scale enterprises contribute tremendously towards a nation's effort towards self-reliance. Some of the small-scale enterprises eventually grow to assume commanding heights in the economy. This role is of great significance for the economic and political security of a nation.

The pivot role of the small scale firms is that of providing products and services demanded by consumers and seek to make profit by balancing income against cost. This will in-turn yield a dynamic growing economy powered vast productive and natural resources as well as knowledgeable private business executives. More importantly they should be capable of expanding to provide for future need of goods and services which generate profit to them which will reflect in the nation's Gross National Product (GNP) in term of the total monetary value of the nation's business activities.

Furthermore, their labor intensive is supposed to create rooms for employment, people are employed, they are placed on wages or salaries and consequently pay tax, which will increase government revenue to enable government to accomplish its objectives in order to raise the standard of living of the entire populace.

Apart from creating employment opportunities small scale firm create easy avenue for self-employment because with a little as ₦100,000(€458.07) one can start a business of its own if not with a lesser amount. The utilization of our locally available resources is one of the best ways to conserved our dwindling foreign exchange earnings which could be invested in profit generating ventures. Small scale business has contributed immensely to the increase in regional business activities of the nation of the regional groupings. It is known fact that a reasonable size of product manufactured by entrepreneur in Nigeria are found and sold in some West Africa and other African Countries. It is therefore believed that, if these roles played by those business enterprises, they will help in curving Urban ills, fighting racial and sex discrimination in the society.

2.9 The role of government in small & medium scale business enterprises

All over the world, the role of government in the development of small business enterprises have assumed increasing relevance in recent times. This comes in form of legislature and other forms of regulations. In Nigeria for example, the regulatory role of government in small business activities specifically, emphasized the implementation of policies, edicts acts and decrees to regulate small business activities with a view to achieving social, security, political and economic goods toward maintaining Stability Growth and Development in Nigeria.

Some legislations that have been used regulating Nigeria small business activities over the years includes:

- i. **Nigeria Enterprises Promotion Council (NEPC)** : was established by decree No. 14 of 1988. The major function is developing and promoting exports, and assisting the development of potential exports by small business enterprises, among other types of business.
- ii. **Industrial Development Centre:** The industrial Development centers were located at Zaria (North), Owerri (East) and Oshogbo (West) with financial assistance from the USA Government. The center was to provide technical managerial and accounting assistance to small scale enterprises in wood working, metal working, automobile repair, textiles and leather working. The industrial Development Centers consist of workshops for demonstration and training where entrepreneurs were to be familiarized with new production techniques, new types of machinery.
- iii. **National Directorate of Employment:** The Directorate of Employment was established by Decree 24 of October, 1987 with the following objectives;
 - To design and implement programmes to combat mass unemployment.
 - To articulate policies aimed at developing work programmes with labor intensive potential.

- iv. **National Economic Reconstruction Fund (NERFUND):** NERFUND was established by Decree 2 of January 1989 by the Federal Government. The aims and objectives of the fund are to:
- Correct any observed inadequacies in the provision of medium to long-term financing to small and medium-scale enterprises especially manufacturing and agro-allied enterprises and ancillary services.
 - Provide medium to long-term loans to participating commercial and merchant banks for on-lending to small and medium scale enterprise for the promotion and acceleration of productive activities in such enterprises.
 - Facilitate the provision of loans with five to ten years maturity including a grace period of one to three years, depending on the nature of the enterprises or project.
 - Provide such loans either in naira or in foreign currencies or both according to the sources of funds available to the fund and the requirement of the eligible enterprises or project.
- v. **The Raw Material Research and Development Council (RMRDC)** was established by decree No. 39 of 1987. However, it commenced operation on February 10, 1988. Its basis mission is to promote the growth of process technology and resources based on industries in Nigeria.
- vi. **Company and Allied Matters Decree (CAMD) of 1990**, with its amendment, and its use for registration and monitoring the operations of business enterprises in Nigeria. Small business enterprises and their operations should understand that government oversees business enterprise all over the world. Expectedly, governments set policies based on what they believe would be of great interest to the people and the government in question. Particularly, small business enterprises involved in international business should be sensitive to the role and barriers posed by governments of the host countries of business interests.

According to Curry, 1999, some of the barriers which governments can create in international business activities include tariffs, inspections, import, licensing, restrictions on distribution, environmental controls (such as packaging product, content labeling, and pollution controls among others), technology transfer requirements, quarantine ,quotas, anti-dumping laws, embargo, national security issues, export tariffs, export licensing, anti-rerouting measures, job protection sentiments and the activities of trading blocs among others.

2.10 Problems affecting small & medium scale firms

The greatest problems facing small and medium scale enterprise in Nigeria are as follows:

- i. **Finances:** In most cases, finance is the key problem in any industrial set up. Often this is due to lack of proper management or its misappropriation in adequate finance could stragulate any business ventures. In Nigeria, the first idea for sources of funds to finance an enterprises would include personal savings ,contributions from friends and relations, credit financing from neighborhood, sale of personal/family properties, credit financing from commercial banks and loans from government. Furthermore, since most of the small business in developing countries in general are individuals or family business operating in a low income economy they are unable to generate sufficient funds through personal savings for the financing of huge capital equipment or the other fixed asset

- ii. **Lack of managerial skills:** This is another militating force against small scale business. It should be stated that money for financing business is not the critical administration. This means that proper management of small-scale firms which entails bringing both human materials resource together to achieve set organization goals poses a problem to the small scale industrialist. Those who manage small-scale industries in Nigeria are largely illiterates or semi-illiterates who do not possess the knowledge of scientific management. The result is the management of small-scale firms in Nigeria is subjected to trial and error until disastrous consequences, for the owners of such industries. Power supply is an extremely vital input of small scale industries.

- iii. **Poor communication facilities:** These are also some of the major problems confronting the small scale firm in Nigeria. These include the road, rail, water and our transport systems as well as provide direct services such as those of the doctor or the solicitor.
- iv. **Limited market:** Due to generally low income per head in Nigeria, demand for goods and services is very low, large scale production is possibly only when there is available market for the commodity with limited market for their products, many firms in Nigeria still remain small in size.
- v. **Lack of trust/the desire for independence:** Many businesses in Nigeria fear to combine with others due to lack of trust and also due to their desire for independence hence they are unable to finance a trust fund; they thus remain small.
- vi. **Frequent change of government:** This creates fears in the mind of businessmen, because change of government, always affects their policies and attitude towards some industries. For instance, the new government might decide to wipe out some established industries.
- vii. **Inadequate Infrastructural Development:** The Government has not done enough to create the best conducive environment for the striving of SSE, the problem of infrastructures ranges from shortage of water supply, inadequate transport systems, lack of electricity to solid waste management. Businesses have to provide expensive parallel infrastructure.
- viii. **Socio-Cultural Problems:** Socio-political ambitions of some entrepreneurs may lead to the diversion of valuable funds and energy from business to social waste. The problem of bias against made in Nigeria goods is significant. Bala 2002 stressed that the attitude of a typical Nigerian entrepreneur is to invest today and reap tomorrow. This short-term investment orientation is prevalent among the Nigerian Entrepreneurs. As a result, manufacturing and farming which demand long-term gestation period are jettisoned. In addition, most Nigerian Entrepreneurs do not have the investment culture of plugging

back profits. He further opined that it is ironical that despite the fact that Nigeria has a population of over one hundred and ten million people, the market for locally made goods is still poor. The reason for this is that Nigerians have developed a high propensity for the consumption of foreign goods as against their locally made substitutes.

- ix. **Poor and inadequate start-up process:** the start-up process of a business is important to its failure or success. Nzalibe 1996 opined that business especially small ones are started by the entrepreneurs and are usually guided by a vision, an intuitively experienced image of what is to be achieved and how to get there. The way an entrepreneur structures and creates his business reflects his personality, and cannot be transferred to his successors. The severity of the succession problems in family businesses is significant in their success and any future combination.
- x. **Management Problems:** Rogers, 2002, added that inefficiency in overall business management and poor record keeping is also a major feature of most SSE; Technical problems/competence and lack of essential and required expertise in production, procurement, maintenance, marketing and finances have always led to funds misapplication, wrong and costly decision making.
- xi. **Strategic Planning Problems:** SSE often do not carry out proper strategic planning in their operations. Ojiako, 1987, stated that one problem of SSE is lack of strategic planning. Sound planning is a necessary input to a sound decision-making.
- xii. **Fear of taking greater risks:** Running business means running risk, that is, the probability of gaining or loosing are usually common in Nigeria now, in order not to lose too much, they should undertake large business they therefore content themselves with their small business

CHAPTER 3

RESEARCH METHODOLOGY

This chapter describes the research method adopted in the research study. It focus on research designs, population of study, characteristics of the study, samples size and sampling technique, sources of data, methods of data collection, data collection instruments, data analysis method and limitation of research methodology. This includes a brief description of the types of research design and method of data collection

3.1 Sample and data collection

For the purpose of this study, survey research design was adopted out to secure as much and reliable information and data that could help in the writing of the project. Population refers to the whole size of individuals which form the subject in a particular study. It is practically impossible to cover the whole population if it is thus a sample is determined. The characteristics of the population of small and medium scale enterprises located in Lagos Nigeria.

Participants working in the SMEs were contacted at a seminar in Lagos and were asked to complete and return the questionnaire. Participants contacted include different departments of the companies that were in attendance. Of the 80 managers participants contacted, sixty two completed and returned the questionnaire. This accounted for 80% response rate.

3.2 Measurement of variables

Appendix 1 contains an abbreviated copy of the research questionnaire used to measure the reported variables used in this study. The questionnaire is designed into two sections. The first part consists of carefully selected questions relating to the impact of ICT on SMES of respondents while the second part is the background information of the respondents. The questionnaire shall be administered and data would be collected directly. The use of too

technicalities terms were strictly avoided to enable our respondents' easy understanding of the questions.

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. Descriptive statistics will be used in this study.

3.3 Limitations of the research methodology

The major setbacks faced in this research methodology adopted are that of inadequate and delayed responses and cost of administering large number of questionnaire which negatively impacted on the outcome of the research.

CHAPTER 4

DATA ANALYSIS AND SURVEY RESULTS

The section presents both the background information and descriptive statistics. The background provides information on age, gender, and educational background.

4.1 Background information

The background information of the respondents are presented in Tables 1-3. Table 1 presents information on gender.

Table 1. Gender distribution of Respondents

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Male	45	72.6	72.6	72.6
Female	17	27.4	27.4	100.0
Total	62	100.0	1000	

The results above indicate that 73% of the respondents were male and 27% were female. This indicates that more men are managing SMEs compared to women in Nigeria.

Table 2 : Age of Respondents

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 18-25	6	9.7	9.7	9.7
26-33	21	33.9	33.9	43.5
34-40	23	37.1	37.1	80.6
41 & Above	12	19.4	19.4	100.0
Total	62	100.0	100.0	

The results in Table 2 above show the age distribution of respondents. The results indicate that 37% of the respondents in between the 34-40 years of age are managing SMES. Respondents within the age bracket of between 26-33 reveals 21 in number which constitutes about 34% in sample size and 41 & above category showed the second least in the category with 19 % with 12 in frequency number.

Table 3 : Educational Qualification of Respondents

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid OND	4	6.5	6.5	6.5
HND	9	14.5	14.5	21.0
BSC	37	59.7	59.7	80.6
MSC	6	9.7	9.7	90.3
MBA	6	9.7	9.7	100.0
Total	62	100.0	100.0	

Table 3 depicts that educational level of respondents that has an Ordinary National Diploma amounts to 4 respondents earning a total percentage of 6.5% from the total population while a total of 9 respondents bagged a Higher National Diploma with a percentage of 14.5% from the total sample size. Furthermore, a total of 37 respondents bagged a Bachelor's degree in different discipline which posted the highest in terms of educational qualification earning a total percentage of 59.7% while 6 respondents have obtained a Master's of Science Degree with 6 having a Masters of Business Administration representing 9.7% respectively. This indicates that in Nigeria most SMEs are managed by B.Sc holders.

4.2 Impact of ICT on SMEs

In order to determine the impact of ICT on SMEs, it was necessary to determine how ICT have influenced the business environment of SMEs in Nigeria. The section provides information on descriptive statistics. Table 4 presents the descriptive statistics of the variables used in exploring the impact of ICT on SMES in Nigeria.

Table 4. Descriptive Statistics

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
SME do introduce ICT to change its process and product	62	1,00	2,00	1,6129	,49106
SME uses ICT to make their services more easily tradable	62	1,00	4,00	1,8065	,74303
SME reduces inventories with the use of ICT	62	1,00	4,00	2,0000	,92329
SME uses ICT to open up new opportunities	62	1,00	4,00	2,0484	,91306
Valid N (listwise)	62				

From the table 4, it shows that the most important effect of ICT on SMEs “introducing ICT to change process and product”. This is followed by “Using ICT to make SMEs services more easily tradable” as well as “SMEs reduces inventories with the use of ICT” and lastly “SMEs uses ICT to open up new opportunities”

Additional analyses are presented below. Table 5 shows that 100% of the respondents agree that SMEs do introduce ICT to change its process and products. . Hence, this in relation to "*Chau, 1995* who argues that ICT enhances the production process in organizations as monitoring technologies could be used to reduce the number of supervisors required in the process"

Table 5 SME do introduce ICT to change its process and product

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	23	37.1	37.7	37.7
Agree	38	61.3	62.3	100.0
Total	62	100.0		

Table 6 below represents the respondent's opinion. Where 83.9% agree that SMEs uses ICT to make their services more easily tradable. This supports "Minton, 2003 who affirms that 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"

Table 6 SME uses ICT to make their services more easily tradable

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	23	37.1	37.1	37.1
Agree	29	46.8	46.8	83.9
Uncertain	9	14.5	14.5	98.4
Disagree	1	1.6	1.6	100.0
Total	62	100.0	100.0	

Here in table 7, respondents opinion shows that 71% of the respondents agree that SMEs uses ICT to reduce inventory. This supports Lauder and Westall, 1997 that ICT improves supplier relations and consequently a reduction in inventories.

Table 7. Use of ICT to reduce inventory

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	22	35.5	35.5	35.5
	Agree	22	35.5	35.5	71.0
	Uncertain	14	22.6	22.6	93.5
	Disagree	4	6.5	6.5	100.0
	Total	62	100.0	100.0	

In table 8 as shown below indicates that 69.4% agree that SMEs uses ICT to open up new opportunities. Hence, this in relation to *Onugu, 2005* affirms that ICT enables organizations to decrease costs, increase organizational capabilities and also, assist to shape inter-organizational coordination. Therefore the use of ICT can help to lower coordination cost and increase outsourcing in organizations"

Table 8 SME uses ICT to open up new opportunities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	20	32.3	32.3	32.3
	Agree	23	37.1	37.1	69.4
	Uncertain	15	24.2	24.2	93.5
	Disagree	4	6.5	6.5	100.0
	Total	62	100.0	100.0	

CHAPTER 5

SUMMARY OF THE EMPIRICAL

The first question of the study is related to main characteristics of SMEs in Nigeria. The study indicates that the main problems of are SMEs are Poor implementation of polices, lack of continuity, poor capital outlay, poor management expertise, inadequate information base, lack of raw materials, poor accounting systems and unstable policy environment. Our results also indicate that most SMEs in Nigeria are managed by men and are between the age range of 34-40. However, the research results also shows that most stakeholders in the SME sector holds B.sc qualification in their respective fields of specialization.

The research question relives that SMEs do introduce ICT to change its process and product as this relates to the words of "Chau, 1995 who argues that ICT enhances the production process in organizations as monitoring technologies could be used to reduce the number of supervisors required in the process". These is followed suit by the next question which relives that SMEs uses ICT to make their services more easily tradable as "Minton, 2003 affirms that 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".

In the same vein, stakeholders in the SME sector in Nigeria affirms that the use of ICT helps to reduce inventory. Hence, this supports "Lauder and Westall, 1997 that "ICT improves suppliers relations consequently a reduction in inventories". The last research question also relives that SMEs uses ICT to open up new opportunities as affirmed by "Onugu, 2005 that ICT enables organizations to decrease costs, increase organizational capabilities and also assist to shape inter-organizational coordination. Therefore the use of ICT helps to lower coordination cost and increase outsourcing in organizations"

SMEs have been fully recognized by government and development experts as the main engine of economic growth and a major factor in promoting private sector development and partnership. The development of the SMEs sector with influence of ICT therefore represents an essential element in the growth strategy of most economic and holds particular significance in the case of its productivity level in Nigeria under review. SMEs not only contribute significantly to improve living standards, employment generation and poverty reduction but it also brings about substantial domestic or local capital formation and achieve high level of productivity and capability.

Conclusion

From the context of this study, a sound conclusion can be drawn with emphasis that ICT has a great influence on productivity in the SME industry in Nigeria. Hence, based on the research overviewed it is noted that Stakeholders in the SME industry agree that the introduction of ICT in its operation changes its process and productivity which in turn boost profitability. In the same vein, the use of ICT by SMEs open up new opportunities , reduces inventories with the use of ICT as well as makes their services more tradable.

Furthermore, ICT has the potential to improve the core business of SMEs in every step of its business process, through the use of information technology and SMEs can gain from developing capabilities for managing information, intensive resources, enjoy reduced transaction costs, develop capacity for information gathering and dissemination of international scale and gain access to rapid flow of information.

Limitations of study

- This study was mainly focused only 4 key variables of ICT.
- The Sample size was small due to difficulty in getting together major stakeholders in the SME on standby to answer related questions.
- As at the time of this research work the target was SMEs in Lagos, in Western Nigeria

Recommendations

Driven by the findings in this research, SMEs in Nigeria has a long way to go for the sector to be most relevant, focused, productive enough and play the crucial role it is expected to in relation to contributing to the growth and development of the economy of Nigeria. The benefits and need to go for technology development through either technology transfer or technological innovations or inter-firm linkages should be emphasized in the light of dimensions of global competition and its negative fall outs as well as positive opportunities, to small and medium scale industries entrepreneurs through seminars and work shop, at the local level.

Hence, for the government to succeed in reinventing the future of SMEs, it has to extend the current reforms to her educational system to make it more functional , relevant ,need -oriented and driven. Emphasis should be on modern technology, practical technological and entrepreneurial studies aimed at producing entrepreneurs. There is the urgent and dire need for the government to revamp the SME sector of the economy on order to redress the growing unemployment rate in the country, reduce poverty level, enhance standard of living and stimulate economic growth and development.

Furthermore, emphasis should be made on encouraging the female gender to participate more in activities of SMEs in Nigeria and as well include the study of both ICT and SMEs development in her school's curriculum, establish more vocational schools in both local and urban settlements of the country. The government should help through enlightenment programmes for the youths right from grassroots.

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Appendix 1

QUESTIONNAIRE FOR RESEARCH WORK

Dear Respondent,

This survey questionnaire which is aimed at identifying and collecting data on "**The Impact of Information and Communication Technology (ICT) on Small Medium Scale Enterprise(SME) productivity In Nigeria**", your response to the questions will be appreciated and treated confidentially. Please tick the appropriate space provided.

Researcher: Olatunji Oluwafemi Sewanu
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SECTION A

Please tick (✓) appropriately in the box that reflect your answer to the question below.

Key

SA (Strongly Agree), A (Agree), U (Uncertain), D (Disagree), SD (Strongly disagree)

Above key point are Likert Scale.

Note:

SME-Small Medium Enterprises,ICT-Information and Communication Technology

	SA	A	U	D
SD				
1. SME do introduce ICT to change its processes and products	{ }	{ }	{ }	{ }
2. SME reduces inventories with the use of ICT	{ }	{ }	{ }	{ }
3. SME uses ICT to make their services more easily tradable	{ }	{ }	{ }	{ }
4. SME uses ICT to open up new opportunities	{ }	{ }	{ }	{ }

SECTION B

Please tick (√) appropriately in the box that reflect your answer to the question below.

Personal Data

1. Age :18-25 YEARS { } 26-33 { } 34-40 { } 41 YEARS and above { }
2. Gender : Male { } Female { }
3. Educational Qualification: OND { },HND { }, B.sc { } M.sc/ MBA { }
others(specify)

Appendix 2

DEFINITION OF KEY TERMS

- i. **GLOBALIZATION:** This refers to the manner in which is exercised in the management of a country economic and social resources.
- ii. **GLOBALIZATION:** This refers to the process of liberalization of trade, free movement of capital integration of market and acceleration development in information technology (interest and exchange rates, terms of trade, tariffs) such that they are on the positive and favorable scale.
- iii. **PUBLIC INFRASTRUCTURAL AND UTILITY:** These refers to those facilities (such as road, urban and rural area, power supply, potable water, hospitals, schools, telecommunication) provided by the government to support practices of small scale development.
- iv. **PRODUCTIVITY:** This refers to the ratio of output to the corresponding input of factors of production (labour, land, capital and technology).
- v. **LEGISLATURE FRAMEWORK:** This refers to the legal basis created for establishment and improvement of the survival and growth rate of small scale business in their practices
- vi. **INFORMATION TECHNOLOGY:** This refers to the technology that involves the electronic acquisition storage and dissemination of vocal, pictorial, textual and numerical information.
- vii. **NEO-LIBERALISM:** This is the system of minimizing the state's (nation) interference in the economy.

- viii. **WORLD TRADE ORGANIZATION (W.T.O):** This is an international body or institutions that regulate the trade relationship or agreement among countries through formulation of integrated constitutions.

- ix. **ECONOMIC FACTOR:** These are the institution or organization whose activities are relevant to economy of any nation. They are trade, professional and business association or academic institutions or agencies.

- x. **SMALL SCALE BUSINESS:** CBN (Central Bank of Nigeria)1993 define small scale business whose total cost excluding working capital above ₦1Million(€4,595.31)but not more than ₦10Million(€45,991.35)